



SAS[®] Studio: An Introduction

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Ask the Expert

SAS Ask the Expert: SAS Studio: An Introduction



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SAS® Studio

SAS® Studio is a browser-based, broadly available, consistent SAS programming interface:

- Available via a browser on any device that connects to your SAS server
- Easier administration - update once and gain latest updates/versions across the tiers of your configuration

SAS® Studio When is SAS Studio used? Why and by whom?

When – you need to crunch data, turn raw data into actionable intelligence, develop reports and analytics

Why – enable knowledge workers to work anywhere with a broadly available, consistent SAS programmer interface

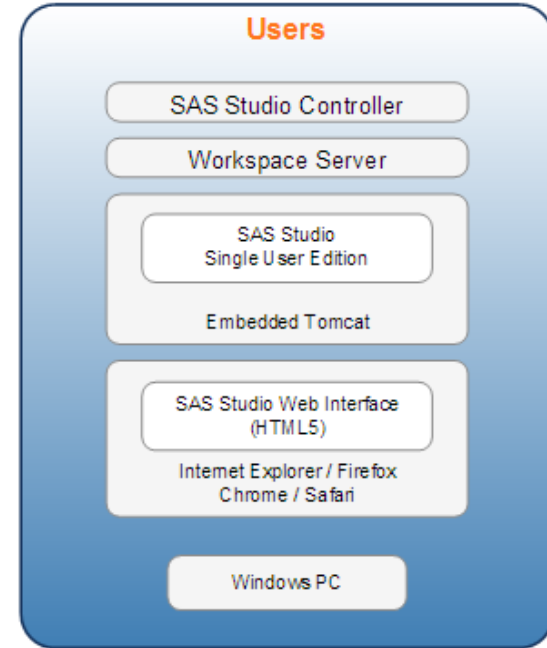
Who – programmers, analysts, statisticians, new and existing SAS users

- All SAS customers as of 9.4M2 – if you have Base SAS, you have SAS Studio
- You don't necessarily need a mid-tier or SAS Integration Technologies
- SAS® Studio is part of the *University Edition* of SAS®

SAS® Studio

Single-user / PC configuration

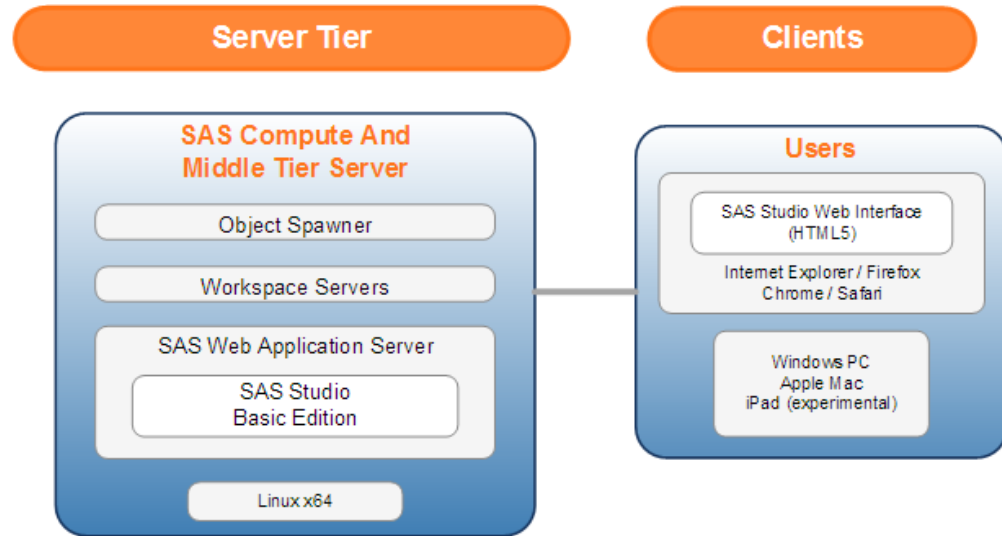
- Base SAS on a Windows PC or SAS University Edition
- Invoke SAS Studio via web browser on the same machine where Base SAS is installed
- Local permissions and policies determine which data & files you can access



SAS® Studio

Multi-user / Server configuration

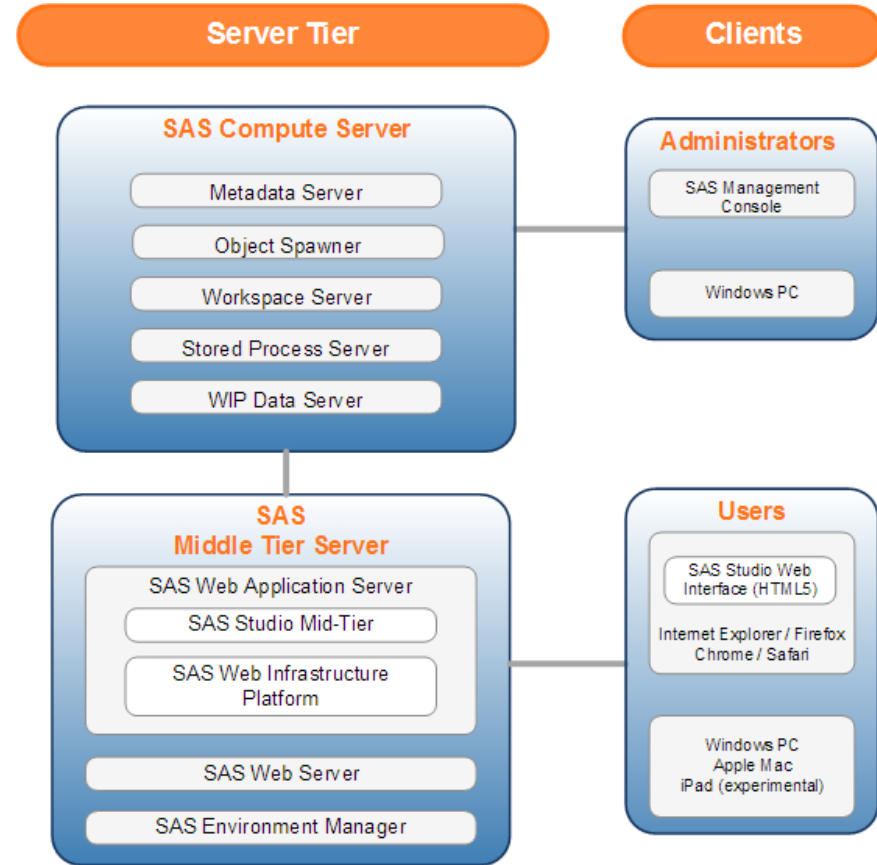
- Base SAS on a server
- Invoke SAS Studio from web browser on any machine connected to SAS server
- You must have credentials to log into the SAS server machine
- Server permissions determine which data & files you can access



SAS® Studio

Multi-user / enterprise configuration

- Base SAS on a server
- Invoke SAS Studio from web browser on any machine connected to SAS server
- You must have credentials to log into the SAS server machine
- Server permissions and SAS Metadata Server determine which data & files you can access



SAS® Studio

How does SAS Studio operate?

All operations are conducted in terms of the *workspace server*

- Web browser accesses your programs, data, libraries
- When you run a program or task, SAS Studio connects to SAS to process the [generated] SAS code
- After the code is processed, the log, [generated] code, and results are returned to SAS Studio



SAS Studio is an HTML5 application that requires no browser plug-ins

- Microsoft Internet Explorer 9, 10, 11
- Mozilla Firefox 21+
- Google Chrome 27+
- Apple Safari 6.0+ (on Apple OS X)

http://www.sas.com/en_us/software/foundation/studio.html#m=system-requirements



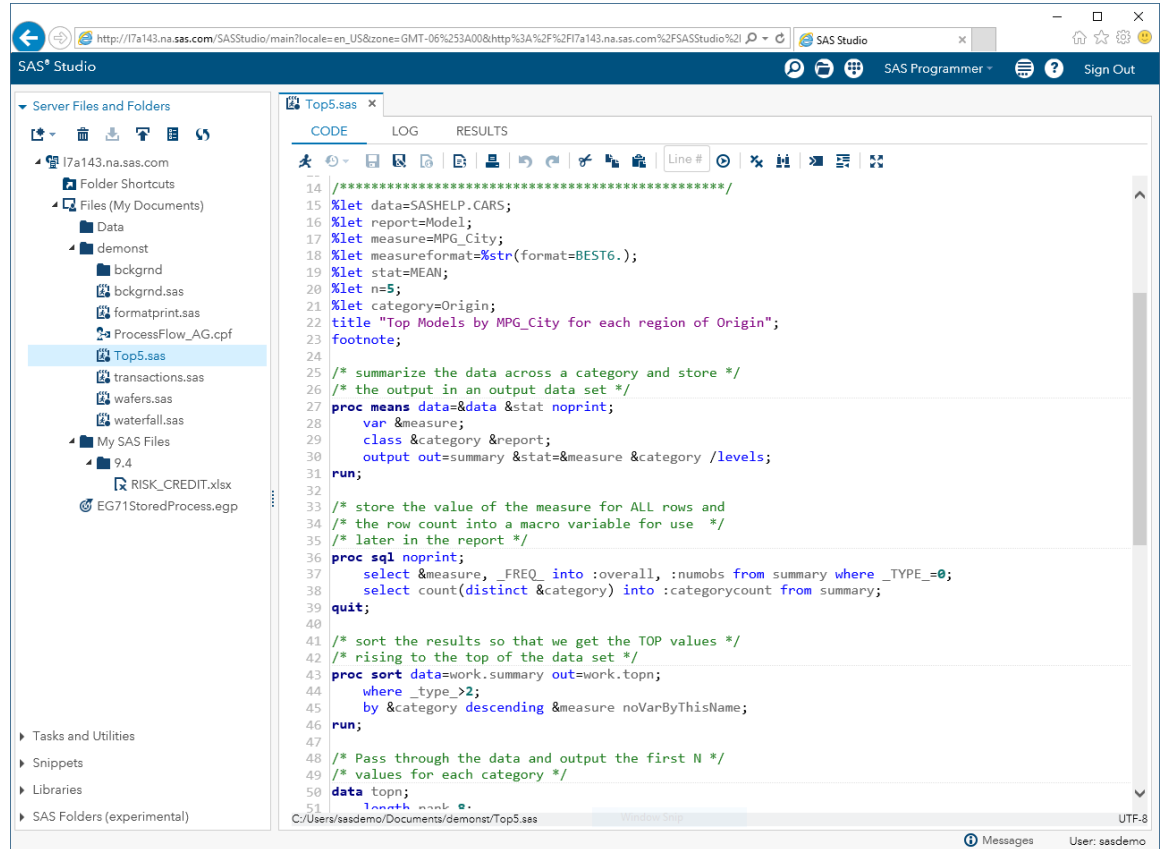
Programming Interface

SAS® Studio - Development Environment

SAS® Studio

Programming interface

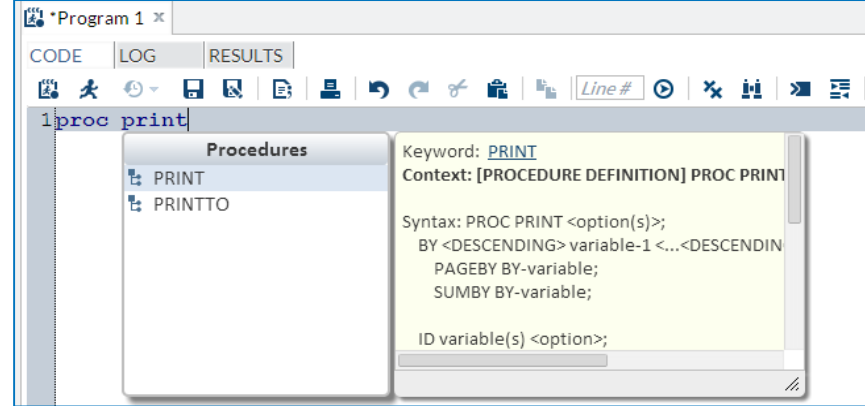
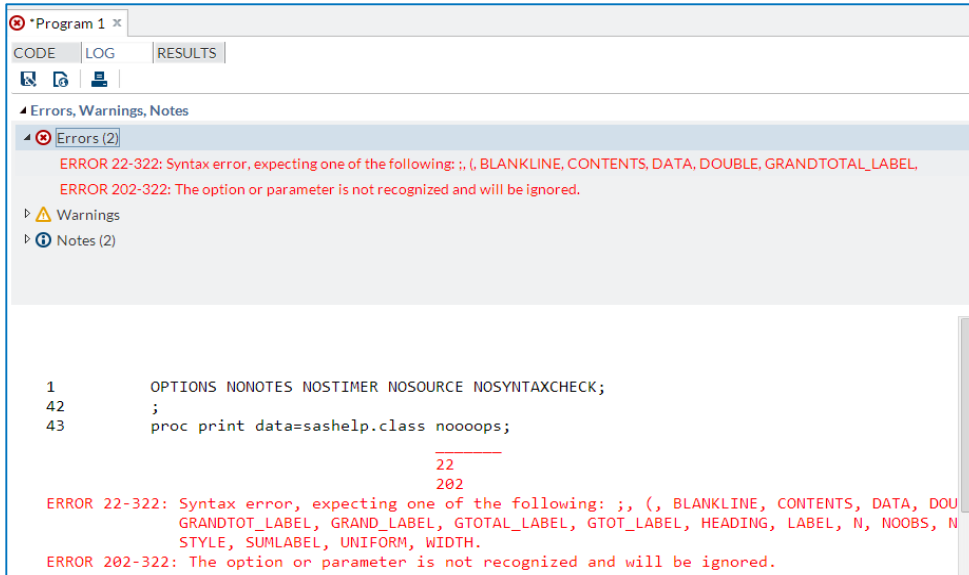
- Color-coded editor
- Submission history
- Code Formatting
- Search
- Tabs for easy navigation



SAS® Studio

Programming interface

- Auto-complete
- Pop-up syntax help

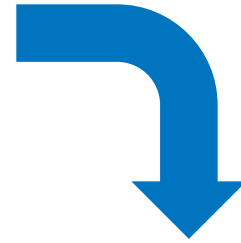


- Color-coded log navigator
- Categorized alerts:
 - Errors
 - Warnings
 - Notes
- Easily save or share logs

SAS® Studio

Table viewer

- Sort or filter a table
- View or copy the generated SQL



SAS® Studio

Search

Folders

Tasks

Snippets

Libraries

My Libraries

SASHELP

- ▶ AACOMP
- ▶ AARFM
- ▶ ADSMSG
- ▶ AFMSG
- ▶ ASSCMGR
- ▶ BASEBALL
- ▶ BMT
- ▶ CARS
- ▶ CLASS
- ▶ CLASSFIT
- ▶ CLNMSG

SASHELP.CLASS x

View: Column names

Filter: Age=11 OR Age=12 OR Age=13

Columns

- Select all
- Name
- Sex
- Age
- Height
- Weight

Total rows: 19 Total columns: 5 Filtered rows: 10 Rows 1-10

	Name	Sex	Age	Height
1	Thomas	M	11	57.5
2	Robert	M	12	64.8
3	Louise	F	12	56.3
4	Joyce	F	11	51.3
5	John	M	12	59
6	Jeffrey	M	13	62.5
7	Jane	F	12	59.8
8	James	M	12	57.3
9	Barbara	F	13	65.3
10	Alice	F	13	56.5

Property Value

Label	Name
Name	Name
Length	8
Type	Char
Format	
Informat	

```
PROC SQL ;
    CREATE TABLE WORK.query AS SELECT "Name"n, "Sex"n, "Age"n, "Height"n FROM
        SASHELP.CLASS WHERE Age=11 OR Age=12 OR Age=13 ORDER BY Name DESCENDING;
RUN;
QUIT;
```



Tasks & Code Snippets

Ease of use

Tasks

Overview

Tasks are point-and-click user interfaces which guide users through an analytical or other processes. Behind the scenes, SAS code is generated.

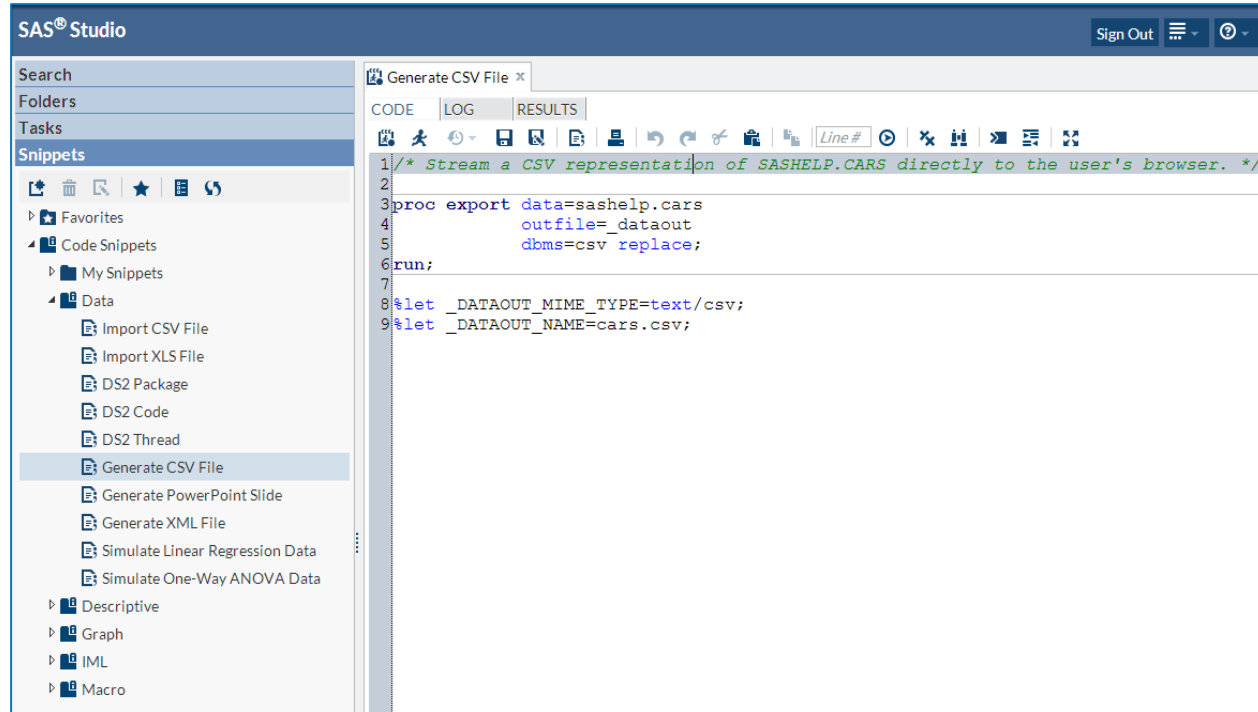
The screenshot shows the SAS Studio interface for a 'Distribution Analysis' task. The left sidebar contains a 'Tasks' list with 'Distribution Analysis' selected. The main window has tabs for 'DATA', 'OPTIONS', and 'INFORMATION'. Under 'EXPLORING DATA', options include 'Histogram', 'Add normal curve', 'Add kernel density estimate', and 'Add inset statistics'. Under 'CHECKING FOR NORMALITY', options include 'Goodness-of-fit tests', 'Histogram with normal curve' (checked), 'Normal probability plot' (checked), and 'Normal quantile-quantile plot'. The right pane shows a histogram titled 'Distribution of Height' with a normal curve overlaid. The y-axis is 'Percent' (0-40) and the x-axis is 'Height' (52.5-67.5).

Height	Percent
52.5	5
57.5	32
62.5	32
67.5	26

Code Snippets

Overview

- Frequently used *code snippets* are provided in SAS® Studio
- Quickly insert SAS® Code
- Once inserted, you can modify the snippet code to meet your needs
- Easily create your own snippets
- Specify My snippets for easy access





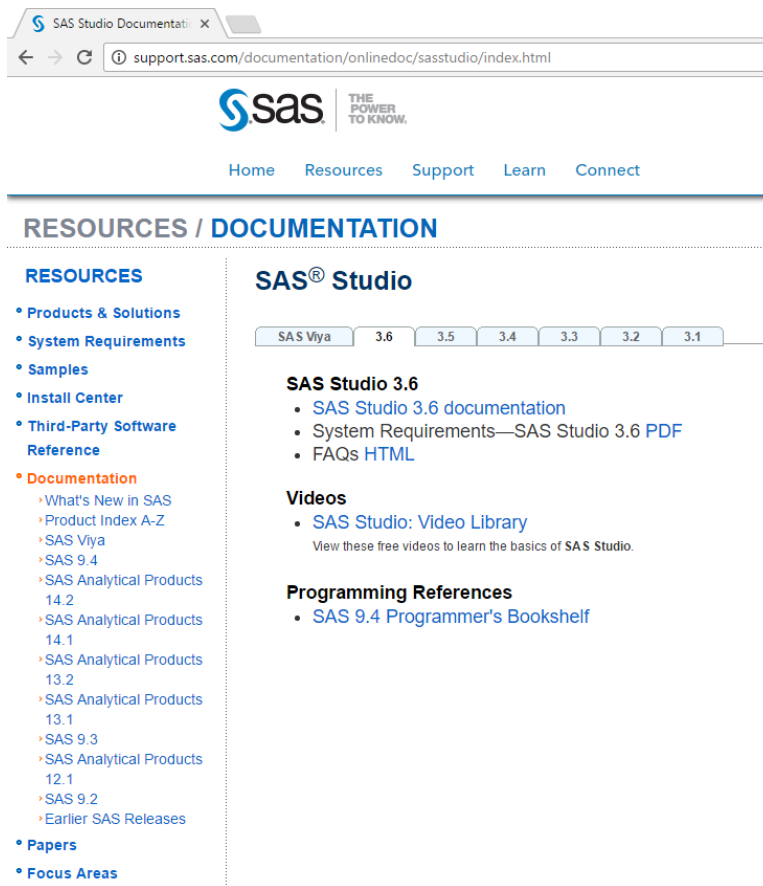
So what can I do?

demonstration

SAS Studio

Conclusion

- SAS® Studio offers another option for programmers
 - Web-based – can be added to PC SAS®
 - Server - update once, all connecting get latest version of SAS® Studio PLUS backend SAS®
 - HTML5 so nothing is added to browser
 - More coming including LOTS of Tasks and Snippets
 - *Perspectives* and *Notebook* to suit type of programmer
 - More IDE capabilities



The screenshot shows a web browser window with the URL `support.sas.com/documentation/onlinedoc/sasstudio/index.html`. The page features the SAS logo and tagline "THE POWER TO KNOW." at the top, followed by navigation links for Home, Resources, Support, Learn, and Connect. The main heading is "RESOURCES / DOCUMENTATION". On the left, a "RESOURCES" sidebar lists categories such as Products & Solutions, System Requirements, Samples, Install Center, Third-Party Software Reference, Documentation (with sub-links for various SAS versions and products), Papers, and Focus Areas. The "Documentation" section is highlighted in orange. The main content area is titled "SAS® Studio" and includes a version selector with tabs for SAS Viya, 3.6, 3.5, 3.4, 3.3, 3.2, and 3.1. Under "SAS Studio 3.6", there are links for documentation, system requirements PDF, and FAQs HTML. The "Videos" section links to the SAS Studio Video Library, and the "Programming References" section links to the SAS 9.4 Programmer's Bookshelf.

Main SAS® Studio
Documentation page



The screenshot shows a web browser window with the URL `support.sas.com/training/tutorial/studio/index.html`. The page header is blue with the text "SAS Studio: Video Library" and the SAS logo with the tagline "THE POWER TO KNOW.". The main content area features a video player for "Getting Started with SAS Studio". The video player has a play button, a progress bar at 00:00, and a video thumbnail showing a blue graphic with the text "Code run;" and "Formatted Results". Below the video player, there is a "Now Playing" section with the title "Getting Started with SAS Studio" and a "Rate this video." link. At the bottom, there is a section titled "View the Getting Started videos in order." followed by a list of four videos under the heading "Getting Started":

- 1 Getting Started with SAS Studio (8:20)
- 2 Writing a Basic SAS Program (6:20)
- 3 Accessing Data in SAS Libraries (5:29)
- 4 Creating a SAS Table from an Excel-Generated CSV File (6:19)

SAS® Studio

Recommended Resources

Videos

<http://support.sas.com/training/tutorial/#s1=4>

<http://www.sas.com/reg/web/corp/2305758>

Benefits, Features, Fact Sheet

http://www.sas.com/en_us/software/foundation/studio.html

SAS Global Forum Paper

<http://support.sas.com/resources/papers/proceedings14/SAS302-2014.pdf>

Overview, Documentation, Training, Samples and Tips

<http://support.sas.com/software/products/sasstudio/index.html#s1=2>

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