SAS-University-Edition using Oracle VM VirtualBox

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With SAS University Edition, one gets SAS Studio, Base SAS, SAS/STAT, SAS/IML, SAS/ACCESS and several time series forecasting procedures from SAS/ETS. Steps for downloading of SAS University Edition and its installation in windows operating system environment are described in this document. This document is prepared to provide guidelines to users. It is useful for those who do not have SAS license that is compatible with the operating system on which working and are working for an academic/teaching organization. This may, however, be used for teaching even if the SAS Licensed version is available. However, for more details, one may refer to the website http://www.sas.com/en_us/software/university-edition.html. Similar procedure may be used for OS X and Linux operating system. This

System Requirements

Windows

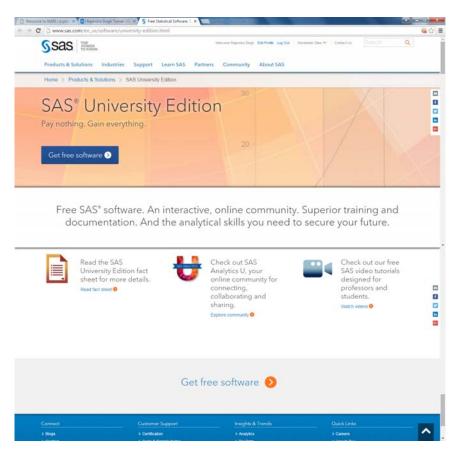
- Microsoft Windows version 7, 8, 8.1 or 10
- 64-bit hardware with a minimum of 1GB of RAM
- One of the following virtualization software packages:
 - ✓ VMware Player 7 or later
 - ✓ Oracle VirtualBox 4.3.16 or later
- One of the following web browsers:
 - ✓ Microsoft Internet Explorer 9, 10 or 11
 - ✓ Mozilla Firefox 21 or later
 - ✓ Google Chrome 27 or later
- Virtual Network Configuration: Network Address Translation (NAT)

Broad View to install SAS University Edition

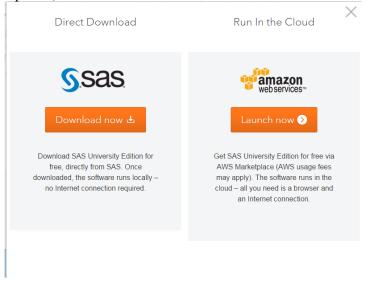
- 1. Download the SAS University Edition File.
- 2. Unzip the SAS University Edition compressed file.
- 3. Configure VMware Player or Oracle Virtualbox.
- 4. Start SAS University Edition in VMware Player or Oracle Virtualbox.

How to Download SAS- University Edition

Open the site <u>http://www.sas.com/en_us/software/university-edition.html</u>. Following page gets opened, Scroll down the page, at the end click on "Get free Software" (see screen shot given below)



A new window gets opened, select "Download now" from this window



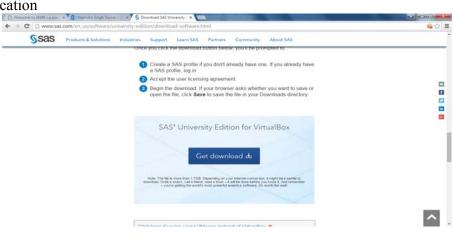
Following pages gets opened select operating system. Since this documents puts emphasis window based installation therefore Selecting "windows"

sas 🖓	roducts & Solutions Industries Support Learn SAS Partners Community About SAS	
	Download SAS [®] University Edition	
	Start by choosing your operating system below:	
	Windows OS X LINUX	
	Windows OS X LINUX Before You Begin	
To en		

Scroll down and select "Download SAS"

SSAS Products & Solutions

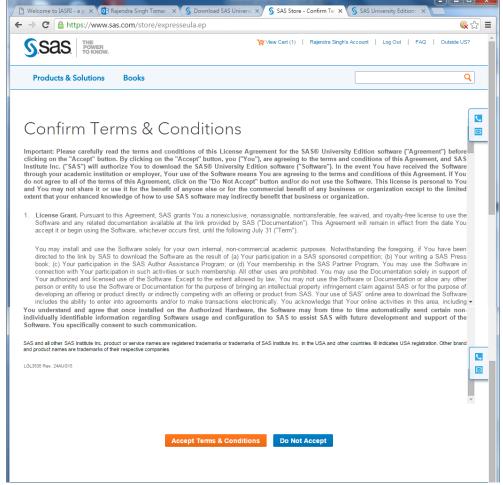
Following page appears. From the screen shot given below it is clear that 1) Create SAS profile if already not created, after creating profile 2) Accept License Agreement 3) Save the download at desired location



One has to create his/her profile with valid e-mail ID along with password (keep with you for future use) on the profile page as shown under.

Sas. The POWER TO KNOW.		s	AS Lo
Already Hav	ve a Profile?	New User?	
Email:		Create your profile to take full advantage of our site.	
Password:		Create	1
	🗷 Keep me log	ged in Why Create a Profile?	
	Log	Get social - join SAS communities. Get help - follow your tech support questions. Get software - download software/hot fixes.	
Forgot Pas	ssword?	Get informed - manage e-learning/newsletters.	

In terms and condition page scroll down, sometime one may have to wait for few minutes, finally select "Accept Terms & Conditions"



Note: While downloading and before accepting the terms and conditions, please read them carefully.

After accepting terms and conditions, order summary appear on the screen as shown below

		<u></u>
SSAS. TO KINOW.	Wilee Cart (3) Rajendra Singha Account Log Out FAQ Outside US1	1
Products & Solutions Books	٩	
February 10, 2016		
Thank you for your order.		-
You can track the status of all your orders online or	ryour account page. If you have any questions about your order, please contact us at store@sas.com.	
Order Summary		
Billing Email Address:	rs tomar@icar.gov.in	
Order Number	366976	
Order Date	February 10, 2016 2:04:41 AM EST	
Terms & Conditions	UE_LGL3535_24AUG15 accepted on February 10, 2016 by Rajendra Singh Tomar (n. tomar@icar.gov.in)	

SAS University product will start downloading.

- 1. It is a zipped file (see at the bottom of screen shot below).
- 2. After completion of downloading, unzip the file and **Save** at the desired location under the folder **SASUniversityEdition** and sub Folder **myfolder**. (Create these two folders)

One can install SAS with (1) VMware Player or (2) VM VirtualBox. It is difficult to make a choice between two. However, it appears that working of VMware player is IP based where VM Virtual works on local host.

Using and Configuring VM VirtualBox

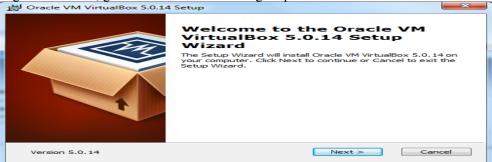
Download VM VirtualBox

Enter the website address <u>https://www.virtualbox.org/wiki/Downloads</u> on URL to download the the Orcale virtualbox. Shown below page will get opened. Since we are interested in window based virtualbox platform so select **VirtualBox 5.0.14 for windows hosts.**

Note: <u>It is important to mention here that at step 2 of that page there are link</u> ''Download <u>VirtualBox for Window''</u> If one open this link on new tab following page appears and one can <u>download both simulteneously</u>



Downloading wizard starts, given below window will get open



Select Next

岁 Oracle VM VirtualBox 5.0.14 Setup	×
Custom Setup Select the way you want features to be installed.	
Click on the icons in the tree below to change the w	vay features will be installed.
Image: WirtualBox Application Image: WirtualBox USB Support Image: WirtualBox Networking	Oracle VM VirtualBox 5.0.14 application.
VirtualBox Bridger VirtualBox Host-C	This feature requires 162MB on your hard drive. It has 3 of 3 subfeatures selected. The subfeatures require 632KB on yo
Location: C:\Program Files\Orade\VirtualBox\	Browse
Version 5.0.14 Disk Usage < B	ack Next > Cancel

Select VirtualBox Application as shown in above snapshot and select Next

B Oracle VM VirtualBox 5.0.14 Setup					
Custom Setup					
Select the way you want features to be installed.					
Please choose from the options below:					
Create a shortcut on the desktop	Create a shortcut on the desktop				
Create a shortcut in the Quick Launch Bar					
Register file associations					
Version 5.0.14	ancel				
	ancer				

Select all option and then Next



Select Yes

B Oracle VM VirtualBox 5.0.14 Setup	×
Ready to Install	
The Setup Wizard is ready to begin the Custom installation.	
Click Install to begin the installation. If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.	
Version 5.0.14 	ancel

Select Install

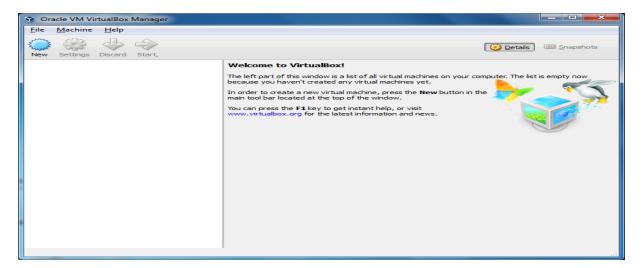


Select Finish

Configure VirtualBox

We need to configure VirtualBox in order to create a shared folder for the data that is available to both the SAS University Edition virtual image and to local system. On local computer a folder **SASUniversityEdition** and a subfolder **myfolders** has already created and saved downloaded SAS software.

A window shown in the snapshot below, usually get opened after completion of virtualbox installation, if not, Click the virtualbox icon at desktop to **Launch** it



From top Menu select **File** → **Import Appliances**

Import Appliance 0 Import Appliance 0 Export Appliance 0 Virtual Media Manager 0 Network Operations Manager 0 Check for Updates 0 Reset All Warnings 0	Ctrl+G Ctrl+I Ctrl+E Ctrl+D Ctrl+Q	elecome to VirtualBox! eleft part of this window is a list of all virtual machines on your computer. The cause you haven't created any virtual machines yet. order to create a new virtual machine, press the New button in the in tool bar located at the top of the window. u can press the F1 key to get instant help, or visit
Import Appliance Import Appliance Export Appliance Import Appliance Virtual Media Manager Import Appliance Network Operations Manager Import Appliance Check for Updates Import Appliance Reset All Warnings Import Appliance	Ctrl+I Ctrl+E Ctrl+D	<pre>/elcome to VirtualBox! e left part of this window is a list of all virtual machines on your computer. The cause you haven't created any virtual machines yet. order to create a new virtual machine, press the New button in the in tool bar located at the top of the window. u can press the F1 key to get instant help, or visit</pre>
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 Network Operations Manager Check for Updates Reset All Warnings 		cause you haven't created any virtual machines yet. order to create a new virtual machine, press the New button in the in tool bar located at the top of the window. u can press the F1 key to get instant help, or visit
	Ctrl+Q	
Exit C	Ctrl+Q	ww.virtualbox.org for the latest information and news.

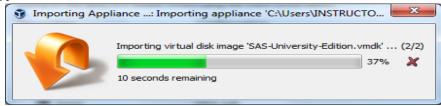
Click on file browser (on right side pane) and then select **others** and then select SAS University Edition .ova file downloaded earlier.

			npor							
				rts importing appliance the file to import belo		the O	pen Vi	rtualiz	zation Form	at
9411005_	ova	_en_	_sp0_	_1 (1)\unvbasicvapp_	_9411005_	ova	_en_	sp0_	_1 (1).ova	C

Select Next

Appliance settings	
imported VirtualBox machines.	contained in the appliance and the suggested settings of You can change many of the properties shown by double- e others using the check boxes below.
Description	Configuration
Virtual System 1	
😪 Name	SAS-University-Edition_2
📃 Guest OS Type	🔁 Red Hat (64-bit)
CPU	2
RAM	1024 MB
Dia Card Sound Card	ICH AC97
Network Adapter	Intel PRO/1000 MT Desktop (82540EM)

Select Import



Wait till the importing is completed.

From left pane select SAS University Edition and then from top main menu select Machine \rightarrow Setting

. 0	New	Ctrl+N		
ê 🚑	Add	Ctrl+A	😳 Details 💿 Snap	shot
' 🧔	Settings	Ctrl+S		
	Clone	Ctrl+O	ral 📃 Preview	
- 22	Remove	Ctrl+R	m	_
2 名	Group	Ctrl+U	y: 1024 MB	
-	Start	•	2 Floppy, Optical, Hard SAS-University-	
	Pause	Ctrl+P	Disk VT-x/AMD-V, Nested Edition_1	
0	Reset	Ctrl+T	Paging, PAE/NX	
\bigtriangledown	Close	Þ		
-	Discard Saved State	Ctrl+J		
GF	Show Log	Ctrl+L	3Y	
0	Refresh		ry: 16 MB ktop Server: Disabled	
	Show in Explorer		re: Disabled	
5	Create Shortcut on Desktop		ge	
83	Sort		SCSI Controller D: SAS-University-Edition.vmdk (Normal, 10.76 GB)	
		🕨 Au	•	
		Host Driv Controlle	Null Audio Driver	
		P Net	ork	

Following window will get opened, Select General -> Basic -> select type Microsoft Windows

 A3-Oniversity-Editio		.95	
General	Genera	4	
System	Basic	Advanced Description Encryption	
Display	Name:	SAS-University-Edition_1	
Storage	Type:	Microsoft Windows Microsoft Windows	
Audio	Version:	Linux Solaris	
Network		BSD IBM OS/2 Mac OS X	
Serial Ports		Other	
SB USB			
Shared Folders			
User Interface			
1	Invalid settin	gs detected 🔽	OK Cancel Help

Select Shared Folder in left navigation pane

🥝 s.	AS-University-Editi	on_1 - Settings		_	8	×
	General	Shared Folde	ers			
	System	Eolders List				
	Display	Name	Path	Auto-mount	Access	
8	Storage	 Machine For myfolde 	olders ers C:\Users\INSTRUCiversityEdition\myfolders	Yes	Full	
	Audio					
	Network			Lists all s this mac	hine. Use	'net u
	Serial Ports			\\vboxsv folder na	med sha	re fron
	S USB			OS, or 'm mount_p Linux OS	oint' to a	iccess
É	Shared Folders			Addition		
	User Interface					
		Invalid settings dete	octed 🕅 OK	Cancel	<u>H</u> elp	

In right side, click +. The Add Share window appears.

🥝 Add Share		? ×
Folder Path: Folder Name:	<not selected=""> <not selected=""> Other Read-only Auto-mount</not></not>	Displays a wir
	ОК	Cancel

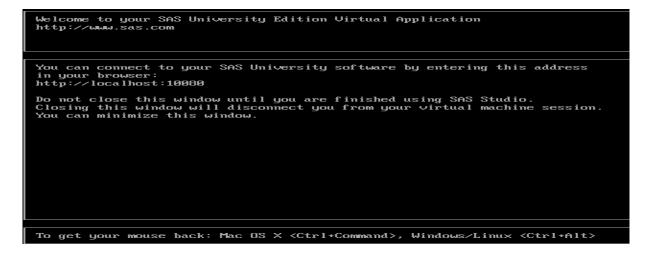
Check Auto-mount box and make sure Read Only must be unchecked. Select Others in folder path

Browse For Folder	×
Select a directory	
Samples	<u>^</u>
SASUniversityEdition	
Impfolders	
images -	
Isasstudio	
.wepreferences	
sasuser.v94	
survey data analysis	-
4 III	
Make New Folder OK Cancel	

Select the **myfolders** folder that was created earlier under SASUniversityEdition folder then click **OK**. This folder is mapped to the **My Folders** folder in SAS Studio

Starting SAS University Edition Using VM VirtualBox

- 1. On desktop select VirtualBox, select SAS University Edition virtual image in the left column, and then select Machine \rightarrow Start.
- 2. If prompted to upgrade, click **Don't upgrade**.
- 3. When the start-up process completes, the SAS University Edition Welcome screen appears



Do not close Welcome window, it can be minimized

In a web browser, enter the URL http:// localhost:10080 (one can see Welcome screen), and press **Enter** to open the SAS Information Center.



Select Start SAS Studio.	Following	window will	appear on the screen
beleet start shis studio	1 Ono wing	willdow will	appear on the serven

SAS [®] Studio	🕗 🥶 SAS Programmer - 🚍 🕐 Sign Out
 ✓ Server Files and Folders Image: The server of the server	CODE LOG RESULTS ★ ① - □ □ <t< th=""></t<>
 Tasks Snippets 	
Libraries File Shortcuts	

One can work on SAS Studio now.

Shut Down SAS University Edition in VirtualBox

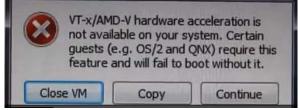
When we want to close the SAS Studio. Select Sign Out

1) In the left column of VirtualBox, click the SAS University Edition virtual image.

2) Select Machine \rightarrow Close \rightarrow ACPI Shutdown.

Frequent Problem in First Time Starting and Solution

When one Start VM VirtualBox first time and following message appear on screen



It means that changes need to be made in the BIOS of the system. Virtualization in the system may be disabled which needs to be made **Enabled**. One can enter in the BIOS of any Computer/Laptop at the start up so restart the computer/laptop and press the key/keys, set to enter the BIOS. Generally key are F2/Delete/Esc, BIOS setting may differ computer to computer as BIOS version, Processor, Chipset or Motherboard (Go for Google search based on make). Find the Virtualization Technology tab and change it to disabled to **Enabled**.

Following is BIOS setting for windiws7, After entering the BIOS select Advanced \rightarrow CPU Configuration \rightarrow Secure Virtual Machine, Enable it and then press Esc \rightarrow Save the Changes, it may be different in Window 8 and Windows 10

Hard Disk Boot Priority [Press Enter]	Item Help
First Boot Device[Hard Disk]Second Boot Device[Hard Disk]Third Boot Device[Hard Disk]Password Check[Setup]HDD S.M.A.R.T. Capability[Enabled]Limit CPUID Max. to 3[Disabled]No-Execute Memory Protect[Enabled]CPU Enhanced Halt(C1E)CPU Thermal Monitor 2(TM2)[Enabled]CPU EIST Function[Enabled]Virtualization Technology[Enabled]Full Screen LOGO Show[Disabled]Init Display First[PCI]	Menu Level When enabled, a UMM can utilize the additional hardware capabilities provide by Virtualization Technology
	Sysprobs.com

In Windows 8 Goto Settings \rightarrow Change PC Update Recovery \rightarrow Recovery \rightarrow Restart Now \rightarrow Troubleshoot \rightarrow Advanced Option \rightarrow UEFI \rightarrow Restart \rightarrow Enable Software Virtualization \rightarrow Save setting

After BIOS setting, select Machine \rightarrow Start.

This document is only for downloading and installing SAS-University-Edition using Oracle VM VirtualBox. The document for steps for working with after installation is being prepared and would be shared separately.

Acknowledgements: The discussions held with Dr. A Dhandapani, Dr. B.N. Mandal, Sh. K.V. Kumar and Sh. Satyajit Dwivedi are thankfully acknowledged.