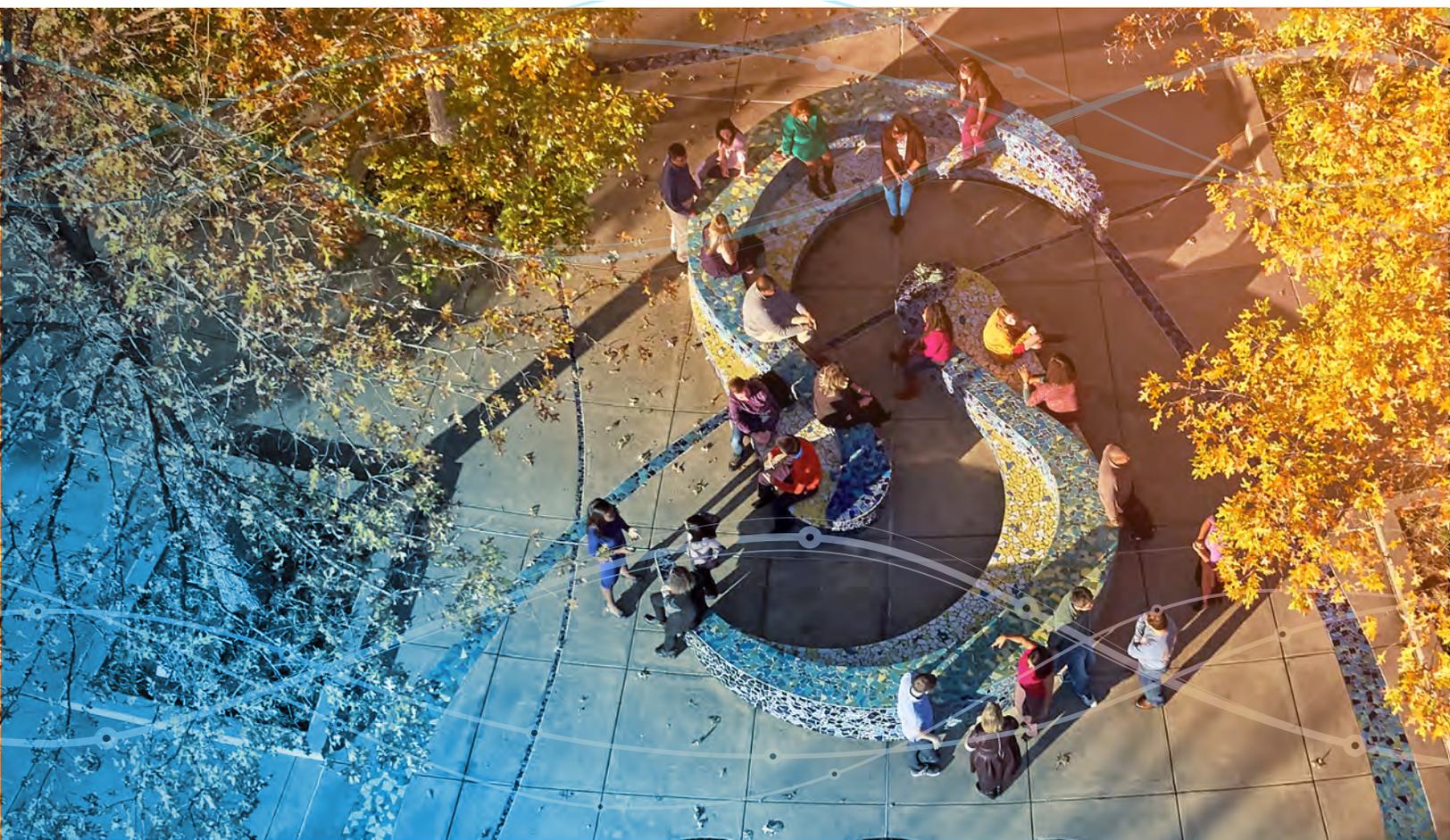# The Quality Imperative:
SAS Institute's Commitment to Quality

A corporate statement of SAS' commitment to product quality, service quality, and customer satisfaction

Release

Release

Sign-Off

Product sign-off occurs when the following conditions have been satisfied:

- Planned new functionality has been implemented and tested
- Requested fixes have been implemented and tested
- Quality metrics meet release criteria
- Due diligence completed

The R&D director, development manager, test manager, documentation writer, and Technical Support consultant conduct reviews according to due diligence guidelines. The due diligence guidelines list quality attributes and procedures that all software must meet before the software can be released. Once everyone agrees, the product team completes sign-off and the Release Engineering Division provides external access to the software.

After sign-off is complete, the state of the software and the data that defines the software is captured so that no unauthorized changes can be made after the software enters the system release process. The software is made available via a promotion process to secure repositories. The promotion process is validated as correct using a checksum process.

Internal systems track products that are planned for production release. The tracking systems are integrated with the product release sign-off procedure. This promotes a high and consistent level of due diligence that helps SAS ensure that only high-quality products are released to customers.

Production Media

Production software is available by software download for most releases. If physical media is being produced, it is cut at SAS after internal quality checks. No physical media is available for SAS Viya or other cloud-based solutions.

Software Production for Target Audiences

SAS meets the challenges of delivering high-quality software by following a clearly defined rollout process for our new releases. The phases of the rollout process are linked to internal milestones and are defined by the target audience for each software development release: Development Partners, Early Adopters, and General Availability.

- Development Partners phase—A preproduction software development phase in which software is provided to customers who have contractually agreed to use the software, and to provide feedback to SAS about its features and functionality. The goal of this phase is to validate that the software is being developed according to the requirements that have been identified by marketing specialists. This phase is optional, but is most frequently applied to newly developed offerings, and for major enhancements to an existing offering.

- Early Adopters phase—A preproduction software development phase that occurs after much of the development has been completed. In this phase, a copy of a software offering is provided to a customer who has contractually agreed to install and use the software, and to provide feedback to SAS. Problems that are reported from customers might be addressed during later phases of this same release, and features or enhancements are collected for consideration in a future release.
- General Availability phase—A software development phase in which the final production release of an offering is made available to all customers.

Virus Protection

Compiles and links on Windows nodes are run with minimal network access. The nodes have Cisco AMP (Advanced Malware Protection) running on them to ensure that the nodes remain virus free. After the files are compiled and linked, the rest of the processing through delivery to the production code repository is done on FreeBSD build bubble nodes, where there is little chance of Windows virus infection. When replicating software onto physical media, we use only blank media (write-once media). The SAS machines that do the replicating are based on Microsoft Windows, with real-time antivirus checking. All SAS product components for all platforms that are ready for customer delivery are stored on file servers that are based on UNIX and that do not allow writing from Windows OS hosts. After a product becomes production, its components are protected so that only a limited number of UNIX hosts can write to them as well.

Digital Signatures

Digital signatures ensure the integrity of SAS software. All SAS components that interact with the operating system (or that otherwise require digital signatures to work properly) are signed using a trusted SAS certificate. Windows executables, installation files, Outlook plug-ins and extensions, various Java files, and other pieces are signed as required.

What's New

A list of changes and enhancements for each release is available by selecting What's New in SAS at **http://support.sas.com/documentation/whatsnew/index.html** or accessing the Help that is provided with the software.

Release Information
The version of this paper is January 2022.

Unless otherwise indicated, this document relates only to SAS 9.4, SAS Viya, and the products that are available with SAS 9.4 and SAS Viya. It also relates to services from the date of this paper forward. Quality processes are continually evolving. Therefore, SAS reserves the right to modify the processes described in this document at any time. If you are using SAS 9.4 and SAS Viya and have questions about processes in those releases, send email to **qualitypaper@sas.com.**

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