

SAS[®] 9 Content Assessment: System Evaluation

2023.04*

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SAS® 9 Content Assessment: System Evaluation

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Understanding SAS Content Assessment

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Why?

SAS Content Assessment delivers information that is critical to helping you upgrade to a newer version of SAS 9.4 or migrate to the SAS Viya platform. It provides a comprehensive view of content on your SAS 9.4 system, giving you invaluable transparency and knowledge. You determine issues before upgrading or migrating so that you can proactively address them with SAS Technical Support.

The SAS Viya platform and the cloud are the future. The SAS Viya platform is an automated AI, analytic, and data management platform that runs on the cloud. Its massively parallel processing delivers results in seconds, not hours. Its built-in governance makes your decisions repeatable, explainable, transparent, and trustworthy, no matter the scale of your data, users, and workloads. SAS Content Assessment determines the compatibility of your existing SAS 9.4 content on the SAS Viya platform so that you can thoroughly plan for your migration to the SAS Viya platform.

Migrating to an updated or new system can be expensive and intimidating. With the work that SAS Content Assessment does before migration, you reduce downtime, you do not have to rewrite code, and you can have confidence in your new system. SAS Content Assessment makes upgrades and migration less expensive, safer, easier, and faster.

Who Can Run It?

You must use the account that you used to install and configure SAS software (**Installer user account**) to unpack and run all SAS Content Assessment applications. For the system evaluation application, you must also be able to read all files in the specified SASHome and SAS configuration directory. For the code check application, you must also be able to access and read all files in the directories specified for scanning.

SAS 9 System Evaluation

This application examines the specified SAS configuration directory and its corresponding metadata content and corresponding installation content in a SAS Metadata Server. It looks for possible issues that could adversely affect upgrading from one release of SAS 9.4 to another. This includes upgrading a SAS solution version to a later version or performing an entire SAS 9.4 upgrade. It reports issues found in various SAS objects, such as:

- Metadata objects and definitions in the Foundation repository only
- Critical configuration files
- Critical installation files

CAUTION

Using system evaluation does not guarantee that an upgrade will be without problems. System evaluation, its results, and supporting data are provided to assist in troubleshooting before or during an upgrade. SAS does not provide a guarantee as to the completeness of system evaluation data.

What Does It Tell Me?

System evaluation creates a Datamart directory and a Results directory. The Results directory contains HTML reports and archived information about the deployment for the evaluated machine. These HTML reports enable you to visualize these issues in a summarized manner.

SAS Content Assessment requires all SAS data sets to be created with UTF-8 encoding. SAS Content Assessment verifies that SAS is using UTF-8; if it is not, warnings are displayed. UTF-8 encoding enables SAS 9 Content Assessment reports to render correctly.

Getting Started

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Application Files

Depending on your operating system, you receive the following file:

- SAS9ContentAssessment.2023.04.lax.tgz (Linux)
- SAS9SystemEvaluation.2023.04.s64.tar (Solaris)
- SAS9ContentAssessment.2023.04.win.zip (Windows)

IMPORTANT Using the Installer user account, you should unpack this file into a directory that does not contain existing SAS Content Assessment content. In this guide, SAS9ContentAssessment is used as an example directory. Values in the metaparms.sas file and the setenv.yaml file are subject to change when you unpack this file, so using an older version of either of these files can be problematic.

There is a consistent directory structure when a SAS Content Assessment file is unpacked. Two subdirectories are created — assessment and migration — based on the operating system and what it supports. For example, Linux and Windows have both the assessment and migration subdirectories and AIX has just the assessment subdirectory.

Linux

Files are in the compressed TAR archive format (.tgz). Determine where you want to store the content. Unpack the file.

CAUTION

It is not recommended to unpack the files in SASHome or in the specified SAS configuration directory.

Solaris

Files are in the compressed TAR archive format (.tar). Determine where you want to store the content. Unpack the file.

CAUTION

It is not recommended to unpack the files in SASHome or in the specified SAS configuration directory.

Windows

Files are in the ZIP file format. Determine where you want to store the content. Unzip the file using either Windows Explorer or any other Windows software that supports ZIP files.

For example, you might want to unzip to the folder containing SAS Content Assessment:

C:\SAS9ContentAssessment

CAUTION

It is not recommended to unpack the files in SASHome or in the specified SAS configuration directory.

Contents

IMPORTANT This information pertains to the SAS Content Assessment file, not the System Evaluation for Solaris 64 file.

The directories and layout of any SAS Content Assessment application are the same, regardless of the operating system. The only difference between the contents is that a Windows executable file has an EXE extension, an AIX or Solaris executable has a KSH extension, and a Linux executable has no extension. When you unpacked the SAS Content Assessment file, you specified a directory that did not contain existing SAS Content Assessment content. In this guide, SAS9ContentAssessment is used as an example directory. In this directory, there are two subdirectories — assessment and migration. Here are some specific contents (directories, executables, programs, reports, and files) within those subdirectories that you might be interested in. These are explained in more detail in subsequent sections.

Assessment Subdirectory Contents

applications

Directory that contains SAS code for applications other than inventory and profile.

data

Directory that contains static data used by SAS Content Assessment.

doc

Directory that contains SAS Content Assessment documentation.

javatools

Directory that contains the Java REST server used by SAS 9 Content Assessment.

metaparms.sas

File that contains the information to connect to the SAS Metadata Server. This file must be edited. It is recommended that you use sas002–encoded passwords. See [Encryption in SAS](#) for more information.

setenv.yaml

YAML file that contains the environment settings that you must specify for SAS Content Assessment to execute.

systemEvaluation

Application that examines content for possible issues that could adversely affect upgrading from one release of SAS 9.4 to another.

Migration Subdirectory Contents

doc

Directory that contains SAS Content Assessment documentation.

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Files and Program

You must edit the following files:

- setenv.yaml
- metaparms.sas

setenv.yaml

This file is shared among all applications. However, not all settings are applicable for every application. This file contains the environment settings required to assess

your system. The required syntax is `Property: Value`. A single space between `Property:` and `Value` is required. Without it, the setting is invalid.

In the `setenv.yaml` file, certain properties must be set for specific applications. If a value is not currently or explicitly set, SAS Content Assessment fails. A property marked with an `*` does not have a default value and must be explicitly set by you. A property marked with a `+` has a default value, but it might need to be modified. Here is an example of a property on a Windows system with a sample value: `SAS_HOME:`

`C:\Program Files\SASHome`

setenv.yaml Settings

```
*SAS_HOME
SAS_JAVA_HOME
ASSESSMENT_PORT
ASSESSMENT_DATAMARTDIR
ASSESSMENT_LOGDIR
ASSESSMENT_LISTDIR
ASSESSMENT_OUTFILES_DIR
ASSESSMENT_UPLOADSDIR
+ASSESSMENT_SSL_CERT_FILE
+ASSESSMENT_SAS_MEMSIZE_OPTION
ASSESSMENT_SAS_WORK_OPTION
ASSESSMENT_JAVA_XMX_OPTION
ASSESSMENT_JAVA_XMS_OPTION
LOGGING_LEVEL

*ASSESSMENT_CONFIGDIR
ASSESSMENT_RESULTS_DIR
ASSESSMENT_SWEEPER_FULL_MODE
```

SAS_HOME

All Applications

This property must be explicitly set.

One of the most important properties to set is `SAS_HOME`. Its value is the base installation location of all of the various SAS applications and tools that are part of SAS Content Assessment. Once this property is set in the file, it can be referred to as `$SAS_HOME`.

Only `SAS_HOME` is required to run the code check applications.

SAS_JAVA_HOME

All Applications

SAS_JAVA_HOME specifies the location of Java for use by SAS Content Assessment. JRE 1.7.0 or higher is required. By default, the SAS Private JRE that exists on your SAS system is used. Verify that it is 1.7.0 or greater.

ASSESSMENT_PORT

All Applications

ASSESSMENT_PORT specifies the port to use to access the SAS 9 Content Assessment REST server. This server is accessible only through this port, and it is bound to the host on which SAS 9 Content Assessment is running. This server allows no remote execution. The default is 8889, but the port can be any valid and accessible port on the machine where SAS 9 Content Assessment is running.

ASSESSMENT_CONFIGDIR

System Evaluation

This property must be explicitly set.

The system evaluation application examines the specified SAS configuration directory and its corresponding metadata content and corresponding installation content in a SAS Metadata Server. In the specified configuration directory, it looks for possible issues that could adversely affect upgrading from one release of SAS 9.4 to another. The ASSESSMENT_CONFIGDIR directory can be set in the setenv.yaml file or specified with the --config-dir option. The --config-dir option overrides any value in the setenv.yaml file. For example, on Windows, the ASSESSMENT_CONFIGDIR directory could be:

```
C:\SASConfig\Levl
```

Or, on Linux, it could be:

```
/opt/sas/config/Levl
```

ASSESSMENT_SWEEPER_FULL_MODE

System Evaluation

The ASSESSMENT_SWEEPER_FULL_MODE property specifies whether additional content is archived for system evaluation purposes. The property defaults to TRUE, which indicates that all applicable content to system evaluation is archived.

ASSESSMENT_SSL_CERT_FILE

All Applications

The ASSESSMENT_SSL_CERT_FILE property is needed when SAS Content Assessment runs on TLS-secured deployments. It specifies the location of the public certificates for trusted certificate authorities (CAs). The following default value is applicable to SAS 9.4M3 and higher:

```
$SAS_HOME/SASSecurityCertificateFramework/1.1/cacerts/trustedcerts.pem
```

For prior releases, you should specify the location of the public certificates.

ASSESSMENT_SAS_MEMSIZE_OPTION

All Applications

The ASSESSMENT_SAS_MEMSIZE_OPTION property represents the actual SAS system option MEMSIZE. It controls how SAS sessions launched from SAS 9 Content Assessment behave. If necessary, you can modify it.

ASSESSMENT_SAS_WORK_OPTION

All Applications

The ASSESSMENT_SAS_WORK_OPTION property represents the actual SAS system option WORK. It controls how SAS sessions launched from SAS 9 Content Assessment behave. If necessary, you can modify it.

ASSESSMENT_JAVA_XMX_OPTION All Applications

The ASSESSMENT_JAVA_XMX_OPTION property specifies the maximum heap size.

ASSESSMENT_JAVA_XMS_OPTION All Applications

The ASSESSMENT_JAVA_XMS_OPTION property specifies the initial heap size.

LOGGING_LEVEL

System Evaluation

The LOGGING_LEVEL property specifies the volume of logging. DEBUG specifies all information, such as logging details for all system functions. Any other value hides all information. The default value is OFF.

Other Directories

Other directories used by SAS Content Assessment are created by default in the directory from which an application is executed. The environment variable BASE_DIR is defined by SAS Content Assessment and is the directory from which an application is executed. You can change the directory name if necessary.

ASSESSMENT_DATAMARTDIR All Applications

Root directory where all SAS data sets produced for reporting are placed. This directory also contains any CSV files produced for reporting.

ASSESSMENT_LOGDIR All Applications

Root directory where all application-created logs are placed. Subdirectories are created for each application.

ASSESSMENT_LISTDIR All Applications

Root directory where all SAS program listings are placed.

ASSESSMENT_OUTFILESDIR All Applications

Root directory where all transient content and temporary content are placed.

ASSESSMENT_RESULTSDIR Inventory and System Evaluation

For system evaluation, root directory where all issues that are encountered while evaluating a system for upgrading are placed. In this directory, any information about issues found during assessment is placed. This can include critical installation and configuration files, configuration logs, and configuration property files.

Each directory serves as a root location. As you assess content, a directory named for the application being executed is created in each directory. Furthermore, each time you execute an application, METADATALABEL is created as a subdirectory under the application subdirectory (with the exception of ASSESSMENT_UPLOADSDIR). This subdirectory represents the actual data mart resulting from the assessment. By default, in the metaparms.sas file (which is discussed in the next section), METADATALABEL is set to Server1. The format is similar to the following:

```
ASSESSMENT_RESULTSDIR/evaluation/METADATALABEL
```

CAUTION

Each execution of the inventory, profile, or system evaluation application validates the existence of each root directory under BASE_DIR. If a root directory does not exist, it is created with both the application name and METADATALABEL subdirectory. If a root directory does exist, the METADATALABEL subdirectory is verified. If the

METADATALABEL subdirectory exists, all of its contents are removed. If the METADATALABEL subdirectory does not exist, it is created.

metaparms.sas

Here are the contents of the metaparms.sas file with sample values:

```
/* Specify SAS Metadata Server connection details and encryption
password. It is recommended to use an encrypted password
such as SAS002 for all password values.
*/
%let METADATACUSTOMER = CustomerName;
%let METADATALABEL = Server1;
%let METADATAHOSTNAME = SAS Metadata Server host;
%let METADATAPORT = 8561;
%let METADATAUSER = sasadm@saspw;
%let METADATAUSERPASSWORD = sas002-encrypted password;
/* If SAS proprietary encryption is going to be used to encrypt the
published
data mart, the specified value must result in a valid SAS name.
*/
```

If you need to comment out a line in the metaparms.sas file, the line must start with a `/*` and end with a `*/`. For example, here is how to comment out the value of METADATAPORT and use another value:

```
/* %let METADATAPORT = 8561; */
%let METADATAPORT = 8564;
```

This commenting style helps applications verify required values.

METADATACUSTOMER identifies your site in the reports. Only alphanumeric characters are allowed. The value cannot be longer than 60 characters.

METADATALABEL identifies the deployment being assessed. This enables you to assess multiple deployments. The value is used as a directory name. A possible value can be the configuration level in a planned deployment. For example, if your deployment is at `c:\SASConfig\Lev1`, you could specify `Lev1`. Only alphanumeric characters are allowed. The value cannot be longer than 60 characters.

METADATAHOSTNAME is the name of the SAS Metadata Server host machine, regardless of tier being assessed. This should be a fully qualified domain host name.

METADATAPORT is the port used to connect to the SAS Metadata Server, regardless of tier being assessed.

METADATAUSER is an unrestricted user who performs the assessment. This user should be the same user across all tiers.

METADATAUSERPASSWORD is the password for METADATAUSER. You must create the password; it is not generated by the system.

IMPORTANT The metaparms.sas file contains user credentials and should be secured to prevent unauthorized access.

Executing the System Evaluation Application

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System Evaluation

IMPORTANT To run the system evaluation application, you must be the Installer user account or a user capable of reading all files in the specified SASHome and SAS configuration directory. System evaluation works only on a machine where there is a SAS configuration. You must specify a valid --config-dir or the application fails. System evaluation must be run on each configured machine in a SAS deployment and it expects a SAS middle tier present in each deployment that it validates. On a multi-tier SAS deployment, you must use a different METADATALABEL value for each tier to avoid overwriting results.

Execute the following command from the directory in which you unpacked or unzipped the file. Here is the example of the command in Linux:

```
$ ./SAS9ContentAssessment/assessment/systemEvaluation
```

Here is the example of the command on Windows:

```
C:\SAS9ContentAssessment\assessment> systemEvaluation.exe
```

Online Help for system evaluation can be obtained by executing the Help command. Here is an example of the command in Linux:

```
$ ./SAS9ContentAssessment/assessment/systemEvaluation --help
```

The system evaluation application has the same purpose and effect in AIX, Linux, Solaris, and Windows. However, the way in which the application interacts with the system it is evaluating is different in AIX.

The application requires one parameter. `--config-dir` specifies the SAS configuration directory to evaluate. This parameter can be set in the `setenv.yaml` file.

An optional command-line argument is `--sweeper-only`. If this argument is specified, the application does not run any tests. Instead, it collects content and archives it. For more information, see [“Results”](#).

System evaluation supports SAS Metadata Servers configured for various encryption algorithms, including SAS Proprietary and Advanced Encryption Standard (AES). System evaluation also supports SAS deployments configured for Transport Layer Security (TLS) usage. If your system is configured for TLS, you should specify the location of the public certificates for trusted certificate authorities (CAs) when providing the required settings.

System evaluation performs many checks. Here are some of the more important ones:

- It searches SAS metadata for errors and issues based on the products associated with the specified SAS configuration directory.
- It validates SAS configuration and installation files.
 - The SAS Deployment Registry is validated against all software in the system. If you installed SAS software from the SAS Customer Support site, system evaluation validates this software only if it was installed in the primary SAS installation directory on the current machine.
 - Potential issues are reported.
- It validates SAS configuration log files and reports potential issues.
- System evaluation searches for any retired SAS software configuration. If one is found, you are informed of the name of the product associated with the SAS software configuration and encouraged to remove this product's configuration. For more information, see [“Removing a SAS Configuration”](#) in *SAS Intelligence Platform: Installation and Configuration Guide*.
- Any differences in how the user connects to the SAS Metadata Server, as well as its host and port values, are logged for the user to investigate.

Product-Specific Evaluation

System evaluation checks the values for the maximum connections and maximum prepared transactions in the SAS Web Infrastructure Platform Data Server. The SAS Web Infrastructure Platform Data Server is often deployed with both maximum connections and maximum prepared transactions set to 256. The values of maximum connections and maximum prepared transactions must be equal. SAS recommends a setting of at least 1024 to ensure success during SAS software upgrades. A value of 1024 or higher is not required for day-to-day operations, unless your site differs. After a SAS software upgrade, the value can be reset to 256.

For more information, see “[Tuning the PostgreSQL Data Server](#)” in *SAS Web Applications: Tuning for Performance and Scalability*.

System evaluation checks assorted configuration settings for the SAS Cache Locator. If recommended settings are missing or not set to the recommended value, the user is informed and referred to [Problem Note 64098: SAS Cache Locator failures during heap-dump collection](#). For more information about these configuration properties, see “[Understand the Cache Locator Configuration](#)” in *SAS Intelligence Platform: Middle-Tier Administration Guide* and “[Understanding SAS Web Application Server Configuration](#)” in *SAS Intelligence Platform: Middle-Tier Administration Guide*.

Some products require special handling. System evaluation searches for these products and informs the user if any are found with instructions to contact SAS Technical Support for more information.

For example, if SAS Federation Server Manager 4.1 is installed on your system, you must remove it before performing an upgrade in place. SAS Federation Server Manager 4.2 or higher includes significant SAS Deployment Topology changes. After the upgrade in place has completed, you can install SAS Federation Server Manager 4.2 or higher.

Results

Once system evaluation is completed, it can create up to two directories: ASSESSMENT_DATAMARTDIR and ASSESSMENT_RESULTSDIR.

It creates an ASSESSMENT_DATAMARTDIR directory of comma-separated values (CSV) files for each machine. It contains content discovered and derived during the evaluation.

A compressed archive file is created in the ASSESSMENT_RESULTSDIR directory on each machine that is evaluated. Because this file contains all SAS configuration logs and other relevant files, make sure you have enough disk space. A way to estimate disk space is to make sure you have enough for the log files you currently have.

The file is named using the following format:

```
CollectedResults_short-host-name_config-level.tgz
```

Its content is controlled by the ASSESSMENT_SWEEPER_FULL_MODE setting, specified in the [setenv.yaml](#) file. Because the default setting for this property is TRUE, the following content is included:

- SAS Deployment Registry content
- SAS Deployment Wizard logs, setup information, and deployment plans
- SAS metadata extracts¹
- SAS configuration data, logs, utility files, and property files
- SAS Web Application Server logs, environment, configuration, and scripts¹
- SAS Cache Locator logs¹

1. Not all content is archived on all machines and is dependent on the SAS products installed and configured.

- SAS JMS Broker logs¹
- System evaluation logs and summary and topology reports

If `ASSESSMENT_SWEEPER_FULL_MODE` is set to `FALSE`, the following subset of content is included:

- SAS Deployment Registry content
- SAS Deployment Wizard deployment plans
- SAS metadata extracts¹
- SAS configuration data, logs, and utility files
- System evaluation logs and summary and topology reports

IMPORTANT In either case, because this archive contains a lot of content, make sure that you have enough disk space. A way to estimate disk space is to make sure you have enough for the configuration log files you currently have as well as your SAS web application logs.

In the `ASSESSMENT_RESULTSDIR` directory, a `SystemEvaluationResults.properties` file is created. This file provides properties, errors, and an error count.

In addition, a log file is created. It details the results of the evaluated system and is named using the following format:

```
.../evaluation/deployment_name/systemEvaluation_short-host-name_
config-level_yyyy-mm-dd-HH.MM.SS.log
```

The log file uses specific wording to enable easier searching and better communication with SAS Technical Support. Wording is summarized at the end of the log file and uses the following form:

`SAS9CASE-ISSUE`

For example, suppose your log file has the following content:

`SAS9CASE-LOGCHECK`

`SAS9CASE-STATUSXMLMULTIORDERS`

`LOGCHECK` indicates that one or more configuration logs in the specified configuration directory contained issues. All logs are archived in `ASSESSMENT_RESULTSDIR`, so this information can be provided to SAS Technical Support. Based on this content, an issue or warning occurred. If this issue is not resolved, a future SAS software upgrade could experience challenges.

`STATUSXMLMULTIORDERS` indicates that multiple SAS software orders are in the SAS installation directory (`SASHome`) as well as in the specified configuration directory. This scenario does not usually cause problems. However, if you experience issues upgrading your software, it is important to provide this information to SAS Technical Support.

Details are provided for each issue to help diagnose potential problems.

System evaluation produces HTML reports as a part of its execution. These reports are in the subdirectory `SummaryReports` in `ASSESSMENT_RESULTSDIR`. Some are created on each machine where system evaluation is run. Required support content is provided in the `SummaryReports` subdirectory.

Two reports are created:

- `SummaryReport_short-host-name_config-level.html`
- `TopologyReport_short-host-name_config-level.html`

The summary report is always created on each machine where system evaluation is run. It contains system configuration settings relevant to the SAS deployment, helpful documentation links, a table detailing the tests executed, and the total number of issues found. If issues are found or a warning is necessary, the table contains additional information about what failed and what you should do.

The topology report is created only on the SAS Metadata Server tier. It contains an HTML rendition of the deployment topology of all SAS products that are configured. The report describes each machine in the deployment and the products that are configured.

If you need to copy the content of these reports, be sure to copy the entire `SummaryReports` subdirectory and its contents.

Immediate Failures

The system evaluation application immediately fails if certain checks determine critical problems in your deployment. The application stops, and an error message provides information and, in some cases, steps to address the critical problem.

The application fails if a valid `--config-dir` is not specified. The application works only on a machine where there is a SAS configuration.

The application fails if certain critical installation or configuration files are missing or empty. There are two primary files that are validated. The `status.xml` file is in the specified SAS configuration directory. For example, on Linux:

```
/opt/sas/config/Lev1/ConfigData
```

Or, on Windows:

```
C:\SASConfig\Lev1\ConfigData
```

The SAS Deployment Registry file, `registry.xml`, is in the following directory on Linux:

```
/opt/sas/SASHome/deploymentreg
```

Or, on Windows:

```
C:\Program Files\SASHome\deploymntreg
```

If you receive an error message, verify that these files exist, that they are not empty, and that they are accessible by the user running system evaluation. Other critical files are validated, but they do not cause the application to fail.

The application fails if the `METADATAHOSTNAME` and `METADATAUSER` values in the `metaparms.sas` file and the `metadata.connection.properties` do not match. The `metadata.connection.properties` file is in the specified SAS configuration directory. For example, on Linux:

```
/opt/sas/config/Lev1/Utilities
```

Or, on Windows:

```
C:\SASConfig\Lev1\Utilities
```

The application fails if invalid credentials are discovered. Credentials provided in the `metadata.sas` file are validated, depending on the deployment tier being evaluated. On a tier with SAS installed, invalid credentials cause system evaluation to fail as it tries to determine SAS metadata repositories. On a tier without SAS installed, system evaluation fails when communicating with the SAS Metadata Server to determine middle-tier connection information.

The application fails on Linux if the user running it is not the user who installed and configured the SAS software on the machine. On Windows, system evaluation does not fail if the user running it is not the user who installed and configured the SAS software on the machine, but it warns you that problems might occur during the evaluation.

The application validates whether the user is authorized to view results before a specific scan begins. If the user is not authorized, the application fails immediately before the scan.

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The Results

System evaluation analyzes your SAS 9 system for system and configuration details that can help you determine whether your system is healthy, configured correctly, and a good candidate for upgrade.

When completed, system evaluation has:

- searched SAS metadata for errors and issues
- validated SAS configuration and installation files
- validated SAS configuration log files and reports
- gathered potential issues

For detailed information about the directories that are created and what they contain, see [“System Evaluation”](#).

Version History

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<i>Summary of 2023.01</i>	25
<i>Summary of 2023.03</i>	25

Summary of 2021.1.2

- SAS 9 Content Assessment now follows SAS Viya release numbering.
- Numerous enhancements have been made, performance has improved, and issues have been addressed in all applications.

Summary of 2021.1.3

- The system evaluation application no longer stops when it cannot read a file or directory.
- Numerous enhancements have been made, performance has improved, and issues have been addressed across the applications.

Summary of 2021.1.4

- Enhancements have been made, performance has improved, and issues have been addressed across the applications.

Summary of 2021.1.5

- System evaluation has been modified to more accurately test for the presence of multiple JVM_OPTIONS entries.
- Enhancements have been made, performance has improved, and issues have been addressed across the applications.

Summary of 2021.2.3 – Update 1

Digital signatures of SAS Content Assessment Windows applications have been updated.

Summary of 2022.1.2

System evaluation has enhanced analysis and more detailed logging.

Summary of 2022.09

Beginning with this release, SAS 9 Content Assessment follows the new SAS Viya release numbering.

Summary of 2023.01

- System evaluation checks for all retired SAS products and provides instructions for what to do.
- System evaluation checks whether SAS Remote Deployment Agent credentials need to be regenerated.
- System evaluation prompts you to verify whether your operating system version is supported in specific releases of SAS.
- System evaluation checks whether SAS Remote Services is running and alerts users that it is not supported in SAS 9.4M8.
- System evaluation warns you that the gemfire.member-timeout property is removed if you upgrade to SAS 9.4M8.

Summary of 2023.03

- For SAS Credit Scoring users, system evaluation checks whether there are unsupported databases. The only supported database is SAS.
- The system evaluation check "SAS Analytical Data Set Builder Server 6.4 or later only supports SAS as its DBMS type" is not applicable to AIX or Solaris.
- Perl and Curl are no longer required for AIX.
- System evaluation runs on SAS 9.4 on Solaris.

