# Upgrading to the Latest Version of SAS® 9.4 M8
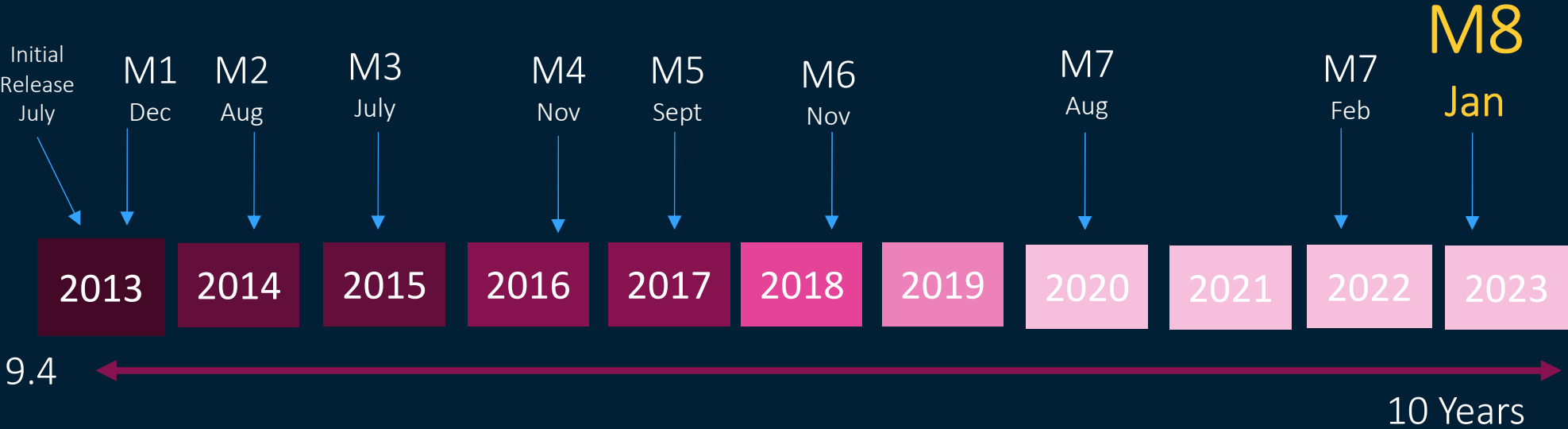
Margaret Crevar

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# Today's Agenda

1. What is new in SAS 9.4 M8?
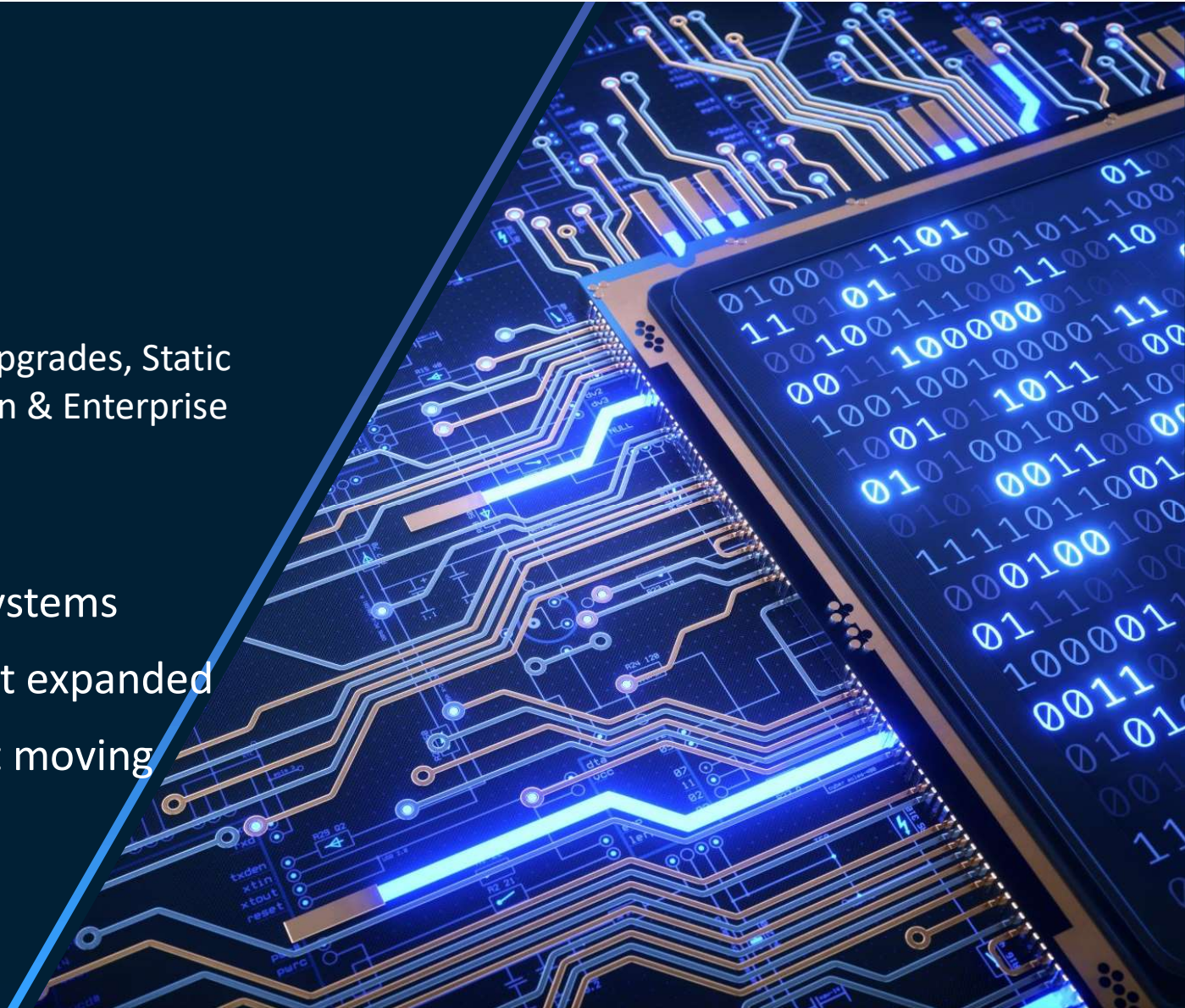
2. Plan before you start your update

3. Q&A

# 9.4 Release Timeline

# What is new in SAS 9.4 M8?

- Security Enhancements

  - Third Party Component Upgrades, Static and Dynamic Security Scan & Enterprise Security Integration

- Modernization

- Supported Operating Systems

- Retired SAS products list expanded

- Some SAS Solutions not moving

- Hot Fixes

# Security Enhancements:
# Third Party Changes and Upgrades

- Spring upgraded from version 3 to version 5
- Log4j Version 1 upgraded to Version 2
- CAS (Aprero Central Authentication Service) used by SAS Logon Manager upgraded from CAS 3.x to CAS 6.x
- Hundreds of third-party jars upgraded
- SAS will use the Operating System SSL libraries available in the customer's environment.
    - On z/OS, the IBM SSL libraries will be used.
    - The SAS Web Server and Postgres will continue to be compiled with OpenSSL
- OpenSSL 1.0.2 support upgraded to OpenSSL 3
- SAS added support for TLS 1.3

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# Security Enhancements:
# Third Party Changes and Upgrades

- The use of Struts in SAS 9.4M8 is eliminated (except for a few Solutions)
- Enhancements to SAS Support for Microsoft Windows Defender Credential Guard and Constrained Delegation are delivered
- Support added for IBM z/OS Pervasive Encryption

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# Security Enhancements:
## Enterprise Security Integration

- Windows Integrated Authentication
- IBM WebSeal
- Broadcom SiteMinder (used to be CA SiteMinder)
- Powerful Fallback Authentication
- FIPS
- SAML Authentication

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# Security Enhancements:
## Static and Dynamic Security Scans

- BlackDuck scan for third party Java projects
- Checkmarx scan for all Java, Groovy and JSP source code
- Klocwork scan for all C source code
- OWASP ZAP scan for all SAS Web Applications and HTTP(S) endpoints

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# Modernization

- SAS Private JRE is now based on Java 11  (MVS is Java 8)
- SAS Cache Locator is now based on OpenSource Geode instead of Gemfire
  - Geode version is at the most recent release stream
- SAS Web Application Server is now based on OpenSource Tomcat instead of VMware tcServer
  - Tomcat version is Tomcat 9 instead of Tomcat 8
- SAS Web Server is upgraded with OpenSSL 3 and FIPs support out-of-box
- SAS Messaging Engine is upgraded to use 5.17.x
- SAS Transaction Manager upgraded to Atomikos Extreme Transactions instead of OpenSource Atomikos (Transaction Essentials)
- SAS Content Server upgraded to use the newest version of JackRabbit
- SAS Middle Tier Platform (WIP) Services modernized to support the above changes

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# SAS 9.4M8 Updated Operating Systems

**Linux**
- Oracle 7.9 and 8.3
- Red Hat Enterprise Linux 7.9 and 8.4
- SUSE/SLES 12.5 and 15

**UNIX**
- AIX 7.2
- Solaris 11.4 for x64/x86 and SPARC 64 bit

**Windows (32 bit (when available) and 64 bit)**
- Windows Server 2012, 2012R2, 2016, 2019, 2022, Windows 10 and Windows 11 (SAS Note 69854)

**z/OS 31 bit and z/OS 64 bit for the Metadata Server**
- z/OS 2.5

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# SAS 9.4 M8 Deprecated Operating Systems

Support for the following operating system versions are dropped with SAS 9.4 M8

- Windows 7 and Windows Server 2008 and 2008R2
- Red Hat Enterprise Linux 6
- Solaris 10
- AIX 7.1 TL5
- HP UX Itanium
- SUSE 11

# SAS 9.4 M8 Products

For a complete list, go to
  [SAS Help Center: What's New in SAS 9.4 Guide to Software Updates](#)

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# SAS 9.4 M8 Deprecated Products

Support for the following products are dropped with SAS 9.4 M8

- SAS AppDev Studio
- SAS BI Portal
- SAS Information Delivery Portal  - SAS Help Center: Transitioning from a SAS Enterprise BI Server Deployment That Uses SAS Information Delivery Portal
- SAS/ACCESS Interface to Oracle on the z/OS platform

For a complete list, go to
    SAS Help Center: What's New in SAS 9.4 Guide to Software Updates

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# SAS Solutions shipping with SAS 9.4 M8

Initially Available
- Risk and Quantitative Solutions (many are releasing)

Shortly after Initial Release:
- Fraud and Security Solutions (Anti Money Laundering, Customer Due Diligence, Fraud Management, Currency Transaction Reporting)
- SAS Compliance Solutions
- Internet of Things
- Retail (many are releasing)
- Risk (SAS Asset and Liability Management)

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# Upgrading is a Process

**Design/Planning**
30%

**Prepare**
20%

**Execution**
15%

**Validation and Rollout**
35%

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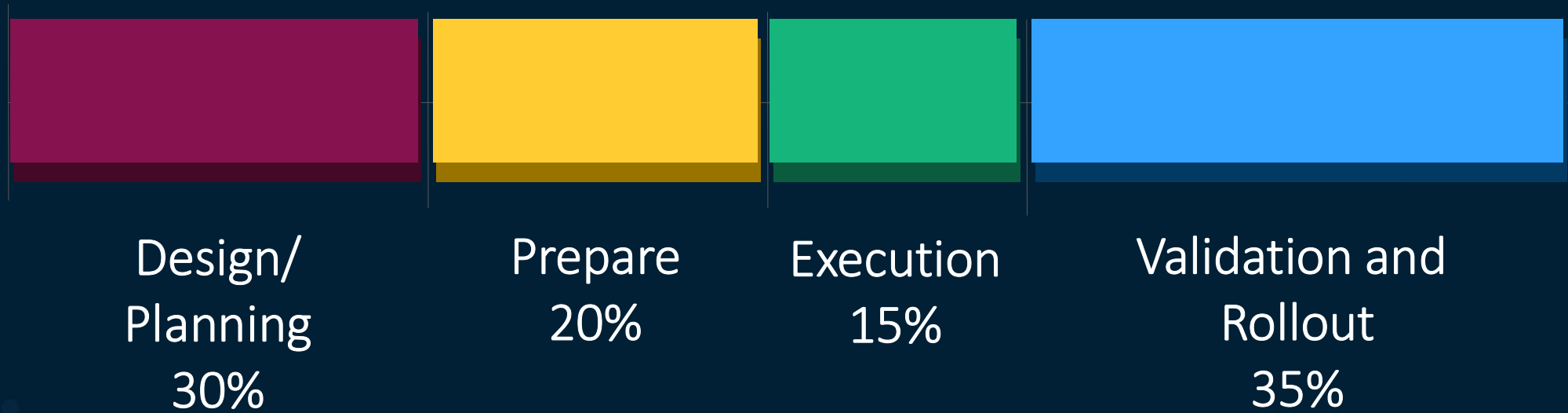
# SAS Migration Utility (SMU) vs. Upgrade In Place (UIP)

**Pros**

**Cons**

### SAS Migration Utility

- SAS processing is not disrupted
- New installation of SAS is created
- Allows for hardware and operating system version upgrades

### Upgrade In Place

- No additional hardware cost
- Lower implementation cost
- Shorter time to complete upgrade
- Preserve customizations

### SAS Migration Utility

- Additional hardware costs
- Higher implementation cost
- Lengthier time to complete migration

### Upgrade In Place

- SAS processing is disrupted until the upgrade is complete (or a backup restored
- Not available if running on a deprecated operating system

Learn more about the SAS® 9.4 Intelligence Platform: Migration Guide, Second Edition and Upgrade In Place in the SAS Guide to Software Updates document

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# Upgrade Process Flow
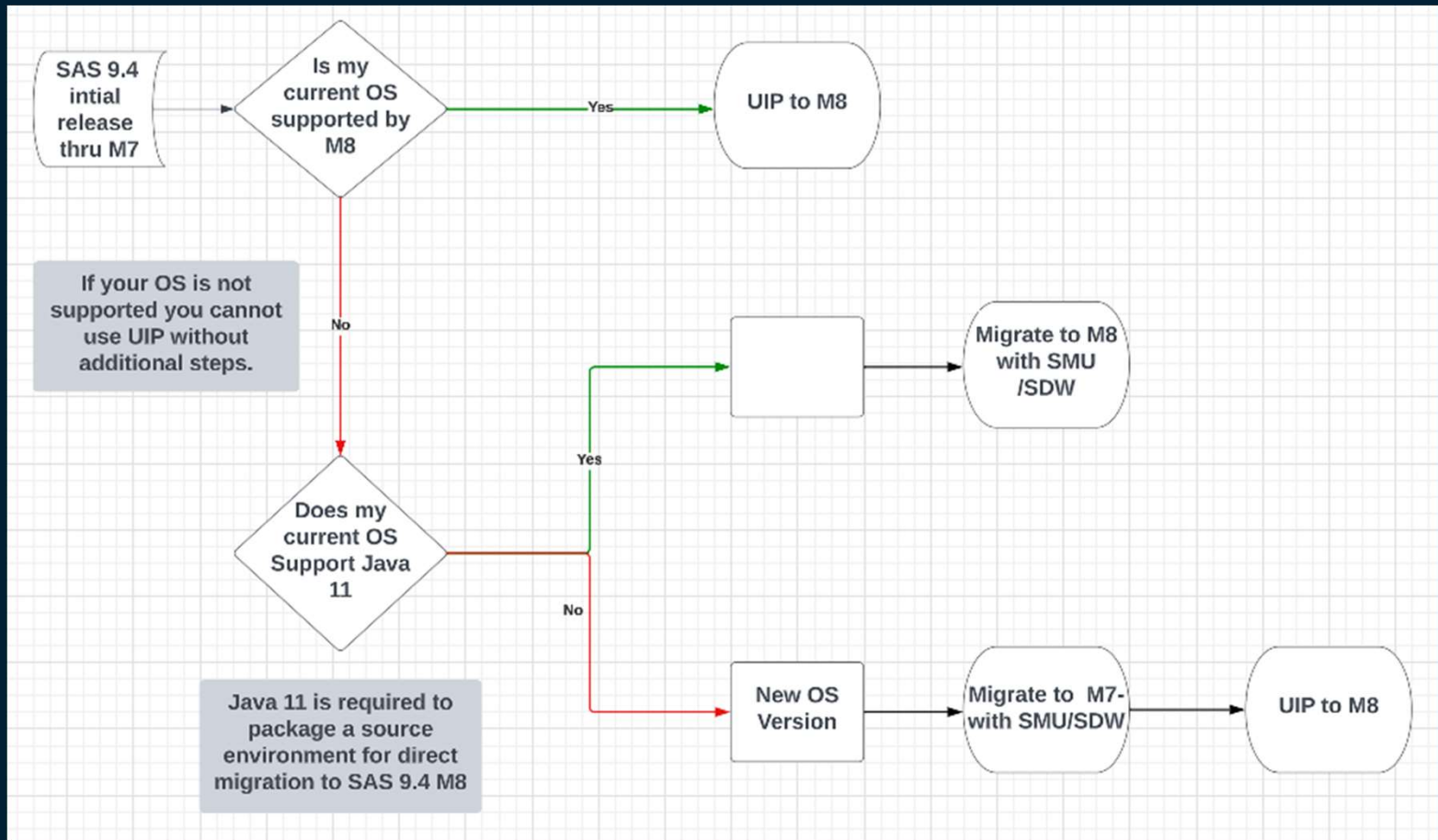
The SAS® 9 Content Assessment helps organizations understand their SAS® 9 systems.
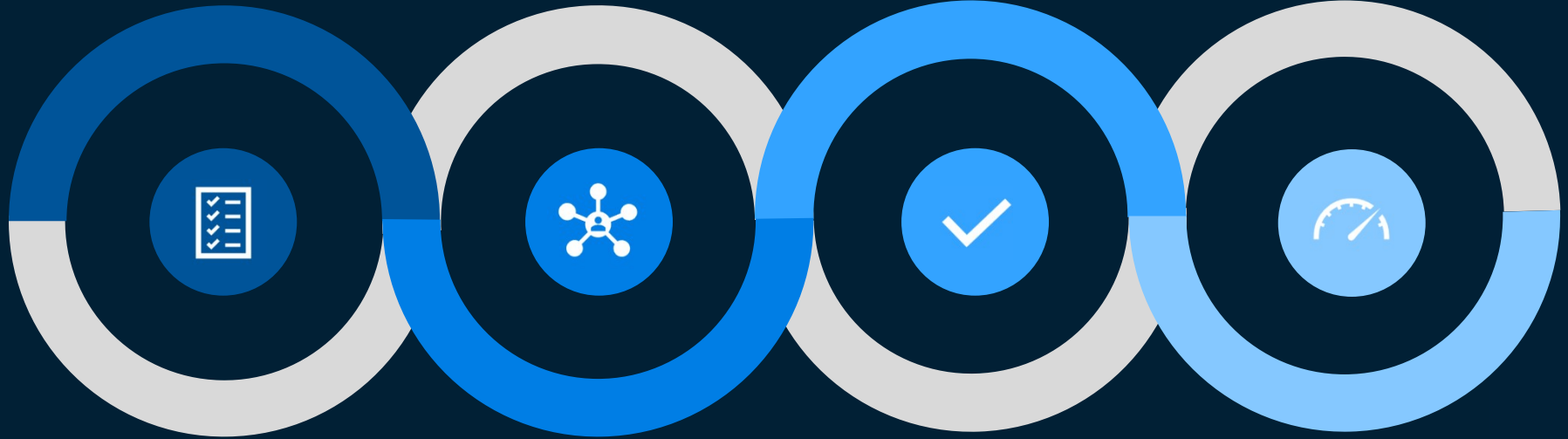
SAS 9 Inventory

SAS 9 Profile

SAS 9 Code Check

SAS 9 System Evaluation

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# SAS® 9 Content Assessment Applications are available to customers from Downloads on support.sas.com



Go to the SAS 9 Content Assessment download

# Evaluates the current system to identify known issues

# Know what products are installed

# Have Questions or Need Assistance?

- Your SAS Account team is here to help.

- SAS 9.4 Maintenance 8 is available

- SAS 9.4 M8 Product Documentation
    - For a summary of highlights see the 9.4 M8 sections of the SAS 9.4 Guide to Software Updates and Product Changes

    - The SAS Content Assessment System Evaluation Tool v2023.01

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The time is now!
Move to SAS 9.4 M8

# Questions?

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