

Using SAS® OnDemand for Academics: Ten Tips for Success

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ABSTRACT

SAS® OnDemand for Academics is a free resource that is offered to students, professors and teachers, and independent learners. This online delivery model provides the opportunity to learn valuable skills in SAS programming as well as tools for developing knowledge of analytics. Because SAS OnDemand for Academics is cloud-hosted, not much setup is required.

This paper shares tips to maximize the chance of success with using SAS OnDemand for Academics and to minimize inconvenience. These tips minimize inconveniences such as problems logging on, running programs that use Java, and handling issues with instructor data. Drawn from years of experience helping customers, the topics include categories for account setup, dealing with data, and differences among the products that are offered. The discussion also covers what you need to know about how SAS OnDemand for Academics is distributed geographically. By sharing these tips, the teachers and professors, students, and independent learners can benefit from the experience of others.

INTRODUCTION

SAS OnDemand for Academics offers cloud-based access to several important SAS® products that can be used for learning. SAS OnDemand for Academics is free for students, instructors, and independent learners. Because it is cloud-based, it requires no server installation for users, and there is minimal client-component installation. Instructors can distribute data to those who are enrolled in classes, and students can upload their own data and store assignments.

This paper uses insight from years of helping with SAS OnDemand for Academics Technical Support to provide tips to both instructors and learners. These tips make it easier to get started with using this free product and avoid common issues that arise. This paper covers issues related to accounts, data, and configuration. SAS OnDemand for Academics users might be university students, independent learners who are interested in gaining new skills, or instructors at the secondary or university level. All of these groups will benefit from these tips.

SAS OnDemand for Academics complements these other free offerings from SAS:

- SAS® University Edition runs on a local machine. So, it represents an alternative for those who need to continue their learning even when internet access is not available. SAS University Edition includes SAS® Studio and Jupyter Notebook with the SAS kernel. Although learners usually choose between SAS OnDemand for Academics and SAS University Edition, both applications can be used for free.
- SAS offers two free e-Learning courses: "SAS Programming 1" and "Statistics 1." After completing these courses, students can take the next steps in learning with additional, fee-based e-Learning courses.
- SAS Communities includes the SAS Analytics U Community. This forum provides support for using SAS OnDemand for Academics and SAS University Edition and is a great resource to both new and experienced users.
- You can also learn SAS through numerous, free video tutorials that are available. These videos cover a wide range of topics.

Note: Links to these offerings are available in the [Resources](#) section of the paper.

TIPS FOR USING SAS ONDEMAND FOR ACADEMICS SUCCESSFULLY

Here are ten tips to help you get the most out of SAS OnDemand for Academics.

UNDERSTAND YOUR OPTIONS FOR PRODUCT OFFERINGS

As shown in Display 1 below, SAS OnDemand for Academics includes SAS® Enterprise Guide®, SAS Studio, SAS® Enterprise Miner™, SAS® Forecast Server, and the server part of JMP® access to SAS servers. These products serve different purposes, and you should review the following descriptions to know which product meets your needs.

Note: Instructors choose the applications that they plan to use in class when they develop the class. The applications that they choose are available to students after they enroll in the classes.

The screenshot displays the SAS OnDemand for Academics website. The main heading is "Features". Below it, there are four bullet points describing the products:

- SAS OnDemand for Academics: Studio – Easily access your data and create SAS programs with a web browser interface.
- SAS OnDemand for Academics: Enterprise Miner – Create highly accurate predictive and descriptive models.
- SAS OnDemand for Academics: Enterprise Guide – Analyze data and publish results using a point-and-click, menu- and wizard-driven interface.
- SAS OnDemand for Academics: Forecast Server – Produce large numbers of forecasts quickly and automatically.

Below the text are two buttons: "Full Features List +" and "System Requirements +". To the right, there is a preview of the SAS Forecast Studio interface, showing a hierarchy of data sources (e.g., Denmark, France, Germany, Italy, UK) and two charts: "Seasonal C" and "Cross Series Plot for units and price".

Display 1. Features for Products Included in SAS OnDemand for Academics

If your goal is to learn to program SAS, SAS Studio is a great option for you. This application is available on every major platform, and it provides a modern user interface for learning.

SAS Enterprise Guide is another interface for learning SAS programming. This application makes reporting easy, and it can help you uncover trends in large or small quantities of data. SAS Enterprise Guide runs in Microsoft Windows operating environments.

Although the SAS language is the same whether you are using SAS Studio, SAS Enterprise Guide, or other interfaces for SAS, the programming environment differs. For example, SAS Enterprise Guide is a native Windows application and has a different feel than the browser-based SAS Studio. The widgets and windows in SAS Enterprise Guide have the feel of a Windows application. You can be confident,

however, that the actual SAS language knowledge that you learn will transfer to SAS Studio or other SAS environments where you can code in SAS.

Students learning SAS Enterprise Miner can create highly accurate predictive and descriptive models. Such skills are much in-demand. SAS Enterprise Miner is Java based and runs on Windows computers.

SAS Forecast Server produces large numbers of forecasts quickly and automatically. You can learn both the basic concepts and the practical applications of forecasting. SAS Forecast Studio, the client application for SAS Forecast Server, is based on Java, and it runs in Windows operating environments.

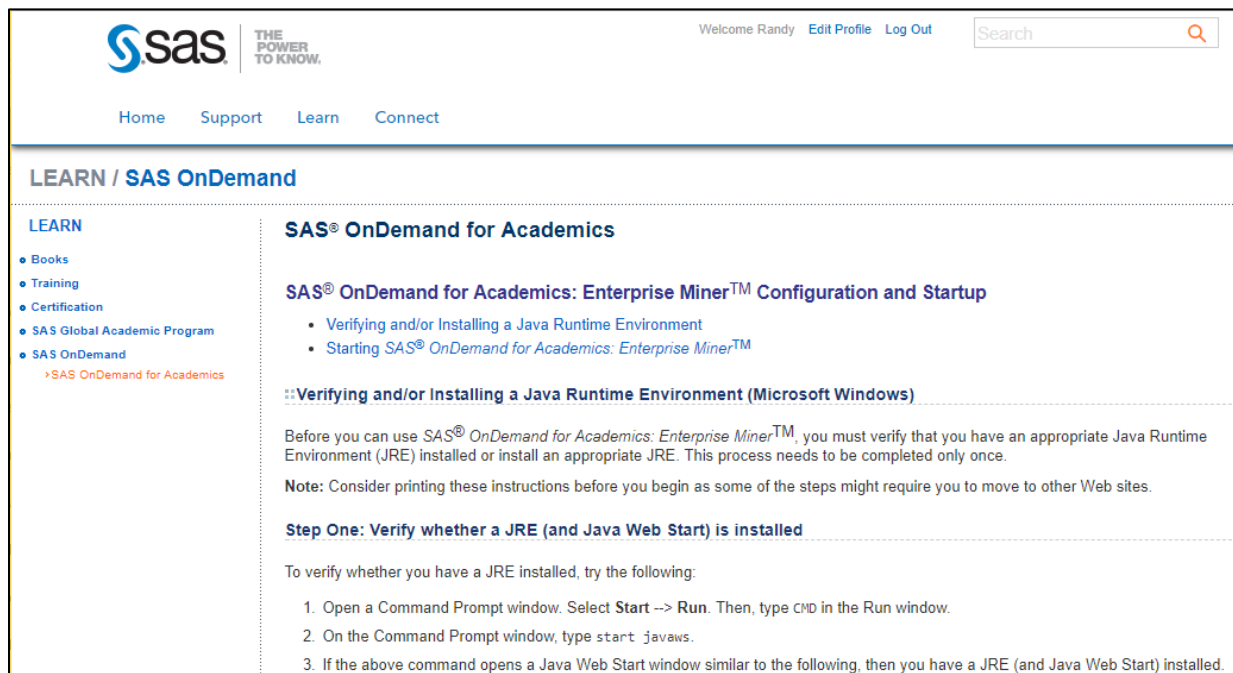
Note that SAS Studio is available to all SAS OnDemand for Academics users. The other products are available in the context of classes that are offered at colleges and universities. Therefore, SAS Studio is the only option available for independent learners.

ENSURE THAT MACOS USERS ARE INCLUDED

If you are an instructor, be sure to consider your macOS users. Most of the applications available in SAS OnDemand for Academics list Windows among the system requirements. SAS Studio is cross-platform and is the best choice for users who use both macOS and Windows. It works with most of the popular browsers available for Windows and macOS.

VERIFY YOUR JAVA ENVIRONMENT

SAS Enterprise Miner and SAS Forecast Studio use Java, which means that the correct version of Java must be installed on your computer. For instructions about how to verify your Java version, see [SAS® OnDemand for Academics: Enterprise Miner™ Configuration and Startup](#) or [SAS® OnDemand for Academics: Forecast Studio Configuration and Startup](#) as shown in Display 2:



The screenshot shows the SAS OnDemand for Academics website. The top navigation bar includes the SAS logo, the tagline "THE POWER TO KNOW.", and user options: "Welcome Randy", "Edit Profile", and "Log Out". A search bar is located on the right. Below the navigation bar, there are links for "Home", "Support", "Learn", and "Connect". The main content area is titled "LEARN / SAS OnDemand" and features a sidebar with a "LEARN" menu containing links for Books, Training, Certification, SAS Global Academic Program, SAS OnDemand, and SAS OnDemand for Academics. The main content area is titled "SAS® OnDemand for Academics" and contains the following text:

SAS® OnDemand for Academics: Enterprise Miner™ Configuration and Startup

- [Verifying and/or Installing a Java Runtime Environment](#)
- [Starting SAS® OnDemand for Academics: Enterprise Miner™](#)

::Verifying and/or Installing a Java Runtime Environment (Microsoft Windows)

Before you can use SAS® OnDemand for Academics: Enterprise Miner™, you must verify that you have an appropriate Java Runtime Environment (JRE) installed or install an appropriate JRE. This process needs to be completed only once.

Note: Consider printing these instructions before you begin as some of the steps might require you to move to other Web sites.

Step One: Verify whether a JRE (and Java Web Start) is installed

To verify whether you have a JRE installed, try the following:

1. Open a Command Prompt window. Select **Start --> Run**. Then, type `CMD` in the Run window.
2. On the Command Prompt window, type `start javaws`.
3. If the above command opens a Java Web Start window similar to the following, then you have a JRE (and Java Web Start) installed.

Display 2. Verify Your Java Environment in SAS Enterprise Miner

For information about which Java versions work best with SAS Enterprise Miner, see [SAS Note 61038](#). For information about which Java Runtime Environment works best with SAS Forecast Studio, see [SAS Note 57651](#). Also, it is a good idea to start both applications at the first opportunity so that you can adjust your computer's environment if needed.

CREATE YOUR ACCOUNT AND CONFIGURE YOUR MACHINE

Do not wait until the first assignment is given [to sign up for SAS OnDemand for Academics](#). It takes about 30 minutes for your credentials to work after you sign up. Allow sufficient time to obtain the account information and test your access.

Other than SAS Studio, the applications that are available with SAS OnDemand for Academics require some client-side setup and configuration. As shown in Display 3, the applications that require additional setup contain links to more information:

The screenshot displays the SAS OnDemand for Academics Control Center dashboard for Randy Mullis. The page is divided into several sections:

- Planned Events:** Two events are listed: "Scheduled Maintenance on Tues 21NOV" (Nov 21, 13:30-15:00 UTC) and "Scheduled Maintenance 26-27 December" (Dec 27, 05:00-05:00 UTC).
- Applications:** A list of applications with configuration links:
 - JMP[®] access to SAS[®] Servers (U.S. users only):** Statistical discovery software. Users must have a copy of JMP[®]; software. [\(Configuration Steps Required\)](#)
 - SAS[®] Enterprise Guide[®]:** Deliver the power of SAS from an easy-to-use, point-and-click interface. [\(Download Required\)](#)
 - SAS[®] Enterprise Miner[™]:** Reveal valuable insights with powerful data mining software. [\(Configuration Steps Required\)](#)
 - SAS[®] Forecast Studio:** Generate large numbers of high-quality forecasts automatically. [\(Configuration Steps Required\)](#)
 - SAS[®] Studio:** Write and run SAS code with a Web-based SAS development environment.
- Reference:** Links to Support Site, Step-by-Step Registration Guides, Usage Guide, Commonly Asked Questions, and Status Page.
- Quotas:** Home Directory (67.5MB/5120MB) at 1% and Course Directory (167.9MB/3072MB) at 5%.
- Notices:** "Student Registration and Log In Tips" (Importance: Medium) and "SAS Technical Support Closed 23-24NOV for Thanksgiving Holiday" (Importance: Low).

Display 3. Links to Configuration Steps Are Listed beside Each Application

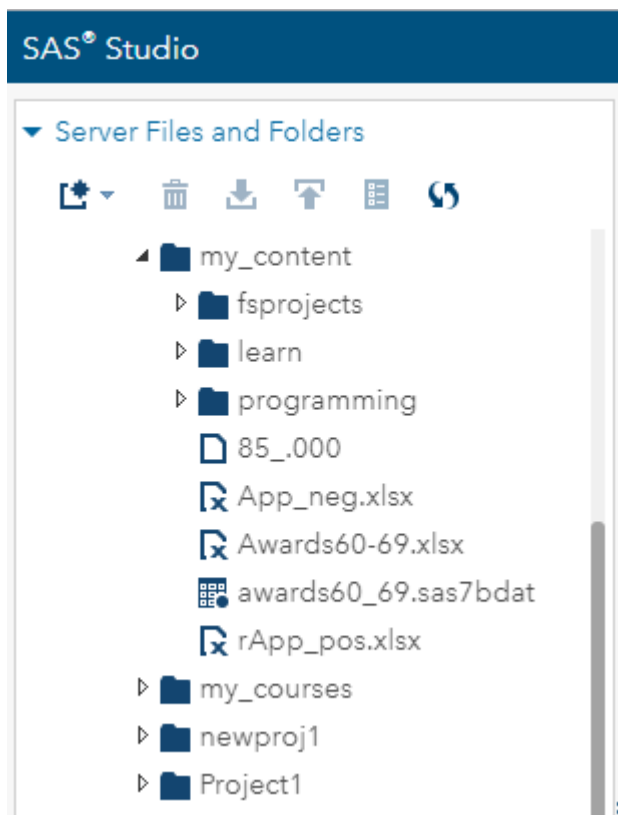
This setup is not particularly difficult, but it is good to do it early in case there are issues for which you need help. For a list of helpful resources, see the [References](#) and [Resources](#) sections at the end of the paper.

STAGGER LOGON TIMES

If you have a class that plans to use SAS OnDemand for Academics at the same time, it is best for the students to log on as they enter the classroom. Then, once class has begun, any students who have not already logged on can log on in groups of about five. After one group logs on, the next group can begin logging on. By logging on in groups of about five people, students can avoid wait times that are associated with new sessions being created.

CREATE A PLAN FOR MANAGING INSTRUCTIONAL DATA

As shown in Display 4 below, instructors can upload data to a folder in their my_content folders under the Files (Home) folder.



Display 4. File Structure of the my_content Directory

Students that are enrolled in an instructor's course can view this data in a subfolder under my_courses. However, students cannot alter this data because it is owned by the instructor. If the student tries to drag and drop a file or write out a file to their instructor's directory under my_courses, they receive an error. Instructors should advise students that data under my_courses is read-only. So, if students need to modify the data, they should write it to a location outside of this subfolder.

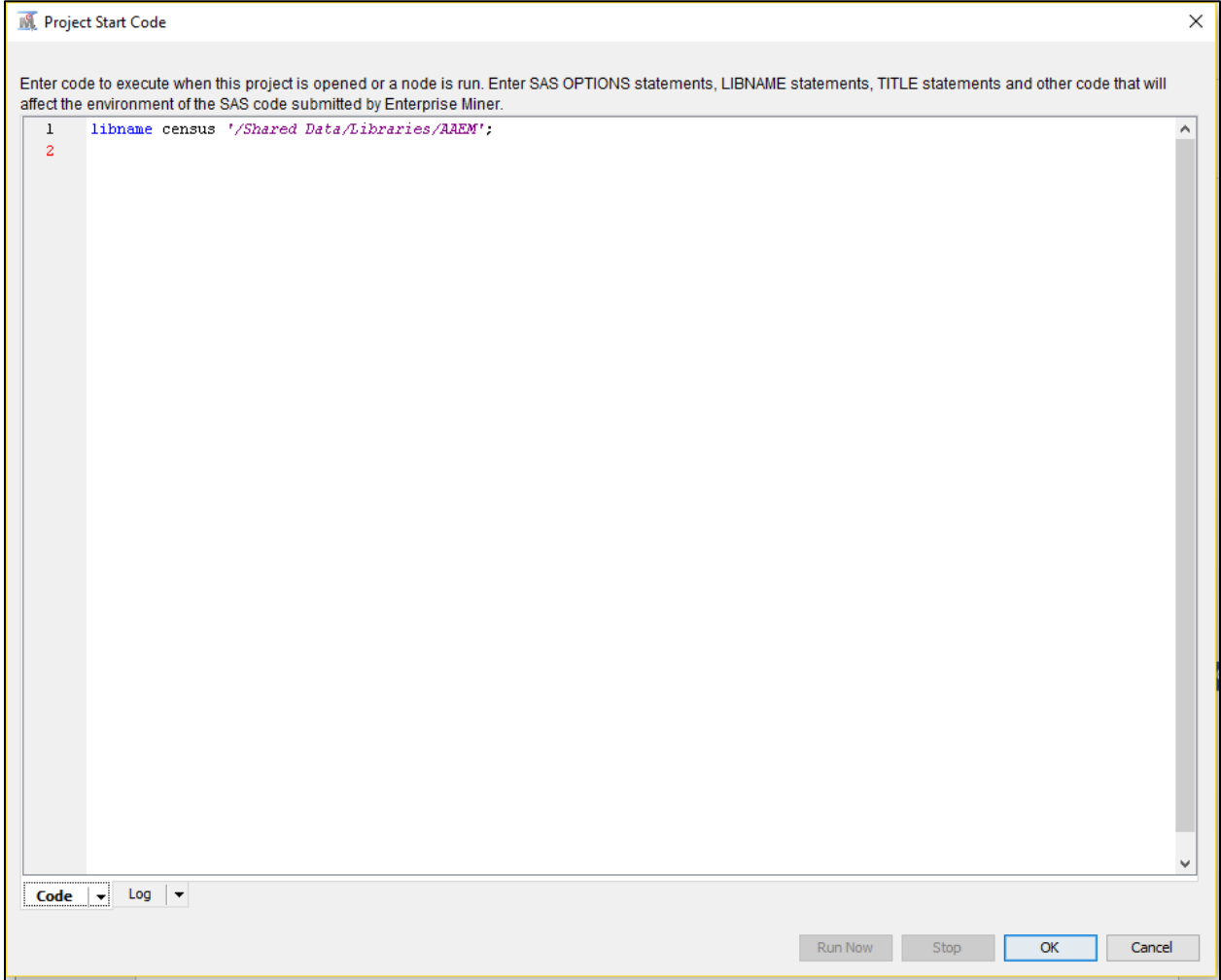
If a class uses SAS Enterprise Miner or SAS Forecast Studio, it might be helpful for students to view data using the **Server Files and Folders** tab in SAS Studio shown in Display 4 above. Viewing data this way can help convey the scope, location, and layout of the data sets and tables.

Instructors who are teaching with SAS Enterprise Guide can use SAS Studio for managing data or use the **Upload Data Files to Server** task in SAS Enterprise Guide. There is also a tool, the SAS Enterprise

Guide Explorer, that you can use to view data on the server in SAS Enterprise Guide. To access this tool, select **View ► SAS Folders**. The view shows SAS libraries and data. Because SAS Studio is available to all users and because it has panes to view both the physical file structure and SAS libraries, it might be easiest for you to manage data using SAS Studio. For example, if you want to move your data from one physical folder in the file system to another, you can easily do so using drag-and-drop in SAS Studio. This action is not as easy in SAS Enterprise Guide. If you want an overview of managing data using SAS Enterprise Guide, see the “Working with Data” section in “Chapter 6: SAS OnDemand for Academics: Enterprise Guide” in the [SAS® OnDemand for Academics: User's Guide](#).

UPLOAD YOUR OWN DATA FOR SAS ENTERPRISE MINER

The process for [using your own data](#) in SAS Enterprise Miner is simple after you are familiar with the requirements. You upload your data in SAS Studio, make a note of its physical location, and then specify a LIBNAME assignment in SAS Enterprise Miner as shown in Display 5.



Display 5. After You Upload Your Data in SAS Studio, You Can Reference It in the SAS Enterprise Miner Start Code

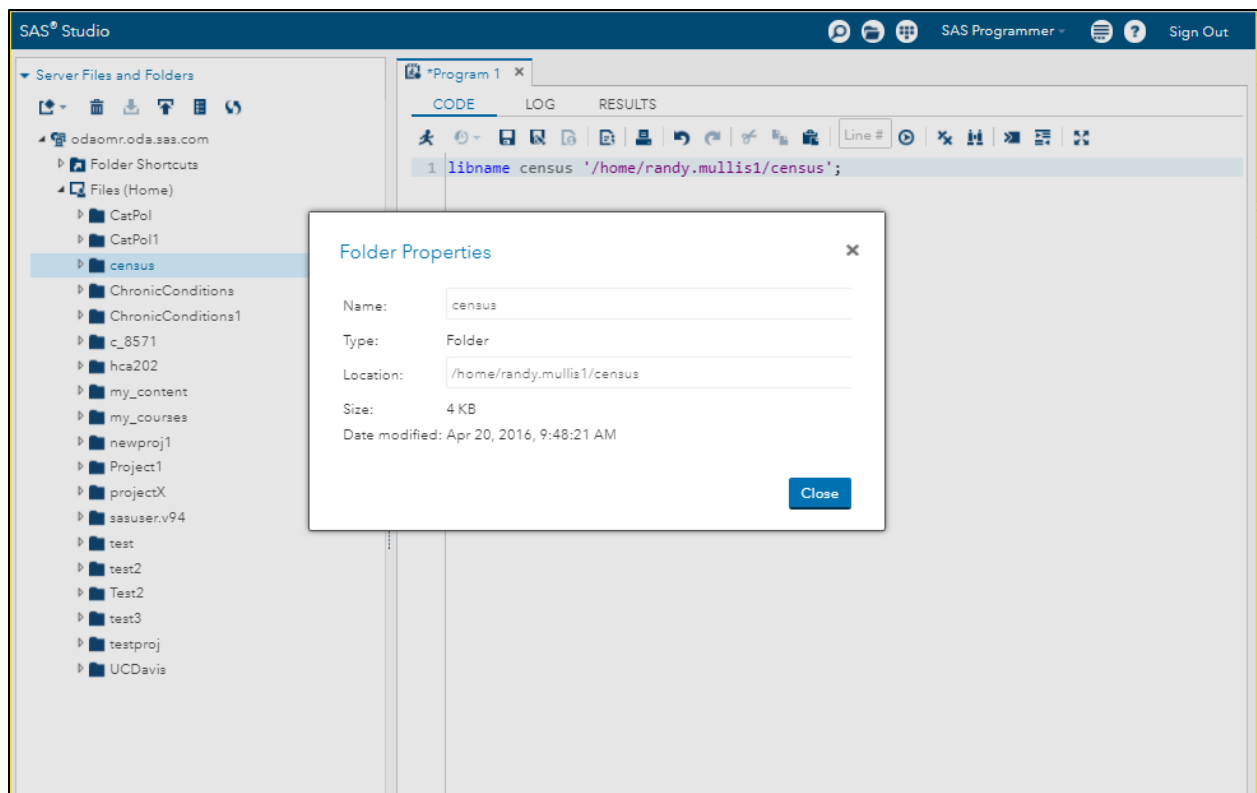
After you add and run the LIBNAME statement in your SAS Enterprise Miner project start code, you can access your uploaded data. The LIBNAME statement itself is the same as what you would add in SAS Studio in SAS OnDemand for Academics. For more information about LIBNAME statements, see the “Accessing Uploaded Data with a LIBNAME Statement” section in [SAS® OnDemand for Academics: Uploading and Accessing Local Data](#).

Note: You cannot upload your own data files in SAS Forecast Studio. As stated in the *SAS® OnDemand for Academics: User’s Guide*, when you use SAS Forecast Studio, you are able to use only the SAS data sets provided with SAS OnDemand for Academics.

TEACH ABOUT LIBRARIES AND LIBNAME STATEMENTS EARLY

SAS libraries serve as a map between the name that you use for a library in your SAS code and the physical name that exists on the computer. The concepts of libraries and LIBNAME statements can be confusing to students, so instructors should encourage mastery of these topics early in the course. For more information, see the “[Accessing a SAS Data Library](#)” section of *Step-by-Step Programming with Base SAS(R) Software*.

Most LIBNAME (short for “library name”) statements are one line in length. In addition to the keyword LIBNAME, you provide an abstract name (a libref) and the location of a directory on the disk where data should reside. Display 6 shows an example.



Display 6. The Location Field Shows the Physical Path That You Can Use for a LIBNAME Statement

There are both programmatic and graphical interfaces for creating libraries. These are discussed in [SAS® OnDemand for Academics: Uploading and Accessing Local Data](#) and in the [SAS® OnDemand for Academics User's Guide](#).

Because almost all SAS programs require a LIBNAME statement, understanding this concept is critical for students. It is imperative, therefore, to cover this concept early. Here are some SAS resources to help students better understand this concept:

- The [“Accessing Data in SAS Libraries”](#) video is a good overview for learning about SAS libraries in the context of SAS Studio.
- For a complete explanation of SAS libraries, see [“Understanding SAS Data Libraries”](#) in [Step-by-Step Programming with Base SAS® Software](#).
- The two e-Learning courses, “SAS Programming 1” and “Statistics 1,” listed in the [Resources](#) section are helpful for additional hands-on study of SAS libraries.

KEEP QUOTA ISSUES TO A MINIMUM

Quotas and data-storage use are displayed on the right side of the Control Center when users log on as shown in Display 7 below.

The screenshot shows the SAS OnDemand for Academics Control Center interface. The top navigation bar includes the SAS logo and the text 'SAS® OnDemand for Academics Control Center - United States'. Below the navigation bar, the user name 'Randy Mullis' is displayed. The main content area is divided into several sections:

- Planned Events:** Two entries for scheduled maintenance on Tues 21NOV and 26-27 December.
- Applications:** A list of applications including JMP® access to SAS® Servers, SAS® Enterprise Guide®, SAS® Enterprise Miner™, SAS® Forecast Studio, and SAS® Studio.
- Reference:** A list of links including Support Site, Step-by-Step Registration Guides, Usage Guide, Commonly Asked Questions, and Status Page.
- Quotas (learn more):** A section showing data storage usage for Home Directory (67.5MB/5120MB) at 1% and Course Directory (167.9MB/3072MB) at 5%. This section is highlighted with a red box.
- Notices:** Two notices, including 'Student Registration and Log In Tips' and 'SAS Technical Support Closed 23-24NOV for Thanksgiving Holiday'.

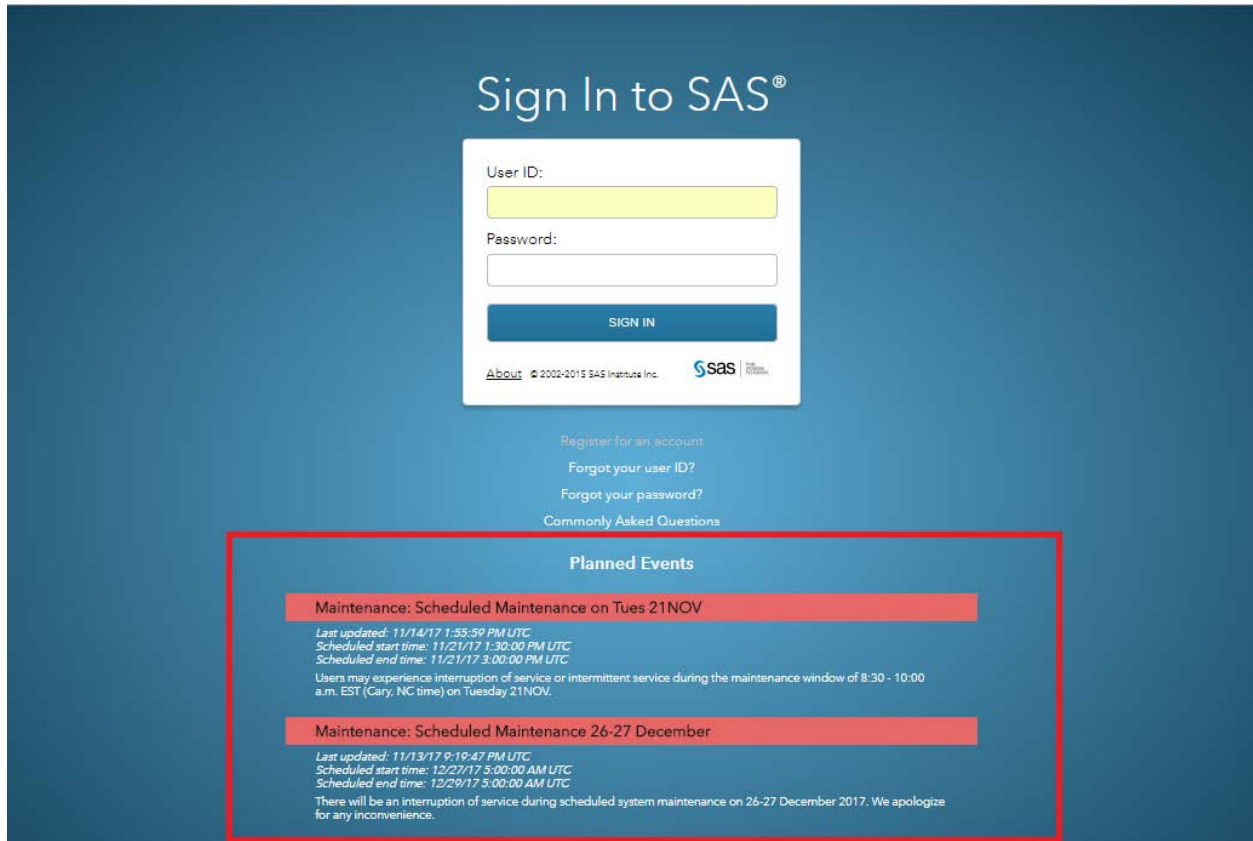
Display 7. Data Storage Usage Is Listed on the Right Side of the Control Center Page

Know the quotas for students and teachers, be wise in use of space, and know how to handle the situation when the quota is exceeded. For more information about data-storage limits and working with quotas, see the [“Data Questions”](#) section in [SAS® OnDemand for Academics](#).

To avoid disk-space problems, students should delete files that they are not using. The quotas are usually adequate for students who are learning programming and applications.

BE AWARE OF SYSTEM MAINTENANCE AND STATUS NOTICES

The [Site Status page](#) shown in Display 8 includes the current system status, notice of planned maintenance, and information about any ongoing issues. This page can keep you informed and help you avoid frustration. It is a good idea to schedule your SAS OnDemand for Academics classroom sessions so that they do not coincide with planned maintenance activities.



Display 8. System Maintenance and Outage Information Is Posted on the Control Center Page

CONCLUSION

Thousands of users have learned to program and analyze data in SAS by using SAS OnDemand for Academics. Over the years, SAS Technical Support consultants have seen what works and what might cause issues. The tips in this paper address the most common issues that our users have experienced. By being aware of these issues and taking the actions suggested in this paper, you will be able to maximize your investment in learning SAS.

REFERENCES

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RESOURCES

Free SAS How-To Videos: sas.com/en_us/learn/academic-programs/resources/free-how-to-videos.html

- These videos cover many of the basic skills that you need to begin your SAS education.

SAS Analytics U Community: communities.sas.com/t5/SAS-Analytics-U/bd-p/sas_analytics_u

- The SAS Analytics U Community is full of skilled professionals who will answer questions anytime, night or day.

SAS e-Learning courses: support.sas.com/edu/elearning.html?ctry=us

- There are two free SAS e-Learning courses, "SAS Programming 1" and "Statistics 1." These courses cover the basics of SAS. In addition, there are many other courses on more advanced topics.

SAS Books: sas.com/en_us/learn/academic-programs/resources/academic-books.html

- There is a book for almost any SAS related topic.

SAS Studio tutorials: support.sas.com/training/tutorial/studio/

- These tutorials are specific to SAS Studio, which is part of SAS OnDemand for Academics. Note that SAS Studio exists in different contexts (on the desktop, in SAS University Edition, in SAS OnDemand for Academics, and so on), so some of the finer points might not exactly match what you see.

SAS Certification: support.sas.com/certify/

- You can prove your SAS knowledge by gaining a SAS certification. See all the possible certifications on this site.

SAS Customer Support site: support.sas.com

- SAS provides a wide array of resources for learning and using SAS.

CONTACT INFORMATION

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