

## SAS Security Updates and Hot Fixes

This document describes the steps you should take to apply SAS Security Updates and product-specific hot fixes containing security updates. It is critical that the steps be performed in the order they appear in this document. Some product-specific hot fixes may require you to reapply SAS Security Updates. If so, follow the instructions contained in this document to reapply the appropriate SAS Security Updates, then rebuild and redeploy web applications.

### Section 1 — Product-Specific Hot Fixes

All deployments should perform the steps in this section.

Apply product-specific hot fixes using the following steps.

1. Run the HFADD tool to generate a report of other hot fixes that you may want to apply to your deployment.  
*Note:* When you use the HFADD tool, SAS Security Updates and hot fix Y09009 will never be included in the results. SAS Security Updates and hot fix Y09009 must always be applied manually according to the instructions below.
2. When you have determined all the hot fixes to apply to your deployment, download them and place them in a directory on each machine or in a shared location each machine can access per the instructions provided in the *SAS Deployment Wizard and SAS Deployment Manager 9.4: User's Guide*.
3. Perform any pre-installation tasks in the documentation that accompanies each hot fix.
4. Apply the hot fixes.
5. Perform any post-installation tasks in the documentation that accompanies each hot fix. If the post-installation tasks include rebuilding and redeploying web applications, delay these tasks until you reach Section 7 of this document.

### Section 2 — Java Deserialization Update

#### ***Determine If Java Deserialization Update is Needed***

These steps should be followed for all maintenance levels of SAS 9.4, regardless of whether any other security updates have been applied.

To determine if you have applied the Java Deserialization Update, locate and examine the contents of these files:

```
SASHome\InstallMisc\utilities\installqual\9.4\serialization_hotfix.properties  
SASHome\instqualtool\serialization_hotfix.properties
```

If the file does not exist in either location or it lists the version of the SAS security update as less than 4.0, you do not have this latest version of the update. You should continue with the instructions to apply the Java Deserialization Update.

If the proper version is listed, and you have applied a hot fix, you may be directed to re-apply the Java Deserialization Update after applying the hot fix. If you have been directed to re-apply the Java Deserialization Update, please do so to ensure continued system security.

## **Apply the Java Deserialization Update**

Use the following steps to apply the security update. These instructions should be performed for every machine in your deployment, either by putting the update individually on each machine or running the update from a networked location that each machine has access to.

1. Before beginning, ensure all active SAS sessions, daemons, spawners, servers, and agents are terminated. In addition, SAS strongly recommends that you back up your system before applying the hot fix.
2. Download the security update from [https://tshf.sas.com/techsup/download/hotfix/HF2/SAS\\_Security\\_Updates.html#update](https://tshf.sas.com/techsup/download/hotfix/HF2/SAS_Security_Updates.html#update)
3. Unzip `sas-security-update-2020-08.zip` into a directory of your choice. On UNIX, using `unzip` is the best option, but if you use WinZip or the `jar xvf` command, you must also use the following command in order to preserve the appropriate permissions:

```
chmod a+x install.sh
```

If the install ID differs from the security update directory owner, make the directory writable by all IDs in the same group with the following command:

```
chmod -R g+w /<security directory>/sas-security-update-2020-08
```

4. From the directory into which you've unpacked the software, go to the `sas-security-update-2020-08` directory.
5. In that directory, run the appropriate script using the same user ID that was used to install the software. The script requires one argument, the full path to the SASHOME where the hot fix is going to be applied.

### **Windows**

```
install.bat "<SASHOME>"
```

### **Windows Example**

```
install.bat "C:\Program Files\SASHome"
```

*Note: Depending on your settings, you may have to use the **Run as administrator** option.*

### **UNIX**

```
./install.sh "<SASHOME>"
```

### **UNIX Example**

```
./install.sh "/usr/lpp/SAS"
```

6. The tool runs and applies the hot fix to all the files in the SASHOME and SASConfig that need to be updated. When the tool finishes making the updates, it provides a message that says the updates are complete and then exits.

7. If you plan to deploy other hot fixes from the location where you placed this zip file, you will need to remove it from this location. The SAS Deployment Manager, which is used for deploying other hot fixes, will not recognize this file and will issue an error.

## Section 3 — Apply SAS Security Update 2018-09

### ***Determine If SAS Security Update 2018-09 is Needed***

If you are not using SAS 9.4\_M5, skip to Section 4.

To determine if you have applied SAS Security Update 2018-09, locate and examine the contents of the following file:

```
SASHome\InstallMisc\utilities\installqual\9.4\security_hotfix.properties
```

If the file does not exist or it does not list the version as 1.0, you do not have this latest version of the update. You should continue with the instructions to apply SAS Security Update 2018-09.

If the proper version is listed, and you have applied a hot fix, you may be directed to re-apply the SAS Security Update after applying the hot fix. If you have been directed to re-apply the SAS Security Update, please do so to ensure continued system security.

### ***Apply SAS Security Update 2018-09***

Use the following steps to apply the security update. These instructions should be performed for every machine in your deployment, either by putting the update individually on each machine or running the update from a networked location that each machine has access to.

1. Before beginning, ensure all active SAS sessions, daemons, spawners, servers, and agents are terminated. In addition, SAS strongly recommends that you back up your system before applying the hot fix.
2. Download the security update from [https://tshf.sas.com/techsup/download/hotfix/HF2/SAS\\_Security\\_Update\\_s.html#update2](https://tshf.sas.com/techsup/download/hotfix/HF2/SAS_Security_Update_s.html#update2)
3. Unzip `sas-security-update-2018-09.zip` into a directory of your choice. On UNIX, using `unzip` is the best option, but if you use WinZip or the `jar -xvf` command, you must also use the following command in order to preserve the appropriate permissions:

```
chmod a+x install.sh
```

If the install ID differs from the security update directory owner, make the directory writable by all IDs in the same group with the following command:

```
chmod -R g+w /<security directory>/sas-security-update-2018-09
```

4. From the directory into which you've unpacked the software, go to the `sas-security-update-2018-09` directory.
5. In that directory, run the appropriate script using the same user ID that was used to install the software. The script requires one argument, the full path to the SASHOME where the hot fix is going to be applied.

#### **Windows**

```
install.bat "<SASHOME>"
```

### Windows Example

```
install.bat "C:\Program Files\SASHome"
```

*Note: Depending on your settings, you may have to use the **Run as administrator** option.*

### UNIX

```
./install.sh "<SASHOME>"
```

### UNIX Example

```
./install.sh "/usr/lpp/SAS"
```

6. The tool runs and applies the hot fix to all the files in the SASHOME and SASConfig that need to be updated. When the tool finishes making the updates, it provides a message that says the updates are complete and then exits.
7. If you plan to deploy other hot fixes from the location where you placed this zip file, you will need to remove it from this location. The SAS Deployment Manager, which is used for deploying other hot fixes, will not recognize this file and will issue an error.

## Section 4 — Apply SAS Security Update 2019-11-M6

### ***Determine If SAS Security Update 2019-11-M6 is Needed***

If you are not using SAS 9.4\_M6, skip to Section 5.

To determine if you have applied SAS Security Update 2019-11, locate and examine the contents of the following file:

```
SASHome\InstallMisc\utilities\installqual\9.4\security_hotfix.properties
```

If the file does not exist or it does not list the version as 5.0, you do not have this latest version of the update. You should continue with the instructions to apply SAS Security Update 2019-11-M6.

If the proper version is listed, and you have applied a hot fix, you may be directed to re-apply the SAS Security Update after applying the hot fix. If you have been directed to re-apply the SAS Security Update, please do so to ensure continued system security.

### ***Apply SAS Security Update 2019-11-M6***

Use the following steps to apply the security update. These instructions should be performed for every machine in your deployment, either by putting the update individually on each machine or running the update from a networked location that each machine has access to.

1. Before beginning, ensure all active SAS sessions, daemons, spawners, servers, and agents are terminated. In addition, SAS strongly recommends that you back up your system before applying the hot fix.
2. Download the security update from [https://tshf.sas.com/techsup/download/hotfix/HF2/SAS\\_Security\\_Update\\_s.html#update3](https://tshf.sas.com/techsup/download/hotfix/HF2/SAS_Security_Update_s.html#update3)
3. Unzip `sas-security-update-2019-11-M6.zip` into a directory of your choice. On UNIX, using `unzip` is the best option, but if you use WinZip or the `jar xvf` command, you must also use the following command in order to preserve the appropriate permissions:

```
chmod a+x install.sh
```

If the install ID differs from the security update directory owner, make the directory writable by all IDs in the same group with the following command:

```
chmod -R g+w /<security directory>/sas-security-update-2017-09
```

4. From the directory into which you've unpacked the software, go to the `sas-security-update-2019-11-M6` directory.
5. In that directory, run the appropriate script using the same user ID that was used to install the software. The script requires one argument, the full path to the SASHOME where the hot fix is going to be applied.

#### Windows

```
install.bat "<SASHOME>"
```

#### Windows Example

```
install.bat "C:\Program Files\SASHome"
```

*Note: Depending on your settings, you may have to use the **Run as administrator** option.*

#### UNIX

```
./install.sh "<SASHOME>"
```

#### UNIX Example

```
./install.sh "/usr/lpp/SAS"
```

6. The tool runs and applies the hot fix to all the files in the SASHOME and SASConfig that need to be updated. When the tool finishes making the updates, it provides a message that says the updates are complete and then exits.
7. If you plan to deploy other hot fixes from the location where you placed this zip file, you will need to remove it from this location. The SAS Deployment Manager, which is used for deploying other hot fixes, will not recognize this file and will issue an error.

## Section 5 — Apply SAS Security Update 2020-08-M7

### ***Determine If SAS Security Update 2020-08-M7 is Needed***

If you are not using SAS 9.4\_M7, skip to Section 6.

To determine if you have applied SAS Security Update 2020-08-M7, locate and examine the contents of the following file:

```
SASHome\InstallMisc\utilities\installqual\9.4\security_hotfix.properties
```

If the file does not exist or it does not list the version as 6.0, you do not have this latest version of the update. You should continue with the instructions to apply SAS Security Update 2020-08-M7.

If the proper version is listed, and you have applied a hot fix, you may be directed to re-apply the SAS Security Update after applying the hot fix. If you have been directed to re-apply the SAS Security Update, please do so to ensure continued system security.

### ***Apply SAS Security Update 2020-08-M7***

Use the following steps to apply the security update. These instructions should be performed for every machine in your deployment, either by putting the update individually on each machine or running the update from a networked location that each machine has access to.

1. Before beginning, ensure all active SAS sessions, daemons, spawners, servers, and agents are terminated. In addition, SAS strongly recommends that you back up your system before applying the hot fix.
2. Download the security update from [https://tshf.sas.com/techsup/download/hotfix/HF2/SAS\\_Security\\_Updates.html#update3](https://tshf.sas.com/techsup/download/hotfix/HF2/SAS_Security_Updates.html#update3)
3. Unzip `sas-security-update-2020-08-M7.zip` into a directory of your choice. On UNIX, using `unzip` is the best option, but if you use WinZip or the `jar xvf` command, you must also use the following command in order to preserve the appropriate permissions:
 

```
chmod a+x install.sh
```

If the install ID differs from the security update directory owner, make the directory writable by all IDs in the same group with the following command:

```
chmod -R g+w /<security directory>/sas-security-update-2020-08-M7
```
4. From the directory into which you've unpacked the software, go to the `sas-security-update-2020-08-M7` directory.
5. In that directory, run the appropriate script using the same user ID that was used to install the software. The script requires one argument, the full path to the SASHOME where the hot fix is going to be applied.

#### Windows

```
install.bat "<SASHOME>"
```

#### Windows Example

```
install.bat "C:\Program Files\SASHome"
```

*Note: Depending on your settings, you may have to use the **Run as administrator** option.*

#### UNIX

```
./install.sh "<SASHOME>"
```

#### UNIX Example

```
./install.sh "/usr/lpp/SAS"
```

6. The tool runs and applies the hot fix to all the files in the SASHOME and SASConfig that need to be updated. When the tool finishes making the updates, it provides a message that says the updates are complete and then exits.
7. If you plan to deploy other hot fixes from the location where you placed this zip file, you will need to remove it from this location. The SAS Deployment Manager, which is used for deploying other hot fixes, will not recognize this file and will issue an error.

## Section 6 — Apply Hot Fix Y09009 – Supplemental Hot Fix for SAS Security Updates

Hot fix Y09009 is a container hot fix that contains fixes for several products. Your deployment may not contain all of the products included in this hot fix container: the tools will skip updates if they do not apply to your deployment. We have packaged these together to make the update simpler.

1. Review [Y09009pt.pdf](#) to see the list of SAS products that will be updated by Y09009. See [SASNote 35968](#) for information on how to determine if you have any of the products

installed as part of your SAS deployment. If you have one or more of the products, you must install Y09009. If you do not have any of the products, skip to Section 6.

2. As needed, use the instructions in the Y09009pt.pdf file to apply hot fix Y09009 to every machine in your deployment.
3. Continue to Section 7.

## Section 7 — Rebuild and Redeploy Web Applications

If you have applied either or both SAS Security Updates, you must perform the steps in this section.

**Note:** *If you have any of the following SAS products clustered horizontally (such as for high availability), complete this section only on the primary middle tier machine or machines for the cluster. Section 8 will update horizontal cluster nodes for the following SAS products.*

- SAS JMS Broker
- SAS Cache Locator
- SAS Web Server
- SAS Environment Manager

After the update and hot fixes have been applied, you must rebuild and redeploy every web application on each middle tier machine to assure the hot fixes can take effect. The instructions for rebuilding and redeploying can be found in the following locations:

**Rebuilding** - refer to the “Rebuilding the SAS Web Applications” topic in *SAS 9.4 Intelligence Platform: Middle-Tier Administration Guide* located at

<http://documentation.sas.com/?cdcId=bicdc&cdcVersion=9.4&docsetId=bimtag&docsetTarget=p0plwle8uj04upn1vrsbstiwkzmz.htm>

**Redeploying** - refer to the “Redeploying the SAS Web Applications” topic in *SAS 9.4 Intelligence Platform: Middle-Tier Administration Guide* located at

<http://documentation.sas.com/?cdcId=bicdc&cdcVersion=9.4&docsetId=bimtag&docsetTarget=n02nbqc1n26j7gn1lgpbgss3ev8p.htm>

## Section 8 — Apply the SAS Security Update to a Horizontal Middle-Tier Cluster Node

**Note:** *If you have any of the following SAS products clustered horizontally (such as for high availability), complete this section only for the secondary middle tier cluster nodes for the product.*

- SAS Web Server
- SAS Environment Manager
- SAS JMS Broker
- SAS Cache Locator

*If you have not clustered any of these products horizontally, skip this section.*

*If you have clustered any of the products above horizontally, please refer to the “Maintain a Horizontal Cluster Member” topic in SAS 9.4 Intelligence Platform: Middle-Tier Administration Guide located at*

<https://go.documentation.sas.com/?docsetId=bimtag&docsetTarget=n1sw235awiqrflnlee54jov2otd7.htm&docsetVersion=9.4&locale=en>

Product-specific hot fixes may require additional manual steps for configuration on horizontal middle-tier cluster nodes. Please review the individual hot fix installation documentation for additional steps required.

## Contacting SAS Technical Support

If you need assistance with the software, we ask that only SAS support personnel call our Technical Support Division.

- For U.S. and Canadian customers, support is provided from our corporate headquarters in Cary, North Carolina. You may call (919) 677-8008, Monday through Friday.
- Customers outside of the U.S. can obtain local-language technical support through the local office in their countries. Customers in these locations should contact their local office for specific support hours. See <http://support.sas.com/techsup/contact/index.html> for contact information for local offices.

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