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*Technical Paper*

Using the Maintenance Installation Tool to Install  
SAS<sup>®</sup> Hot Fixes

*Usage and Troubleshooting Guide*

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## Table of Contents

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<b>Introduction</b> .....	<b>3</b>
<b>Before You Begin</b> .....	<b>3</b>
<b>Invoking the Maintenance Installation Tool</b> .....	<b>3</b>
Windows Operating Environments .....	4
UNIX Operating Environments .....	4
z/OS Operating Environment.....	5
Method A: Line Mode – Installation Jobs That Are Submitted Automatically .....	5
Method B: Line Mode – Installation Jobs That Are Submitted Manually .....	5
Method C: Graphical User-Interface Mode – Installation Jobs That Are Submitted Automatically .....	6
Method D: Graphical User-Interface Mode – Installation Jobs That Are Submitted Manually .....	6
OpenVMS Operating Environment.....	7
<b>Using the Maintenance Installation Tool in the Windows, UNIX, and OpenVMS Operating Environments</b> .....	<b>8</b>
<b>Using the Maintenance Installation Tool in the z/OS Operating Environment</b> .....	<b>11</b>
<b>Container Hot Fixes</b> .....	<b>13</b>
<b>Silent Installation</b> .....	<b>14</b>
Windows Operating Environments .....	14
UNIX Operating Environments .....	15
z/OS Operating Environment.....	15
<b>Frequently Asked Questions</b> .....	<b>15</b>
<b>Troubleshooting</b> .....	<b>16</b>
Understanding the Basic Criteria for Applying SAS® 9.2 Hot Fixes with the Maintenance Installation Tool .....	17
Troubleshooting Problems That Occur During the Application of a Hot Fix.....	17
Known Problems and Solutions.....	18
<b>When to Contact SAS Technical Support</b> .....	<b>24</b>
<b>Recommended Reading</b> .....	<b>25</b>



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## Introduction

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This guide describes how to use the Maintenance Installation Tool (MIT) to apply hot fixes to SAS® 9.2 (TS2M0 or later). You can use the MIT for all SAS 9.2 hot fixes, including updates to foundation, client, middle-tier, and solutions software.

Beginning with SAS 9.2 TS2M0, each hot-fix download contains updates for all applicable languages, including double-byte character-set languages. If the hot fix that you want to apply contains updates for more than one language, those languages are listed in the initial Install SAS Updates window of the MIT. Only the updates for the languages that are contained in the SASHOME directory are installed.

This guide also provides a section of frequently asked questions as well as a troubleshooting section to help you solve common problems that might occur with the tool.

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## Before You Begin

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Before you download and apply a hot fix, there are some caveats of which you should be aware.

- When you download SAS 9.2 hot-fix packages, you should save the hot fix to a directory, and then execute the hot fix from its saved location. If you execute a hot-fix package directly from the download page, you either receive an error or the installation does not complete.
- For proper installation of a hot fix, you must have a valid SAS 9.2 (TS2M0 or later) SASHOME directory in the operating environment where the hot fix is to be applied. During the installation, the MIT confirms the following:
  - that the proper release of SAS is installed
  - that the product for which the hot fix is intended is installed
  - that the hot fix is being applied on the operating system for which it is intended

If any of these criteria are not met, the hot-fix installation fails.

- The MIT provides automatic backup for existing files on your system that are replaced during application of a hot fix. Information about file backup appears in the installation dialog boxes, as shown in examples later in the sections "Using the Maintenance Installation Tool in the Windows, UNIX, and OpenVMS Operating Environments" and "Using the Maintenance Installation Tool in the z/OS Operating Environment."

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## Invoking the Maintenance Installation Tool

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Installation of a hot fix involves three steps:

1. Downloading a hot-fix file to your system.
2. Executing the hot fix to invoke the MIT.
3. Using the MIT to apply the hot fix to your system.

To begin this process, download and save the SAS 9.2 hot-fix package that you want to apply. Hot-fix packages are available from the SAS Technical Support Hot Fixes Web page (<ftp.sas.com/techsup/download/hotfix/hotfix.html>). Then follow the specific directions for your operating environment, as explained in the next sections.

## Windows Operating Environments

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1. Download and save your hot fix to a directory of your choice on your C: drive.
2. Execute the hot-fix file, named *hot-fixID.exe*, where *hot-fixID* specifies the hot-fix ID number (for example, A01001wn.exe). When you execute the hot fix, the MIT is invoked automatically.
3. Use the MIT to apply the hot fix, per the instructions in the section "Using the Maintenance Installation Tool in the Windows, UNIX, and OpenVMS Operating Environments."

### Important Notes

- **For Windows Vista, Windows Server 2008, and Windows 7 Operating Environments:** When you run the *hot-fixID.exe* file, you might need to use the **Run as Administrator** option in order to execute the hot-fix installation binary file.
- If you install **hot fixes to client/server environments**, see SAS Note 40371, "Instructions for applying a hot fix to a SAS Software Depot for Client Users in SAS 9.2®." (<support.sas.com/kb/40/371.html>)

## UNIX Operating Environments

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1. Download and save your hot fix to a UNIX directory of your choice.
2. Verify that the hot-fix installation binary file has Execute permission. If it does not, use the UNIX **chmod** command to make it executable, as shown in the following example:

```
$> chmod 755 hot-fixID.bin
```

In this example, *hot-fixID.bin* specifies the hot-fix file that you have downloaded (for example A04001r6.bin).

3. Set your UNIX \$DISPLAY environment variable, as follows:

```
$> export display=your-node-name:0
```

4. Execute the hot-fix package by submitting the following:

```
$> path/hot-fixID.bin
```

In this syntax:

- *path* specifies the location to which you saved the hot-fix package
- *hot-fixID* specifies the hot-fix ID number (for example, A01001r6.bin).

When you execute *path/hot-fixID.bin*, the MIT is invoked automatically.

5. Use the MIT to apply the hot fix, per the instructions in "Using the Maintenance Installation Tool in the Windows, UNIX, and OpenVMS Operating Environments."

**Note:** During the installation, the system prompts you for the SASHOME location that you are updating. You should provide the path for the top-level SAS directory where the `deploymentreg` directory resides. The remaining MIT pages guide you through the installation process.

## z/OS Operating Environment

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Under z/OS, there are four methods for installing SAS 9.2 hot fixes:

- line mode, where installation jobs are submitted automatically
- line mode, where installation jobs are submitted manually
- graphical user-interface mode, where jobs are submitted automatically
- graphical user-interface mode, where jobs are submitted manually

### Method A: Line Mode – Installation Jobs That Are Submitted Automatically

1. Download and save the hot fix to a UNIX Systems Services directory of your choice.
2. Invoke the hot-fix installation by submitting the following command:

```
prompt> ./hot-fixID.bin -- -silent
```

In this command, *hot-fixID* specifies the hot-fix ID number (for example, A01001os.bin). When you execute the hot fix, the MIT is invoked automatically.

After you complete these steps, the hot-fix jobs are submitted automatically for execution.

### Method B: Line Mode – Installation Jobs That Are Submitted Manually

1. Download and save the hot fix to a UNIX Systems Services directory of your choice.
2. Invoke the hot-fix installation, as follows, and manually submit the hot fix jobs.

```
prompt> ./hot-fixID.bin --keep -- -silent -nojobsubmit
```

In this command, *hot-fixID* specifies the hot-fix ID number (for example, A01001os.bin). When you execute the hot fix, the MIT is invoked automatically.

3. After you manually submit all of the hot-fix jobs, relaunch the hot-fix binary file along with the `-FINALIZEINSTALL` command-line option:

```
prompt> ./hot-fixID.bin -- -finalizeinstall
```

4. Use the MIT to apply the hot fix, per the instructions in "Using the Maintenance Installation Tool in the z/OS Operating Environment."

#### Notes:

- You can install only one hot fix at a time. Complete steps 1 and 2 above for one hot fix before you begin the installation of another hot fix.
- This particular method creates a temporary directory named `XX_V1` in your working directory that resides in the UNIX Systems Services (USS). Once you verify the hot fix, you can remove this directory in order to free space.

**Method C: Graphical User-Interface Mode – Installation Jobs That Are Submitted Automatically**

1. Download and save the hot fix to UNIX Systems Services directory of your choice.
2. Set your \$DISPLAY environment variable by submitting the following command:

```
prompt> export display=your-node-name:0
```

3. Execute the hot-fix package by submitting the following command:

```
prompt> ./hot-fixID.bin
```

In this command, hot-fixID specifies the hot-fix ID number (for example, A01001os.bin). When you execute the hot fix, the MIT is invoked automatically.

After you complete these steps, the hot-fix jobs are submitted automatically for execution.

**Method D: Graphical User-Interface Mode – Installation Jobs That Are Submitted Manually**

1. Download and save the hot fix to the UNIX Systems Services directory of your choice.
2. Set your \$DISPLAY environment variable by submitting the following command:

```
prompt> export DISPLAY=your-node-name:0
```

3. Execute the hot fix package by submitting the following command:

```
prompt> ./hot-fixID.bin --keep -- -nojobsubmit
```

4. After you manually submit all of the hot-fix jobs, relaunch the hot-fix binary file along with the –FINALIZEINSTALL option:

```
prompt> ./hot-fixID.bin -- -finalizeinstall
```

5. Use the MIT to apply the hot fix, per the instructions in "Using the Maintenance Installation Tool in the z/OS Operating Environment."

**Notes:**

- You can install only one hot fix at a time. Complete steps 1-3 above before you begin the installation of another hot fix.
- This particular method creates a temporary directory named XX\_V1 in your working directory in USS. After you verify the hot fix, you can remove this directory in order to free space.

**Caveats**

- Both methods B and D use the –NOJOBSUBMIT option. This option enables you to edit and submit batch jobs. You must use the –NOJOBSUBMIT option if any of the following conditions apply at your site:
  - your site uses job-entry subsystem 3 (JES3), not JES2
  - your FTP server is configured for JESINTERFACELEVEL=2
  - the SAS Installer ID is not authorized to use FTP



- you need to make site-specific changes to the job control language (JCL) or you want to review the JCL before submitting it
- the FTP JES interface job-name requirement (that is, that the job name should be the ID of the user that performs the installation plus a single letter or single-digit suffix) is incompatible with your site's job-name requirements
- If you perform the initial SAS 9.2 installation by using the `–NOJOBSUBMIT` option, you also need to use either Method B or Method D to successfully apply hot fixes. For details about an error that can occur if you do not use the `–NOJOBSUBMIT` option, see SAS Note 42460, "The `–NOJOBSUBMIT` option must be used when you install SAS® 9.2 hot fixes in the z/OS operating environment." (available at [support.sas.com/kb/42/460.html](http://support.sas.com/kb/42/460.html))
- Methods C and D require the use of an X11 server. If an X11 server is not available at your site, use the silent installation process (using the `–SILENT` option) that is illustrated in methods A and B in the section "For the z/OS Operating Environment."
- SAS hot fixes are installed into new data sets, after which you can promote them to your production libraries. Several new data sets are created during this process, including the following data sets:

```
&prefix.B80005.BAMISC
&prefix.B80005.CLIST
&prefix.B80005.CNTL
&prefix.B80005.CNTL.PREEDIT
&prefix.B80005.CNTL.UTILIB
&prefix.B80005.CONFIG
&prefix.B80005.DBCS.LIBRARY
&prefix.B80005.LIBRARY
&prefix.B80005.PROCLIB
&prefix.B80005.SASMSG
&prefix.B80005.SASRX
&prefix.B80005.SASRXCFG
&prefix.B80005.TKMVSENV
```

**Warning:** The data sets in blue, above, are created for testing purposes only. You **should not** promote these particular data sets to production unless you are instructed to do so by the installation instructions that are specific to the hot fix that is being installed. For additional details about promoting a hot fix, see the installation instructions that are specific to that hot fix.

## OpenVMS Operating Environment

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1. Download and save the hot fix to an OpenVMS directory of your choice.
2. You must set the `$DISPLAY` environment variable by submitting the following command:

```
set display/create/node=your-node-name/trans=tcPIP
```

3. Execute the hot-fix package by submitting the following command:

```
file-download-path/hot-fixID.exe
```

In this command, *hot-fix* specifies the actual hot-fix number and *ID* specifies a two-character code that represents the operating environment (for example, A04001vi.exe). When you execute the hot fix, the MIT is invoked automatically.

When you execute this command, the MIT is invoked automatically. During the installation, the system prompts you for the SASHOME location that you are updating. You should provide the path to the top-level SAS directory where the `deploymentreg` directory resides. The remaining MIT pages guide you through the installation process.

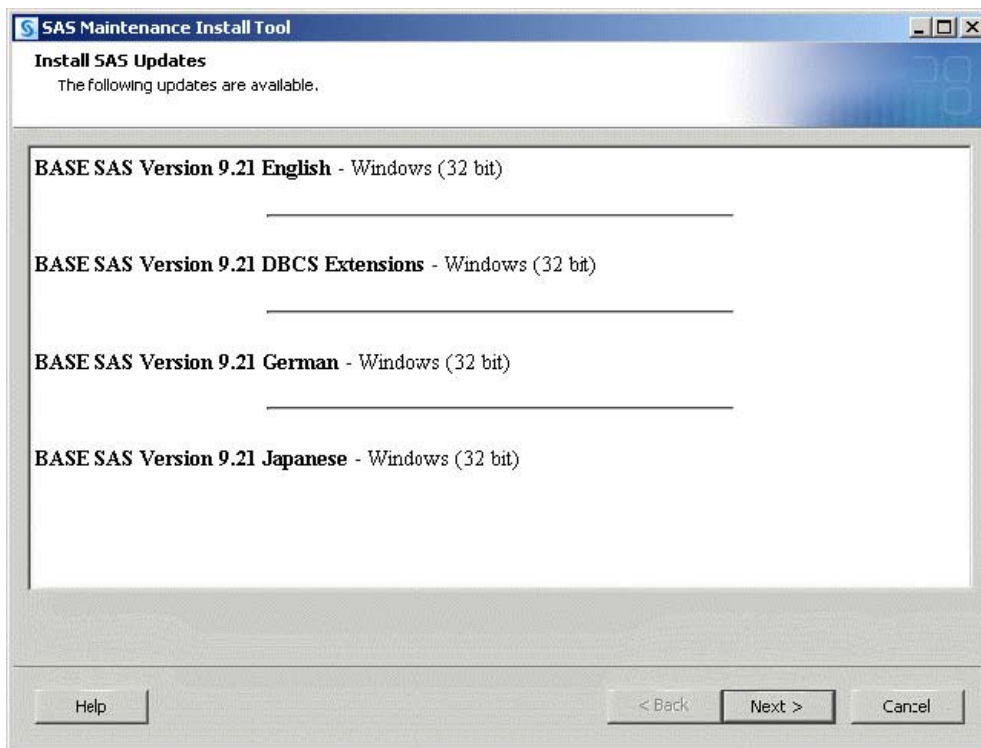
---

## Using the Maintenance Installation Tool in the Windows, UNIX, and OpenVMS Operating Environments

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This section illustrates the process of applying a hot fix by using the MIT tool under Windows, UNIX, or OpenVMS.

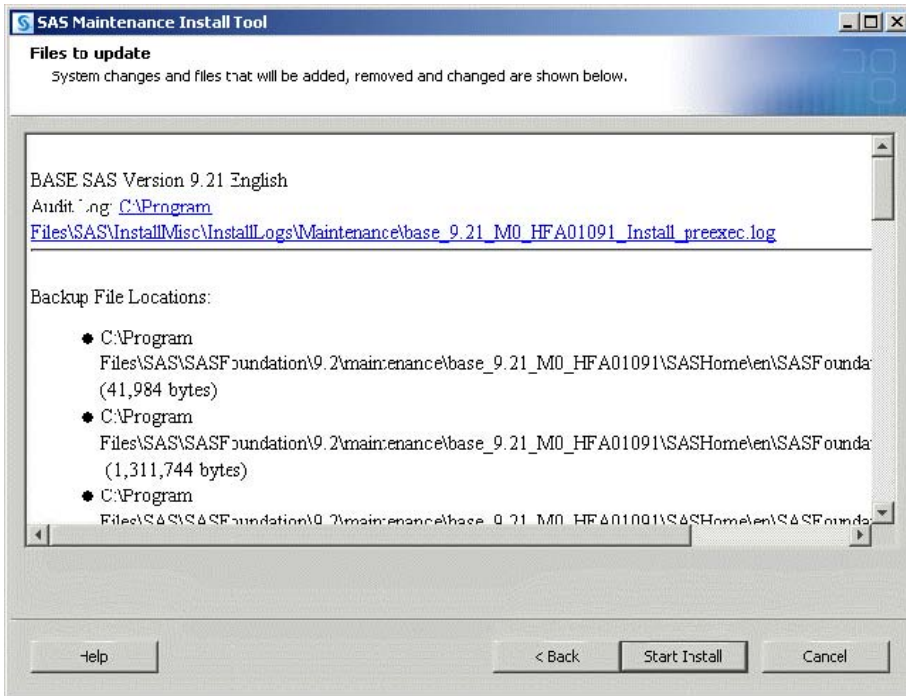
The first page that appears in the tool, the **Install SAS Updates** page, lists the specific updates that are available in the hot fix. If the hot-fix contains updates for multiple languages, those are also listed. For example, Display 1 shows language updates that are available for a Base SAS® 9.2 (TS2M0) software update. The MIT updates only those languages that you have installed in the SASHOME directory.



**Display 1. Available Updates for a Hot Fix**

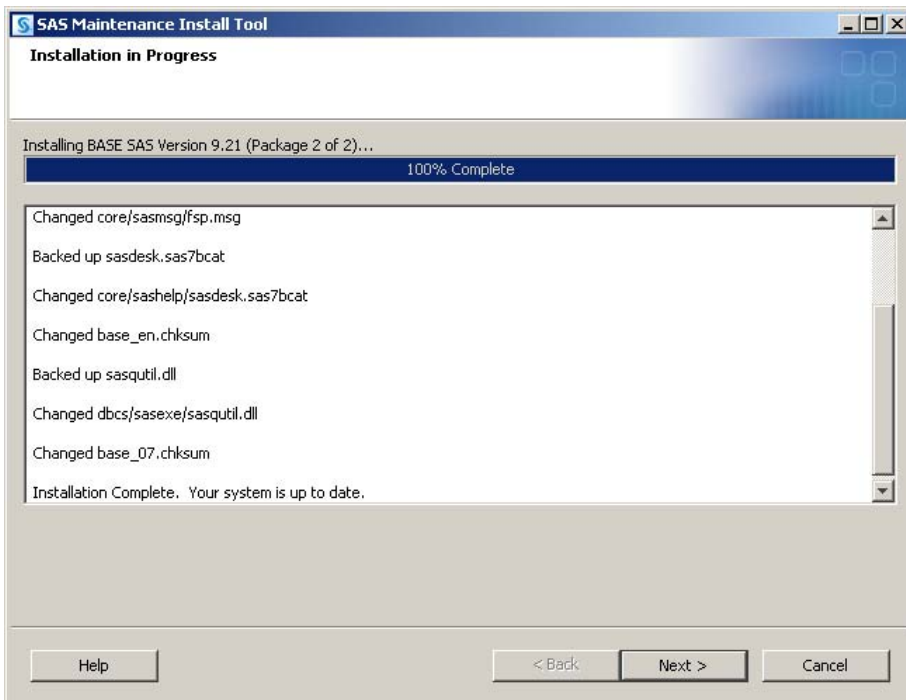
The following steps show you how to proceed with the application of the hot fix.

1. Click **Next** to move to the next page, **Files to update**. This page (Display 2) shows system changes as well as files that are to be added, removed, or changed during the application of the hot fix.



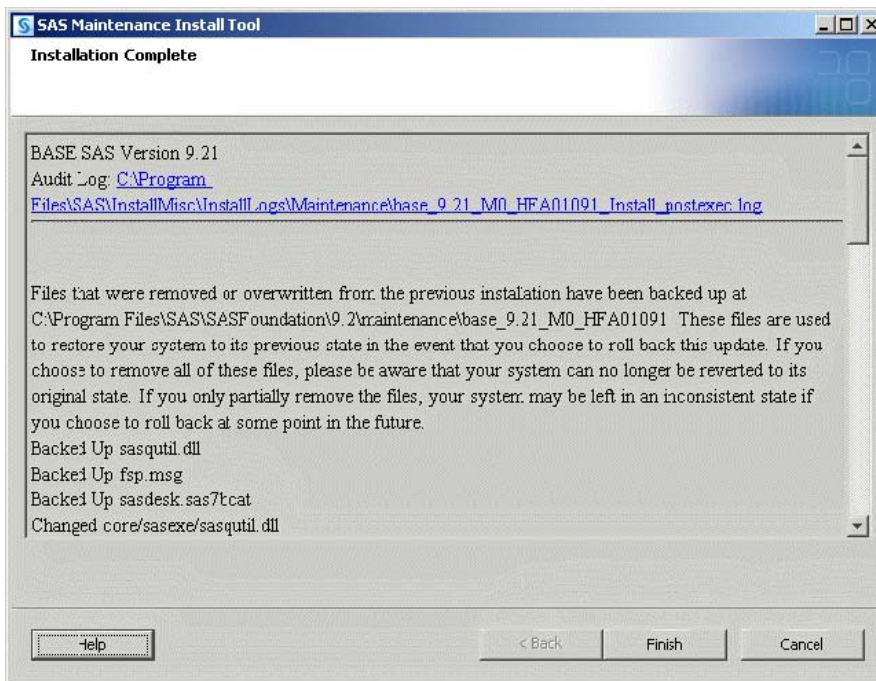
**Display 2. List of System Changes and Files That Will Be Updated**

2. Click the **Start Install** to begin the installation of the hot fix. As the installation progresses, the Installation in Progress page (Display 3) shows the status of the hot-fix changes that are being applied.



**Display 3. Installing the Hot Fix**

- Click **Next** to move to the **Installation Complete** page.



**Display 4. Completing the Installation**

The message that appears on the **Installation Complete** page shows the location of the MIT audit log, which provides details about the progression of the hot-fix installation. The page also provides the location of the files that are backed up automatically. The locations are host-dependent.

#### Under Windows:

Under Windows, the backed-up files are in one of the following locations:

- `!SASHOME\SASFoundation\release-number\maintenance\product-code_version_maintenance-version_HFhot-fixID\`

#### Sample Directory for Backed-Up Files

```
C:\Program Files\SAS\SASFoundation\9.2\maintenance\base_9.21_M3_HFB25001
```

- `!SASHOME\product-directory\release-number\maintenance\product-code_release-number_maintenance-version_HFhot-fixID\`

#### Sample Directory for Backed-Up Files

```
C:\Program Files\SAS\SASDeploymentTesterServer\1.3\maintenance\dproserver_1.3_M2_HFE18001
```

#### Under UNIX:

Under UNIX, the backed-up files are in one of the following locations:

- `!SASHOME/SASFoundation/release-number/maintenance/product-code_release-number_maintenance-version_HFhot-fixID/`

**Sample Directory for Backed-Up Files**

C:/Program Files/SAS/SASFoundation/9.2/maintenance/base\_9.21\_M3\_HFB25001

- *!SASHOME/product-directory/release-number/maintenance/product-code\_release-number\_maintenance-versions\_HFhot-fixID/*

**Sample Directory for Backed-Up Files**

C:/Program Files/SAS/SASDeploymentTesterServer/1.3/maintenance  
/dproserver\_1.3\_M2\_HFE18001

4. Click **Finish** to complete the installation.

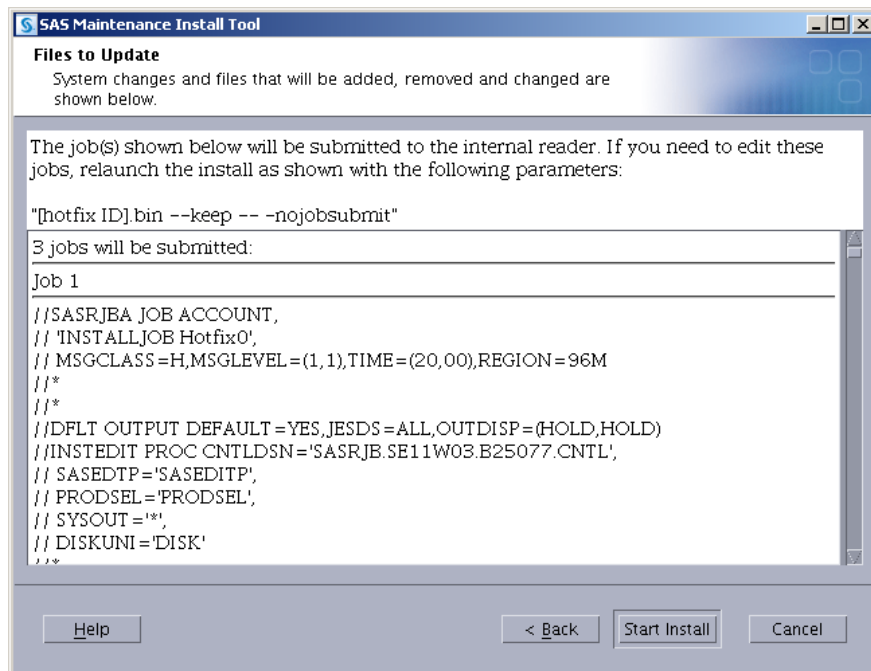
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## Using the Maintenance Installation Tool in the z/OS Operating Environment

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This section illustrates the process of applying a hot fix by using the MIT tool under z/OS. When you use Method C or Method D to install hot fixes under z/OS, a GUI interface is invoked that is similar to the MIT interface for Windows, UNIX, and OpenVMS. This interface guides you through the installation process.

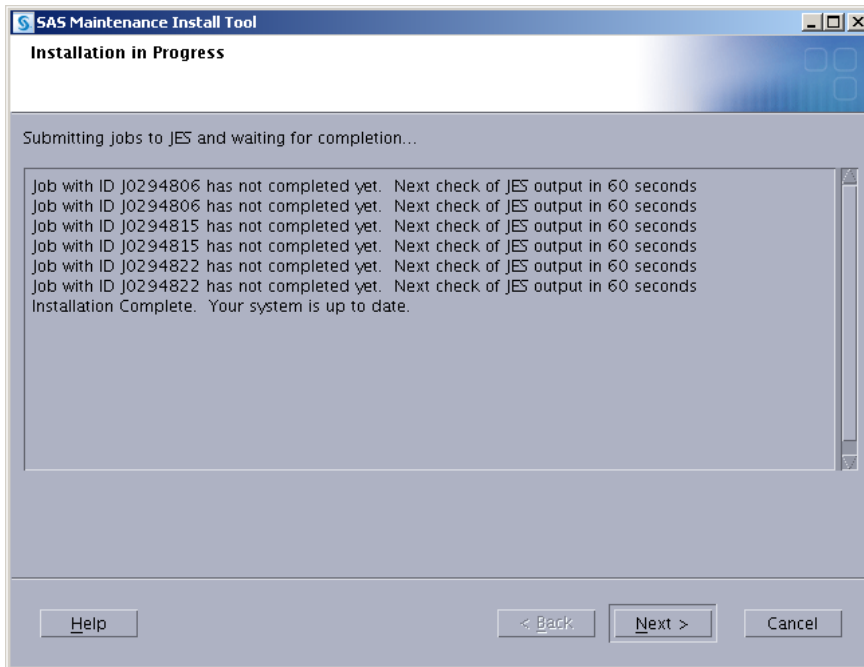
The first page that appears, **Files to Update** (Display 5), lists the specific hot-fix updates that are submitted to the mainframe.



**Display 5. Available Updates for a Hot Fix**

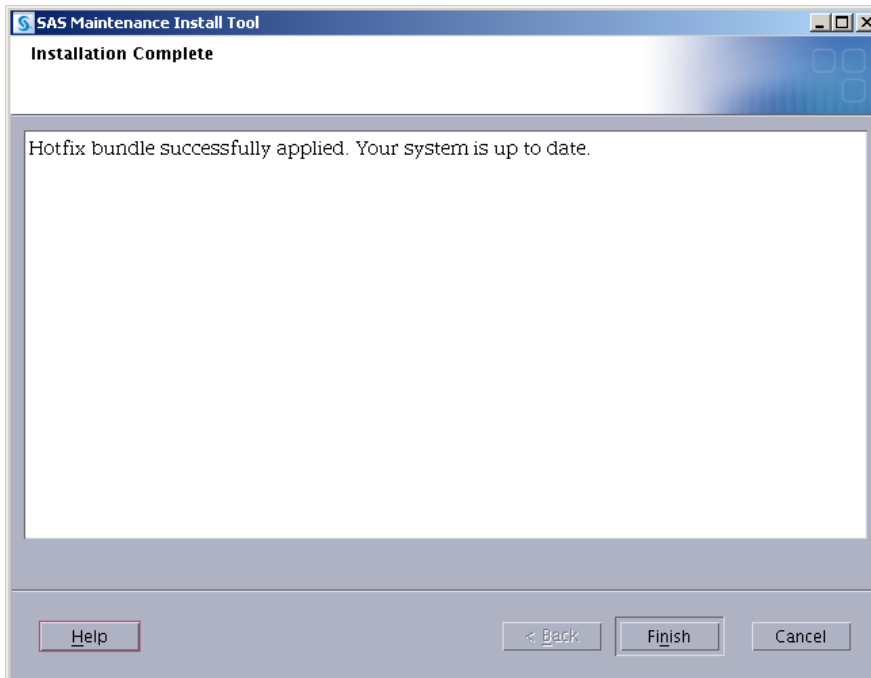
The following steps show you how to proceed with the application of the hot fix.

1. Click **Start Install** to begin the installation of the hot fix. As the installation progresses, the **Installation in Progress** page (Display 6) shows the status of the hot-fix jobs that are being applied.



Display 6. Installing the Hot Fix

2. Click **Next** to move to the **Installation Complete** page.



Display 7. Completing the Installation

When the hot fix is applied successfully, you receive a message in the text box on the **Installation Complete** page (as shown in Display 7). However, this page does not list a location for the MIT Audit log. The hot-fix installation log is created in the following location:

```
!SASHOME/InstallMisc/InstallLogs/Maintenance/MIT_date-and-time-stamp.log
```

#### Example

```
/usr/lpp/SAS92/InstallMisc/InstallLogs/Maintenance/MIT_2011-06-05-23.47.35.log
```

This log provides detailed information about the installation process.

**Note:** Each attempt to install a hot fix results in the creation of a new log file.

A pre-exec and a post-exec log are created during the hot-fix installation process. The pre-exec log is created before you install the updates in the hot fix. This log identifies the files in the hot fix that should be updated during the hot-fix installation. The post-exec log is created after the installation is completed. This log and identifies the files that are updated.

Both logs are written to the *!SASHOME/InstallMisc/InstallLogs/Maintenance* directory. The logs include the hot-fix ID number in the name of the file, as shown in the following examples:

- databuildata\_9.2\_M2\_HFC63001\_mvs\_xx\_Install\_postexec.log
- databuildata\_9.2\_M2\_HFC63001\_mvs\_xx\_Install\_preexec.log

The **Installation Complete** page also does not display the location where the files are backed up automatically. Only SAS files that are installed and updated in UNIX System Services are backed up. Those files are backed up to the following directory:

```
!SASHOME/product-directory/release-number/maintenance/product-code_release-number_maintenance-version_HFhot-fixID/
```

#### Example

```
/usr/lpp/SAS92/SASDeploymentTesterServer/1.3/maintenance/dproserver_1.3_M2_HFE18001
```

3. Click **Finish** to complete the installation.

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## Container Hot Fixes

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A *container hot fix* is used to deliver one or more individual hot fixes, known as *member hot fixes*, to multiple software components. For each member hot fix, a separate installation binary file is included in the container. The container installation must be executed on each machine in a deployment where at least one of the components that are to be updated is installed. The installer applies only those member hot fixes that are applicable to the software components that are installed on each machine, based on the SAS Deployment Registry.

The contents of a container hot fix are specific to an operating system. If the SAS components are installed across multiple operating systems, then you should download and install the hot-fix container for each operating system to the applicable machines.

The SAS Deployment Registry is updated to reflect member hot fixes that are applied successfully. References to container hot-fix ID numbers are not added to the SAS Deployment Registry.

Installation functionality for container hot fixes is not available under z/OS. Instead, member hot fixes are delivered in a container .zip file that must be extracted. Then the installer for each member hot fix must be executed individually per the instructions provided on the Hot Fixes and Downloads Web page ([support.sas.com/techsup/download/](http://support.sas.com/techsup/download/)).

For example, consider hot fix C80002 for the SAS middle tier. This container hot fix includes member hot fixes for the following components

Member Hot fix	SAS Component
B75002	SAS Web Infrastructure Platform
B88002	SAS Web Infrastructure Client
C32002	SAS Shared Services

Executing the C80002 installation binary file automatically executes the individual installers for the member hot fixes for those components that are installed on the machine where C80002 is executed. If the SAS components are installed on multiple machines, then you must execute C80002 on each of the machines.

For example, if the SAS Web Infrastructure Client is not installed on the machine where C80002 is executed, then member hot fix B88002 is not installed. You also must execute C80002 on the machine where SAS Web Infrastructure Client is installed in order to apply the B88002 member. When the member hot fixes B75002, B88002, and C32002 are installed successfully, the SAS Deployment Registry is updated to reflect that these three hot fixes have been applied. The container hot-fix ID number, C80002, is not referenced in the SAS Deployment Registry.

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## Silent Installation

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The MIT enables you to install hot fixes that run *silently* (in the background) under Windows and UNIX. After you download the hot-fix package, you initiate silent installation by invoking the self-extracting hot-fix package and using the -SILENT option. The following sections explain how to initiate silent installation based on operating environment.

### Windows Operating Environments

---

To invoke silent installation under Windows, submit the following command from a command line:

```
hot-fix_filename -silent
```

In this syntax, *hot-fix\_filename* specifies the location (path) to which you save the hot fix that you download from the Technical Support Hot Fixes Web page. For example, if you apply a hot fix that has been saved to a file named A02001wn.exe, then you submit the following command at a command prompt:

```
C:\temp> .\A02001wn.exe -silent
```

During a silent installation, the MIT parses the following file in order to set the default SASHOME location:

```
%ALLUSERSPROFILE%\Application Data\SAS\SASDeploymentWizard\9.2\sdwprefs.txt
```

Under all Windows environments except Vista, the default location for the sdwprefs.txt file is as follows:

```
C:\Documents and Settings\user-ID-that-performs-installation\Application Data
\SAS\SAS DeploymentWizard\9.2\sdwprefs.txt
```



Under Windows Vista, the default location is as follows:

```
C:\Users\user-ID-that-performs-installation\Application Data \SAS\SAS
DeploymentWizard\9.2\sdwprefs.txt
```

## UNIX Operating Environments

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To invoke silent installation under UNIX, submit the following command from a command line:

```
login> ./hot-fix_filename -silent -silent -sashome "SASHOME"
```

In this syntax, hot-fix\_filename specifies the location (path) to which you save the hot fix that you download from the Technical Support Hot Fixes Web page. SASHOME is the directory in which SAS 9.2 is installed. For example, if you apply a hot fix that is saved to a file named A02001r6.exe, then you submit the following command at a command prompt:

```
login> ./A02001r6.bin -silent -sashome "/usr/apps/sas92"
```

If you do not specify the –SASHOME option on the command line, the system prompts you to enter this value during the installation.

Another helpful command-line option that you might want to consider is –UNZIPDIR. This option extracts the contents of a self-extracting zip file into a different directory.

## z/OS Operating Environment

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For instructions about installing hot fixes silently under z/OS, see the sections "Method A: Line Mode – Installation Jobs That Are Submitted Automatically" and "Method B: Line Mode – Installation Jobs That Are Submitted Manually" earlier in this document.

## Frequently Asked Questions

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- [How do I know whether my hot-fix installation is successful?](#)
- [Is it possible to apply a hot fix multiple times on the same SAS image?](#)
- [How do I cancel a hot-fix installation?](#)
- [How can I determine which hot fixes have been applied to my system?](#)
- [How do I determine what version of the Maintenance Installation Tool I am running for applying hot fixes?](#)
- [How do I decipher the new hot-fix IDs?](#)

### How do I know whether my hot-fix installation is successful?

In the final dialog box of the installation (the Installation Complete dialog box), information is provided about the files that are successfully updated during an installation.

The MIT creates an installation log file (MIT\_date-and-time-stamp.log) in the following location:

```
!SASHOME\InstallMisc\InstallLogs\Maintenance\
```

This log provides detailed information about the installation process.

### Is it possible to apply a hot fix multiple times on the same SAS image?

After you apply a hot fix, it cannot be reapplied. If you attempt to reapply a hot fix, the MIT fails. See SAS Note 35780, "Attempts to re-apply SAS 9.2 hot fixes will fail." ([support.sas.com/kb/35/780.html](http://support.sas.com/kb/35/780.html))

### How do I cancel a hot-fix installation?

Use the **Cancel** button to cancel an installation. If the MIT is canceled through an acceptable means (for example, by clicking the **Cancel** button) rather than by terminating the process, you might receive the following message:

```
Installation could not be completed. No changes have been made to your system.
```

The MIT then restores the original content before any changes are made.

### How can I determine which hot fixes have been applied to my system?

For SAS 9.2, Phase 2 (TS2M0) and later, the installation of hot fixes is logged in the SAS Deployment Registry. A reporting utility named ViewRegistry (available in `sas.tools.viewregistry.jar`) processes the deployment registry and generates a report file named DeploymentRegistry.html. This report identifies all SAS 9.2 software that is installed in the current SASHOME location, including hot fixes.

For more information about the ViewRegistry utility, including details about how to access and execute the utility, see SAS Note 35968, "Using the ViewRegistry Report and other methods to determine the SAS 9.2 software releases and hot fixes that are installed." ([support.sas.com/kb/35/968.html](http://support.sas.com/kb/35/968.html))

### How do I determine what version of the Maintenance Installation Tool I am running for applying hot fixes?

The version number of the Maintenance Installation Tool appears in the Help dialog box that is available during the hat is available during the installation of a hot fix. For more details, see SAS Note 35955, "Determining the version of the Maintenance Installation Tool that is executed when you apply hot fixes." ([support.sas.com/kb/35/955.html](http://support.sas.com/kb/35/955.html))

### How do I decipher the new hot-fix ID numbers?

Beginning with SAS 9.2 Phase 2 (TS2M0), a new naming convention is being used to identify hot fixes. For details, see SAS Note 35960, "New hot-fix naming conventions for SAS 9.2, Phase 2 (TS2M0) and later." ([support.sas.com/kb/35/960.html](http://support.sas.com/kb/35/960.html))

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## Troubleshooting

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This section offers guidance on troubleshooting problems that you encounter when you use the MIT to apply hot fixes. This section covers the following topics:

- understanding the basic criteria of applying SAS 9.2 hot fixes with the Maintenance Installation Tool
- troubleshooting problems that occur during the application of a hot fix
- known problems and solutions

## Understanding the Basic Criteria for Applying SAS® 9.2 Hot Fixes with the Maintenance Installation Tool

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In order to apply a hot fix to SAS 9.2 software, the MIT first determines whether the software is installed in the operating environment. For a successful hot-fix application, the product name, product release, and maintenance level for the installed SAS 9.2 software must match that of the hot fix that is to be applied. If values for all three criteria do not match, the hot fix is not applied.

Hot fixes might not be applied for other reasons as well. The following sections address those reasons and offer solutions.

## Troubleshooting Problems That Occur During the Application of a Hot Fix

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When you encounter a problem during hot-fix installation, the first step is to ensure that you have done the following:

1. Apply the hot fix using the same ID as the one that you used to install SAS.
2. Set the \$DISPLAY environment variable under UNIX and OpenVMS.
3. Under OpenVMS, use a privileged account that has the BYPASS privilege enabled.
4. Apply the hot fix to the appropriate product release and maintenance level for which the hot fix is intended.
5. If you have multiple SAS installations or multiple editions of SAS installed, point to the appropriate SASHOME location when the tool prompts you.
6. Apply the hot fix on the operating system for which it is intended.
7. Follow the installation instructions that are documented for your hot fix.
8. Verify that the software for which the hot fix is intended is installed.

For issues that cannot be addressed by verifying these steps, perform the following troubleshooting steps and review the known issues and solutions in the next section:

1. Run a report against your deployment registry to determine which software releases and hot fixes are installed on your system. For instructions on creating this report, see SAS Note 35968, "Using the ViewRegistry Report and other methods to determine the SAS 9.2 software releases and hot fixes that are installed." ([support.sas.com/kb/35/968.html](http://support.sas.com/kb/35/968.html))
2. Review the report that is generated in step 1 and compare the software that you want to update to the information that is provided on the Hot Fixes and Downloads page. ([support.sas.com/techsup/download/](http://support.sas.com/techsup/download/)) In order for the hot fix to apply properly, the product name, release, and maintenance level for the hot fix must match that of your installed software.
3. If the name, release, and maintenance level all match between your installation and the hot-fix download information, review the known issues below to determine whether your issue can be resolved.

## Known Problems and Solutions

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This section describes the following, known problems that can occur when you try to apply a hot fix. Solutions are provided for each of these problems.

- I received the error **Windows has found a problem with this file.**
- The prompt message **Please enter your SAS Home** occurs continuously when you apply a hot fix under UNIX.
- The error message **cannot execute binary file** appears when you apply a hot fix under UNIX.
- The error **cannot execute** appears when you apply a hot fix under UNIX.
- The message **The installation package could not be initialized. . .** appears when you apply a hot fix under UNIX.
- The correct software component and installed release are confirmed, but the message **package is not applicable. . .product cannot be found...** is generated when you apply a hot fix.
- When you apply a hot fix, you receive the message **No changes need to be made. Your system is up to date.**
- Applying a hot fix in any operating environment generates the error **An error has been encountered that cannot be corrected.**
- Under OpenVMS, after you submit the RUN command followed by the hot-fix ID, the system prompt is returned without MIT launching and with no indication of an error.
- Behavior differs among operating environments when you try to apply a SAS 9.2 hot fix to an incorrect release of SAS.
- Under z/OS, installation is unsuccessful when you try to install multiple hot fixes in one pass.
- Under z/OS, the installation process times-out if hot-fix installation jobs that submitted to the mainframe do not complete within 30 minutes.
- Under z/OS, an error occurs if you try to apply a hot fix without the -NOJOBSSUBMIT option on a SAS installation that was initially installed with the -NOJOBSSUBMIT option.
- Under z/OS, extraneous messages appear when you install hot fixes that contain updated language content.
- Under z/OS, hot fixes that contain SASMSG modules do not create correct CLIST and PROC data sets for languages other than English.

**I received the error Windows has found a problem with this file.**

Hot fixes cannot be installed directly from the download page. You must save the hot fix to the disk and install it from that location. For more details, see SAS Note 37104, "SAS 9.2 hot fixes cannot be installed directly from the hot-fix download page." ([support.sas.com/kb/37/104.html](http://support.sas.com/kb/37/104.html))

**The prompt message Please enter your SAS Home occurs continuously when you apply a hot fix under UNIX.**

This behavior is an indication that the SASHOME location that you entered is not valid. Either the SASHOME location that you entered does not exist or the location points to a prior release of SAS (for example, SAS 9.1.3). Be sure to enter a valid SASHOME path.

**The error message cannot execute binary file appears when you apply a hot fix under UNIX.**

This error is a likely indication that you are attempting to run the hot fix in an incorrect operating environment. Make sure that you have the correct hot fix for your environment.

**The error cannot execute appears when you apply a hot fix under UNIX.**

This error indicates that the hot fix does not have Execute privilege. Set this privilege by submitting the following command from a command prompt:

```
chmod +x hot-fix_filename
```

In this example, *hot-fix\_filename* specifies a hot-fix filename similar to A01001s6.bin .

**The following message appears when you apply a hot fix under UNIX:**

**The installation package could not be initialized for the following reason:**

**Failure creating backup directory at {0}.**

**Installation could not be completed. No changes have been made to your system.  
More information may be found in the Installation Log:  
null**

This message indicates one of three situations:

- The software for which the hot fix is intended is not installed in the operating environment.
- The hot-fix installation is being attempted in an incorrect operating environment.
- The deployment registry is corrupt.

For solutions to these situations, see SAS Note 39122, "Messages that you might encounter when hot fixes cannot be installed with the Maintenance Installation Tool." ([support.sas.com/kb/39/122.html](http://support.sas.com/kb/39/122.html))

**The correct software component and installed release are confirmed, but the following message continues to be generated when you apply a hot fix:**

**Either this package is not applicable for the current platform, or this product cannot be found on your system, so the updates contained in this bundle will not be installed.**

This problem happens in two different situations. The first situation can occur in any operating environment while the second situation occurs only under Windows.

- Software product or component codes might be added to the SAS Deployment Registry even if those particular applications are not installed. When this happens, a value of `null` appears in the **Display Name** text box for these entries in the SAS Deployment ViewRegistry report. See SAS Note 35968, "Using the ViewRegistry Report and other methods to determine the SAS 9.2 software releases and hot fixes that are installed." ([support.sas.com/kb/35/968.html](http://support.sas.com/kb/35/968.html)) Attempts to apply hot fixes for these products or components fail, and the message above is generated.
- For details about how to solve this problem, see SAS Note 42548, "SAS Deployment Registry incorrectly updated by invalid hot fix installation attempts." ([support.sas.com/kb/42/548.html](http://support.sas.com/kb/42/548.html))
- Under Windows, this problem can occur for almost any hot fix if the initial SAS installation is performed by using the `-FORCEINSTALL` option. For details and a solution, see SAS Note 36490, "Applying hot fixes might cause an error when you use the `-forceinstall` option during a SAS 9.2 installation." ([support.sas.com/kb/36/490.html](http://support.sas.com/kb/36/490.html))

**The following message appears when you apply a hot fix:**

**No changes need to be made. Your system is up to date.**

This message appears in two situations:

- The hot fix has already been applied. In this case, the following, additional message also appears:

```
This update has already been applied. This update cannot be uninstalled.
```

This situation is documented in SAS Note 35780, "Attempts to re-apply SAS 9.2 hot fixes will fail." ([support.sas.com/kb/35/780.html](http://support.sas.com/kb/35/780.html))

- The SAS software is installed from a SAS Software Depot via the SAS® Download Manager, and the dates of certain files are not preserved. For more details about this situation and the appropriate resolution, see SAS Note 36701, "Attempts to apply hot fixes fail with the error "No changes need to be made. Your system is up to date." ([support.sas.com/kb/36/701.html](http://support.sas.com/kb/36/701.html))

**Applying a hot fix in any operating environment generates the following error:**

```
An error has been encountered that cannot be corrected
```

```
The details of the error are shown below.
```

```
Error extracting file entry <filename> from zip
```

```
As soon as you click the 'OK' button, we will begin rolling back all changes made by the installer so far so that your system is not left in an inconsistent state. Please do not quit the application before the rollback is complete.
```

This error occurs when a SAS process runs simultaneously with the application of a hot fix. To determine the true cause of the error, you need to review the MIT log that is associated with the hot-fix. These MIT logs are available in the following locations:

- Under UNIX: **!SASHOME/InstallMisc/InstallLogs/Maintenance**
- Under Windows: **!SASHOME/InstallMisc/InstallLogs/Maintenance**

You should review the MIT log that has a date-and-time stamp that corresponds to the time that your hot fix was applied.

The log message for the MIT error is similar to the *following* example:

```
[ 30616] MITController : An error occurred during processing:
[ 30616] MITController : There is a problem with the package being installed:
Error extracting file entry snamva/cmacros/sasmacr.sas7bcac from zip
[ 30616] MITController : com.sas.tools.maint.mit.InstallException: Error
extracting file entry snamva/cmacros/sasmacr.sas7bcac from zip

. . .more log statements. . .
```

(message continues)

```
Caused by: com.sas.tools.maint.mit.InstallException: Failure moving C:\Program
Files\SAS\SASFoundation\9.2\snamva\cmacros\sasmacr.sas7bcat to destination
C:\Program
Files\SAS\SASFoundation\9.2\maintenance\snamva_2.1_M0_HFB13001\SASHome\en\SASFounda
tion\9.2\snamva\cmacros\sasmacr.sas7bcat
```

In the example log above, the failure occurs because SAS is run simultaneously with the application of the hot fix. Therefore, the system cannot create a backup of the sasmacr.sas7bcat hot-fix file. The installer does not extract the new copy and overwrite the file until a successful backup occurs.

To avoid this problem, make sure that you do not run SAS sessions concurrently with the application of a hot fix.

**Under OpenVMS, after you submit the RUN command with the hot-fix ID, the system prompt is returned without launching MIT and with no indication of an error.**

The problem results when privileges are not set properly. Applying a hot fix requires the use of a privileged account. To work around this issue, submit the following command:

```
$ set process/privilege=bypass
```

For more details, see SAS Note 36028, "SAS® 9.2 hot fix installation fails on OpenVMS for HP Integrity due to insufficient privileges." ([support.sas.com/kb/36/028.html](http://support.sas.com/kb/36/028.html))

**A hot-fix installation fails when you try to apply a SAS 9.2 hot fix to an incorrect release of SAS. When this problem happens, different errors can occur, dependent on operating environment.**

Make sure that you apply the hot fix to the release of SAS that you have installed. For details about the types of problems that can occur, see SAS Note 36026, "Attempting to apply a SAS 9.2 hot fix to an incorrect release of SAS will result in erratic behavior." ([support.sas.com/kb/36/026.html](http://support.sas.com/kb/36/026.html))

**Under z/OS, installation is unsuccessful when you try to install multiple hot fixes in one pass.**

Installation fails if you run the installation binary file for multiple hot fixes and then you try to submit the jobs manually for each of the hot fixes. You can install only one hot fix at a time. When you install a hot fix and you use the -NOJOBSUBMIT option, you must perform the following steps:

1. Install the hot fix.
2. Submit the installation jobs manually.
3. Execute the -FINALIZEINSTALL step.

**Under z/OS, the installation process times out if hot-fix installation jobs that are submitted to the mainframe do not complete within thirty minutes.**

If you use the method described in “Method C: Graphical User Interface Mode – Installation Jobs Submitted Automatically,” your installation process times out if the hot-fix installation jobs that you submit to the mainframe do not complete within 30 minutes. In addition, an error similar to the following is generated:

```
The following exception was thrown outside of package processing. Installation
halted

An error occurred during processing:
java.lang.reflect.InvocationTargetException
    at sun.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
    at
sun.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.java:79)
    at
sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:4
3)
    at java.lang.reflect.Method.invoke(Method.java:618)
    at com.sas.tools.maint.mit.ExecutionThread.run(ExecutionThread.java:92)
Caused by: com.sas.tools.maint.mit.InstallException: Job J0027073 did not complete.
It remains on the JES queue
    at
com.sas.tools.maint.mit.tasks.AssembleMVSJobcode.submitJob(AssembleMVSJobcode.java:
1344)
    at
com.sas.tools.maint.mit.tasks.AssembleMVSJobcode.submitJobs(AssembleMVSJobcode.java
:780)
    . . . more log statements. . .
Caused by:
Job J0027073 did not complete. It remains on the JES queue
com.sas.tools.maint.mit.InstallException: Job J0027073 did not complete. It
remains on the JES queue
    at
com.sas.tools.maint.mit.tasks.AssembleMVSJobcode.submitJob(AssembleMVSJobcode.java:
1344)
    at
com.sas.tools.maint.mit.tasks.AssembleMVSJobcode.submitJobs(AssembleMVSJobcode.java
:780)
    at sun.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
    at
sun.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.java:79)
    at
sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:4
3)
    at java.lang.reflect.Method.invoke(Method.java:618)
    at com.sas.tools.maint.mit.ExecutionThread.run(ExecutionThread.java:92)
```

Currently, you cannot extend the time-out value for completion of a mainframe job. To avoid this problem, remove the hot-fix data sets that are created and try again.



**Under z/OS, an error occurs if you try to apply a hot fix without the –NOJOBSUBMIT option on a SAS installation that was initially installed with the –NOJOBSUBMIT option.**

For instructions about using the –NOJOBSUBMIT option to apply hot fixes, see the following sections in this document:

- "Method B: Line Mode – Installation Jobs That Are Submitted Automatically"
- "Method D: Graphical User Interface Mode – Installation Jobs That Are Submitted Manually"

See also SAS Note 42460, "The –nojjobs submit option must be used when you install SAS 9.2 hot fixes in the z/OS operating environment." ([support.sas.com/kb/42/460.html](http://support.sas.com/kb/42/460.html))

**Under z/OS, extraneous messages appear when you install hot fixes that contain updated language content.**

When the installation is invoked, you might see repetitive messages similar to the following.

```
beginning install of Base SAS
beginning install of Base SAS
beginning install of Base SAS
. . .more beginning statements. . .
The installation jobs have been written to members
Hotfix0
Hotfix1
Hotfix2
in <HLQ>.A50906.CNTL. These jobs should be submitted in sequence.
Then launch your hot fix package with the -finalizeinstall parameter:
<hotfixid>.bin -- -finalizeinstall
Install completed without errors for A50906
The installation jobs have been written to members
Hotfix0
Hotfix1
Hotfix2
in <HLQ>.A50906.CNTL. These jobs should be submitted in sequence.
Then launch your hot fix package with the -finalizeinstall parameter:
<hotfixid>.bin -- -finalizeinstall
Install completed without errors for A50906
The installation jobs have been written to members
Hotfix0
Hotfix1
Hotfix2
in <HLQ>.A50906.CNTL. These jobs should be submitted in sequence.
Then launch your hot fix package with the -finalizeinstall parameter:
```

The amount of repetition varies, depending on the number of languages that the hot fix is updating.

Then, during the final stage of the installation, you are notified that the language content that is included in the hot fix was not installed. These messages also vary, depending on the number of languages that are to be updated by and the encoding that is used for your SAS installation. The messages are similar to the following:

```
The other hot fixes in this bundle did not apply to your system:
<hotfixid>: WU is not installed thus the maintenance for WU will not be applied.
<br>
```

*(message continues)*

```

<hotfixid>: WB is not installed thus the maintenance for WB will not be applied.
<br>
<hotfixid>: WA is not installed thus the maintenance for WA will not be applied.
<br>
<hotfixid>: W9 is not installed thus the maintenance for W9 will not be applied.
<br>
<hotfixid>: W8 is not installed thus the maintenance for W8 will not be applied.
<br>
<hotfixid>: W7 is not installed thus the maintenance for W7 will not be applied.
<br>
<hotfixid>: W6 is not installed thus the maintenance for W6 will not be applied.
<br>
<hotfixid>: W5 is not installed thus the maintenance for W5 will not be applied.
<br>
<hotfixid>: W3 is not installed thus the maintenance for W3 will not be applied.
<br>
<hotfixid>: R0 is not installed thus the maintenance for R0 will not be applied.
<br>
<hotfixid>: F0 is not installed thus the maintenance for F0 will not be applied.
<br>
<hotfixid>: C0 is not installed thus the maintenance for C0 will not be applied.
<br>

```

These messages are not an indication of any failure on behalf of the hot-fix installation. You can ignore these messages.

**Under z/OS, hot fixes that contain SASMSG modules do not create correct CLIST and PROC data steps for languages other than English.**

To solve this problem, see SAS Note 41892, "SAS 9.2 Hot fixes that contain SASMSG modules on z/OS do not create CLISTs and PROCs for Non-English Language." ([support.sas.com/kb/41/892.html](http://support.sas.com/kb/41/892.html))

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## When to Contact SAS Technical Support

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If you are unable to resolve the issue with your hot-fix installation using the information in the previous sections, you should then contact SAS Technical Support ([support.sas.com/ctx/supportform/createForm](http://support.sas.com/ctx/supportform/createForm)). In order for Technical Support to assist you, you need to provide the following information:

- the ID for the hot fix you are applying.
- your operating environment. (**Note:** For UNIX environments, submit the command `uname -a` to obtain complete information for your environment.)
- your SAS Deployment Registry report (see step 1 in "TroubleShooting Problems That Occur During the Application of a Hot Fix" ).
- log information for the attempted install. Your log is located in `!SASHOME/InstallMisc/InstallLogs/Maintenance/MIT_date-and-time-stamp.log`

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## Recommended Reading

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SAS Institute Inc. 2011. SAS Note 42460, "The -NOJOBSUBMIT option must be used when you install SAS® 9.2 hot fixes in the z/OS operating environment." Cary, NC: SAS Institute Inc. Available at [support.sas.com/kb/42/460.html](http://support.sas.com/kb/42/460.html).

SAS Institute Inc. 2011. SAS Note 42548, "SAS Deployment Registry incorrectly updated by invalid hot fix installation attempts." Cary, NC: SAS Institute Inc. Available at [support.sas.com/kb/42/548.html](http://support.sas.com/kb/42/548.html).

SAS Institute Inc. 2011. SAS Note 41892, "SAS 9.2 Hot fixes that contain SASMSG modules on z/OS do not create CLISTs and PROCs for Non-English Language." Cary, NC: SAS Institute Inc. Available at [support.sas.com/kb/41/892.html](http://support.sas.com/kb/41/892.html).

SAS Institute Inc. 2011. SAS Note 40371, "Instructions for applying a hot fix to a SAS Software Depot for Client Users in SAS 9.2®." Cary, NC: SAS Institute Inc. Available at [support.sas.com/kb/40/371.html](http://support.sas.com/kb/40/371.html).

SAS Institute Inc. 2010. SAS Note 39122, "Messages that you might encounter when hot fixes cannot be installed with the Maintenance Installation Tool." Cary, NC: SAS Institute Inc. Available at [support.sas.com/kb/39/122.html](http://support.sas.com/kb/39/122.html).

SAS Institute Inc. 2009. SAS Note 37104, "SAS 9.2 hot fixes cannot be installed directly from the hot-fix download page." Cary, NC: SAS Institute Inc. Available at [support.sas.com/kb/37/104.html](http://support.sas.com/kb/37/104.html).

SAS Institute Inc. 2009. SAS Note 36701, "Attempts to apply hot fixes fail with the error 'No changes need to be made. Your system is up to date.'" Cary, NC: SAS Institute Inc. Available at [support.sas.com/kb/36/701.html](http://support.sas.com/kb/36/701.html).

SAS Institute Inc. 2009. SAS Note 36490, "Applying hot fixes might cause an error when you use the -forceinstall option during a SAS® 9.2 installation." Cary, NC: SAS Institute Inc. Available at [support.sas.com/kb/36/490.html](http://support.sas.com/kb/36/490.html).

SAS Institute Inc. 2009. SAS Note 36028, "SAS® 9.2 hot fix installation fails on OpenVMS for HP Integrity due to insufficient privileges." Cary, NC: SAS Institute Inc. Available at [support.sas.com/kb/36/028.html](http://support.sas.com/kb/36/028.html).

SAS Institute Inc. 2009. SAS Note 36026, "Attempting to apply a SAS® 9.2 hot fix to an incorrect release of SAS will result in erratic behavior." Cary, NC: SAS Institute Inc. Available at [support.sas.com/kb/36/026.html](http://support.sas.com/kb/36/026.html).

SAS Institute Inc. 2009. SAS Note 35968, "Using the ViewRegistry Report and other methods to determine the SAS® 9.2 software releases and hot fixes that are installed." Cary, NC: SAS Institute Inc. Available at [support.sas.com/kb/35/968.html](http://support.sas.com/kb/35/968.html).

SAS Institute Inc. 2009. SAS Note 35960, "New hot-fix naming conventions for SAS® 9.2, Phase 2 (TS2M0) and later." Cary, NC: SAS Institute Inc. Available at [support.sas.com/kb/35/960.html](http://support.sas.com/kb/35/960.html).

SAS Institute Inc. 2009. SAS Note 35955, "Determining the version of the Maintenance Installation Tool that is executed when you apply hot fixes." Cary, NC: SAS Institute Inc. Available at [support.sas.com/kb/35/955.html](http://support.sas.com/kb/35/955.html).

SAS Institute Inc. 2009. SAS Note 35780, "Attempts to re-apply SAS 9.2 hot fixes will fail." Cary, NC: SAS Institute Inc. Available at [support.sas.com/kb/35/780.html](http://support.sas.com/kb/35/780.html).

