***SAS Office Analytics Onboard Guide***

Welcome to SAS! Use the information below to learn about the SAS service VUMC IT offers to Vanderbilt University Medical Center.

**Subscription Components**

Each subscription includes:

1. BASE SAS
2. SAS/GRAPH
3. SAS/STAT
4. Access to MySQL
5. Enterprise Guide
6. SAS Studio
7. Management Console
8. SAS Add-in for Microsoft Office

**SAS User Interfaces**

SAS offers two user interfaces for Office Analytics (OA):

1. A Windows desktop client named SAS Enterprise Guide.
2. A web interface named [SAS Studio](https://sas.app.vumc.org/SASStudio/) (<https://sas.app.vumc.org:8443/SASStudio>)

SAS users install Enterprise Guide, SAS Add-in for Microsoft Office, and Management Console on their desktop. Base SAS, SAS/GRAPH, SAS/STAT, and Access to MySQL run on a server that VUMC IT hosts. Customers access the server components through Enterprise Guide or SAS Studio. Customers use Management Console to schedule large jobs on the server.

Follow these steps to access the downloads for SAS Enterprise Guide, Management Console, and SAS Add-in for Microsoft Office, and the license file for Management Console:

1. Go to <http://www.vumc.org/it/softwarestore>
2. Log-in with your VUMC email address and VUMC ID password
3. Click *Your Account/Orders* from the drop-down menu in the upper right corner of the screen.
4. Click *View Details* on the order receipt.

**Platform Support**

SAS OA supports Windows desktop clients.

Mac users can install SAS Enterprise Guide for Windows by creating a virtual machine on their Mac and installing Windows before installing Enterprise Guide. Parallels Desktop for Mac is a popular product for creating a virtual machine on a Mac. Departments may purchase Parallels Desktop for Mac through the VUMC Software Store by placing their order under the Faculty/Staff tab and paying with a credit card.

**Browser Support**

SAS Studio Google Chrome 67.0 and later.

**VPN Requirement**

SAS OA users should connect to VPN before connecting to SAS through SAS Studio or Enterprise Guide.

See <https://www.vumc.org/enterprisecybersecurity/vpn> to learn about VPN at VUMC.

**Data Storage**

Customers have the following options for storing data:

1. Each user has a user folder for storing data on a network share. The path to the network share is: [\\i110filesmb.hs.it.vumc.io\SASUser\sasuser\VUMC](file:///%5C%5Ci110filesmb.hs.it.vumc.io%5CSASUser%5Csasuser%5CVUMC) ID, where VUMC ID is the VUMC ID of the user.
2. Users may store data on a network-attached device (NAS) that VUMC IT hosts in its data center.
3. Users may store data on Microsoft OneDrive.

If you need read/write access to a network attached storage (NAS) device, submit the Pegasus ticket named [VUMC IT Storage – Application NAS](https://pegasus.vumc.org/request/discover/info/?id=97&type=0&from=%2frequest%2fdiscover%2fresults%2f%3ft%3dNAS%26s%3d&s=).

Before you can use SAS to access data on a NAS, we must create a connection between the SAS OA server and the NAS. Use the following process to submit a request for a SAS connection to a NAS:

1. Go to <http://www.vumc.org/it/softwarestore>.
2. Log-in with your VUMC email and VUMC ID password.
3. Submit the *SAS NAS Connection Request* form posted under the *Service Requests* tab.

**SASUser Folder Structure**

The top level SASUser folder houses a subfolder named sasuser. The sasuser subfolder contains a folder for each user. The names of the subfolders equal the VUMC IDs of the users.

* If you click on the sasuser folder within SASUser, you should find a user folder that uses your VUMC ID for the folder name. This folder should only contain your files.
* If you click on the sasuser folder within SASUser and click on a user folder within sasuser that belongs to another user, you should not have access to any files in the folder.

The top level SASUser folder also houses a subfolder named sasuserShared. Users may store data that they wish to share with other users in the sasuserShared folder. The data under sasuserShared is available to any SAS user.

**Network Share Connections**

Before you can access data that you store on a Network Attached Storage (NAS) device, we must create a connection between the SAS OA server and the NAS. We have created connections to the following network shares:

|  |  |
| --- | --- |
| **Network Share Connections** | **Drive to reference in your SAS Code** |
| [\\vfile.vanderbilt.edu](file:///%5C%5Cvfile.vanderbilt.edu) | Use [\\drives.vumc.org](file:///%5C%5Cdrives.vumc.org)  |
| \\ds.vanderbilt.edu\ncsdfs | Use \\drives.vumc.org |
| [\\bigdatavuhcifs.mc.vanderbilt.edu\](file:///%5C%5Cbigdatavuhcifs.mc.vanderbilt.edu) | Use [\\drives.vumc.org](file:///%5C%5Cdrives.vumc.org)  |
| [\\i10filesmb.hs.it.vumc.io\EIP](file:///%5C%5Ci10filesmb.hs.it.vumc.io%5CEIP%20)  | Use [\\i10filecifs.vumc.org](file:///%5C%5Ci10filecifs.vumc.org)  |
| [\\i10file.vumc.org\CQS](file:///%5C%5Ci10file.vumc.org%5CCQS) | Use [\\i10filecifs.vumc.org](file:///%5C%5Ci10filecifs.vumc.org) |

**Database Connections**

Before you can use SAS to access a database, we must create a connection between SAS OA and the database. Use the following process to submit a request for a SAS connection to a database:

1. Go to <http://www.vumc.org/it/softwarestore>.
2. Log-in with your VUMC email and VUMC ID password.
3. Submit the *SAS Data Source Connection Request* form posted under the *Service Requests* tab.

We have created connections to the following databases:

|  |  |  |
| --- | --- | --- |
| **Database Connections** | **System DSN** | **Pegasus Request Form for Read/Write Access** |
| Netezza | NZSQLVUMC | MCIT NETEZZA - GENERAL REQUEST |
| BIProd | ORBIPRODVUMC | MCIT ORACLE - NEW USER REQUEST |
| QPSPROD | ORQPSPRODVUMC | MCIT ORACLE - NEW USER REQUEST |
| CMSPRD | ORCMSPRDVUMC | MCIT ORACLE - NEW USER REQUEST |
| CMSUAT | ORCMSUATVUMC | MCIT ORACLE - NEW USER REQUEST |
| CLARITY Clone (TEST) | CCTSQLVUMC | VUMC IT SQL SERVER - GENERAL REQUEST |
| CARDIOPW | ORCARDIOPWVUMC | MCIT ORACLE - NEW USER REQUEST |
| CLARITY CLONE (PROD) | CCPSQLVUMC | VUMC IT SQL SERVER - GENERAL REQUEST |

Once we create a connection to a database, you can use SAS to access the database if you have read or read/write access to the database. Please contact the database owner to request access to the database.

**Data Transfer**

SAS Enterprise Guide does not impose a file size limit on data transfers. SAS Studio limits the file size to 10 MB.

**Data Backup**

VUMC IT performs nightly backups of the SAS server and SASUser network share.

Customers who store data on other network shares define the backup time and frequency when they request the storage.

**Job Scheduling**

In the \\i110filesmb.hs.it.vumc.io\SASUSER\sasuser folder there is a SAS\_Jobs and SAS\_Logs folder that is accessible by all SAS users.

* In the SAS\_Jobs folder, when a SAS user schedules a job, we store the job status log in a folder that we name according to the way the SAS user runs the job.
	+ If you submit a job to run on a schedule, we name the folder in the SAS\_Jobs folder the scheduler's VUMC ID.
		- For example, if a person with VUMC ID sawtest3 submits a job to run on a schedule, we store the job status log in a folder named sawtest3.
	+ If you use RUN NOW to run a job, we name the folder in the SAS Jobs folder RunNow\_scheduler's VUMC ID.
		- For example, if a person with VUMC ID sawtest3 submits a job using RUN NOW, we store the job status log in a folder named RunNow\_sawtest3.
	+ We store all jobs submitted by a user accordingly, and once we create the initial folder, we store all like jobs/logs from that VUMC ID in the user’s SAS Jobs/SAS Logs folders.
* In the SAS\_Logs folder, all jobs run via the scheduler will have their job logs stored in this folder. The user will need to know their job name and run date to find their log in this folder.

Users may schedule jobs using the OS Scheduling Server via SAS Management Console.

**Download and Install Management Console**

1. Go to the ***SAS Management Console Install Only*** folder in [\\i110filesmb.hs.it.vumc.io](file:///%5C%5Ci110filesmb.hs.it.vumc.io).
2. Right-click on ***setup.exe*** and click ***Run as administrator***.
3. Click ***Run*** if prompted.
4. Select the language you wish to use for viewing the SAS Deployment Wizard.
5. Click ***Install SAS Software*** and click ***Next***.
6. Specify the location of your SAS Home folder.
7. Click ***Select All*** to install the following products and click ***Next***:
	1. Report Fonts for Clients
	2. SAS Client Connection Profile Configuration
	3. SAS Intelligence Platform Object Framework
	4. SAS Management Console
8. Confirm the Expiration Date (i.e., 29APR202***4***) for the products listed in seven above and click ***Next***.
9. Click ***Next*** to accept English as the Regional Setting.
10. The installer will check your system for unwritable files and sufficient space. When the scan is complete:
	1. Click ***Next*** if there are zero unwritable files and you have enough space.
	2. If you do not have enough space and/or have unwritable files, work with your IT support provider or the Help Desk (343-HELP) to fix these problems before trying to install Management Console again.
11. You should receive a screen that shows the progress for installing the Management Console components. As the installer installs each component, you should see a green check to indicate the installation “Completed Successfully.” Click ***Next*** after the installer installs all components successfully.
	1. SAS Install Qualification Tool (W83001 Update) and (SAS Install Qualification Tool (G9J010 Update) may complete with errors. If this happens click ***Yes*** to continue.
12. Click ***Finish*** after revieing the Additional Resources screen.
13. Launch Management Console.
14. Check the following options and click ***Allow access***.
	1. Domain networks, such as a workplace network
	2. Private networks, such as any home or work network
	3. Public networks, such as those in airports and coffee shops
15. Create a new Connection Profile by entering:
	1. Machine: ***SAW1055WP.ds.vumc.io***
	2. Port: ***8561***
	3. Username: <***Your VUMC ID***>
	4. Password: <***Your password***>
	5. Authentication domain is optional.
	6. Save user ID and password in this profile: ***checked***.
16. Click ***Finish*** to save the profile.

Note: You may need to copy the install folder from [\\i110filesmb.hs.it.vumc.io](file:///%5C%5Ci110filesmb.hs.it.vumc.io) to your laptop and run setup.exe from your laptop.

**SAS Server Patching Schedule**

VUMC IT posts its patching schedule at <https://www.vumc.org/it/change-management>.

We reboot the servers the morning after we patch the servers.

**Help Resources**

1. Online Documentation:
	1. [SAS Office Analytics](https://support.sas.com/en/software/office-analytics-support.html)
	2. [SAS® Enterprise Guide 8.3: User’s Guide](https://documentation.sas.com/api/docsets/egug/8.3/content/egug.pdf)
	3. [Frequently Used Tasks in SAS Enterprise Guide for a SAS 9 Server](https://go.documentation.sas.com/doc/en/egcdc/8.3/egdoccdc/egug/p18wlfdg8gt8oqn16kd6pub5a71g.htm)
	4. [SAS Studio](http://support.sas.com/documentation/onlinedoc/sasstudio/index.html)
2. [Frequently Asked Questions (scroll to the section on SAS Office Analytics)](https://www.vumc.org/it/softwarestorefaq)
3. [Training](https://support.sas.com/edu/prodcourses.html?code=OA&ctry=US)
	1. [Getting Started Tutorial](https://documentation.sas.com/api/docsets/egug/8.3/content/egug.pdf)
	2. [SAS Tutorials](http://support.sas.com/training/tutorial/)
	3. [SAS® Enterprise Guide®: Getting Started](https://www.sas.com/en_us/webinars/ate-getting-started-sas-enterprise-guide.html)
	4. [SAS® Enterprise Guide®: Hidden Gems](http://www.sas.com/en_us/webinars/hidden-gems-in-sas-enterprise-guide/register.html)
	5. [SAS® Enterprise Guide®: Tips, Tricks and Considerations for Programmers](https://www.sas.com/en_us/webinars/ate-enterprise-guide-tips-tricks-considerations.html)
	6. [SAS® Studio or SAS® Enterprise Guide®: What is the Best SAS® Programming Interface for Me?](https://www.sas.com/en_us/webinars/ate-studio-enterpriseguide-best-programming-interface.html)
	7. [SAS® Studio: An Introduction](https://www.sas.com/en_us/webinars/ate-intro-sas-studio.html)
4. Other Support Resources
	1. [SAS Enterprise Guide Fact Sheet](https://www.sas.com/content/dam/SAS/documents/product-collateral/fact-sheets/en/sas-enterprise-guide-101431.pdf)
	2. [SAS Studio Fact Sheet](https://www.sas.com/content/dam/SAS/en_us/doc/factsheet/sas-studio-107188.pdf)
	3. [SAS Ask the Expert Sessions](https://www.sas.com/en_us/learn/ask-the-expert-webinars.html#business-intelligence)
	4. [SAS Studio: Help Center](http://support.sas.com/software/products/sas-studio/faq/index.html)
	5. [Leave Your Bad Code Behind: 50 Ways to Make your SAS Code Execute More Efficiently](https://support.sas.com/resources/papers/proceedings12/257-2012.pdf)