Release Notes for SAS® Fraud Management 6.1_M0, Hot Fix 10

Description	Component	Summary and Business Impact	Test Scenario
The HTML Commons component in SAS® 9.4 Web Infrastructure Platform contains a cross-site scripting vulnerability.	SECURITY	**Summary:** The HTML Commons component in SAS 9.4 Web Infrastructure Platform contains a cross-site scripting vulnerability. Please refer to SAS Note 69136. **Business Impact:** A user might unknowingly execute malicious code.	After you apply the hot fix, the security issue in the HTML Commons component is resolved.
The OnDemand Decision Engine connectors are disabled when the Multi-Entity History database is unavailable.	ENGINE	**Summary:** After a Multi-Entity History (MEH) database outage, the OnDemand Decision Engine disables the connectors. When the MEH becomes available, the connectors are not recovered and incoming transaction processing does not resume. The OnDemand Decision Engine requires a restart to begin processing transactions. **Business Impact:** Transaction processing does not automatically resume after an MEH database outage. Fraudulent transactions might be undetected during this outage.	After you apply the hot fix, a new property is available. The new property name is config.closeSocketOnReconnectFailure. If you add the property to the ose.xml file and set it to `false`, the input socket remains open after an MEH failure. The OnDemand Decision Engine does not require a restart to resume transaction processing. If you do not add the property to the ose.xml file or set the property value to `true`, the connectors are disabled when the MEH becomes unavailable. The OnDemand Decision Engine requires a restart to resume transaction processing. This behavior is the current and default behavior.

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Blank client input variables and user variables are displayed incorrectly on the Alert details page.	ENGINE	**Summary:** When using SAS® Business Orchestration Services, if a client input variable is defined but not mapped, the transaction sent to the OnDemand Decision Engine contains invalid characters for that field. The characters are displayed on the Alert page if the field is included in the transaction grid. For example, the blank variable value is displayed similar to the following: ���������� The same issue occurs when a Java program uses the sas.finance.fraud.transaction.jar file to create transactions to send to the OnDemand Decision Engine. User variables are also impacted. **Business Impact:** In the transaction grid on the alert detail screen, invalid characters are displayed for blank client input variables and user variable values.	After you apply the hot fix, client input variables and user variables that are not set to a value in the transaction are displayed correctly on the Alert page.
You cannot sort the lookup list field values in descending order.	RULES STUDIO	**Summary:** In SAS Fraud Management version 4.3, if you click the column name in the list of active lookup lists, the field values are sorted in ascending order. If you click the column name a second time, the values are sorted in descending order. In later versions of SAS Fraud Management including version 6.1, you cannot sort the values in descending order, only ascending order. **Business Impact:** The impact of this issue is low. The field values can all be sorted in ascending order, which can help locate a specific field value.	After you apply the hot fix, the lookup list field values can be sorted in ascending or descending order.

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The guided rules query used by the Transaction Analysis Server is slow.	TAS	**Summary:** On DB2 and Oracle systems, the query used by guided rules to retrieve transactions from the Transaction Data Repository (TDR) does not include the partition key column. This behavior results in slow performance on large tables in the TDR. **Business Impact:** Table scans on large transaction tables can lead to excessive reads in DB2 and Oracle databases. These excessive reads impact performance of the guided rules query that retrieves the related transactions.	After you apply the hot fix, the guided rules query can use partition elimination on partitioned tables in both DB2 and Oracle. Query performance should improve for large transaction tables.
Rule deployment fails with an IndexOutOfBoundsException error.	RULES STUDIO	**Summary:** After you delete a user variable segment, it might still be included in the message API file when deploying a new rules file. This behavior is incorrect and causes an IndexOutOfBoundsException error. **Business Impact:** A new rule file cannot be deployed, limiting the ability to promote rules into production.	After you apply the hot fix, deleted user variable segments are not included in the message API file and rule deployment is successful.
An application error is reported after a rule deployment.	RULES STUDIO	**Summary:** If you manually adjust the next build to be a lower value than the latest build number, an error is reported when a new rules file is deployed. The new build package is created successfully, but the following error is displayed at the bottom of the web page: `An unexpected error has occurred in the application. Click Resume to continue working. If the problem`	After you apply the hot fix, the rule deployment is successful, and no application error occurs.

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		persists, please contact an administrator.
		
		The error in the web application log is:
		
		`06-29 12:52:46,289 ERROR InsertTag ServletException in '/rules/deploymentDetailContent.jsp ': Problems calling function`
		
		`…`
		
		`Caused by: java.lang.NullPointerException`
		
		Business Impact: When this error condition occurs, users might be unsure whether the rule deployment was successful. This lack of certainty impacts the ability to deploy new rules into production.	

Running many concurrent rule estimations can use too much Java heap memory.	ESTIMATION	**Summary:** The processing that occurs before the calendar window for a new estimation can use a significant amount of heap memory. When multiple concurrent estimations are created, the Java heap memory can be exhausted. The web application server requires a restart to recover. **Business Impact:** If concurrent rule estimations exhaust the Java heap, the web application will be unresponsive. The web application server will require a restart.	After you apply the hot fix, there are two new properties that can decrease the memory used by estimations. The new properties are not visible on the **Preferences** tab in the web application. You can execute SQL against the FCM_PROPERTY table to change the values. Changes take effect after a restart of the web application. • estimation_prep_bypass_weak_dependencies: Specifies whether weak dependencies should be checked when determining transaction availability for estimations. The default value is **false**. Changing the value to **true** can lower the memory requirements for an estimation.

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			• estimation_prep_bypass_strong_dependencies: Specifies whether strong dependencies should be checked when determining transaction availability for estimations. The default value is `false`. Changing the value to `true` can lower the memory requirements for an estimation.
Listing the rules in the **Production** folder creates threads that are not closed.	RULES STUDIO	**Summary:** Each time you click the **Production** folder to list the rules, a new thread is created for a Java Management Extension (JMX) call to the OnDemand Decision Engine. The thread is not closed when the call is complete. The thread names start with 'JMX client heartbeat' followed by a sequential number. **Business Impact:** With repeated display of the **Production** folder, the number of open threads continually increases. This behavior uses more resources than necessary and might have a noticeable impact on system resource utilization over time.	After you apply the hot fix, the threads created for the JMX calls on the **Production** folder are closed after their work is done.
After you type a new estimation name, select rules, and click the **Next** button, no busy indicator is displayed.	ESTIMATION	**Summary:** No busy indicator is displayed after you enter a new estimation name, select rules and click the **Next** button. Also, all buttons are not disabled, which allows you to click them again. **Business Impact:** The impact is low. The user does not get immediate visual feedback from the web page that a button click has occurred.	After you apply the hot fix, when you click the **Next** button in the initial window to create a new estimation, a busy indicator is displayed. The buttons are disabled, which prevents you from clicking them again.

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The submission of a rule estimation is slow.	ESTIMATION	**Summary:** When you click the **Run** button to submit a new rule estimation, the performance is slow. **Business Impact:** Rule writer productivity might be impacted by slowness in estimation submission.	After you apply the hot fix, the performance of estimation submission is improved. Also, a new informational message notifies you when the estimation submission step has occurred. The message states: '`Create estimation request submitted`'. It is displayed in the status area above the list of estimations.
The **Force recalculation** check box is not selected by default for rule estimation.	ESTIMATION	**Summary:** When rules refer to user variables, you can force the estimation to recalculate the variable values by selecting the **Force recalculation** checkbox. The option is not selected by default. There should be a way to select the **Force recalculation** option by default for all estimations. **Business Impact:** If users want to force recalculation of user variables for all estimations, it is inconvenient for users to select the check box manually every time an estimation is submitted.	After you apply the hot fix, a new property controls whether the **Force recalculation** option is selected by default. The property name is estimation_enable_force_calculation. The default value is **false**, which displays the check box as not selected. Set the property to **true** to select the **Force recalculation** check box by default. The new property is not visible on the **Preferences** tab in the web application. You can run SQL to update the value in the FCM_PROPERTY table. You do not have to restart the web application server for a new value to take effect.
An error occurs when multiple users attempt to create a new rule.	RULES STUDIO	**Summary:** When multiple users attempt to create a new rule simultaneously, an error might occur. The following error message, which is displayed in the New Rule window after you click the **Next** button, is not descriptive: `Error saving rule`	After you apply the hot fix, the application attempts to save the rule 10 times before displaying an error message to the user. If a failure occurs 10 times, a new message is displayed. The error message notifies the user that they can try to save the rule again:

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		The error in the web application log on Oracle systems is as follows: `ORA-00001: unique constraint (SOR.PKX_RULE_SLOT) violated` The workaround for this issue is to click the **Next** button a second time. **Business Impact:** Rule writers might receive a generic error message when attempting to create a new rule. When the error occurs, the user must click the **Next** button again to retry the operation.	`An error occurred saving the rule. Please attempt to save again.`
Job 3008 writes sensitive contact data to the log file.	BATCH	**Summary:** When you run the 3008 job to load local demographic data, a log entry is written for each contact loaded. The log entry contains sensitive information that should not be written to the log file in clear text. **Business Impact:** Sensitive data is written to the log file during the 3008 job.	After you apply the hot fix, no sensitive data is written to the log by the demographic loader job 3008.
Job 3008 creates a large entity data file.	BATCH	**Summary:** On Oracle systems, the local demographic loader job 3008 creates a large entity data file when BULK loading is used. The value of the DBMAINT_DEMO_LOADTYPE property specifies the load method used by job 3008. The valid types are BULK and DELTA. **Business Impact:** The large entity file uses excessive disk space when loading a large amount entity data.	After you apply the hot fix, the large entity data file is not created by the 3008 job.

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If you attempt to create second estimation too quickly after submitting an estimation, the busy indicator might be displayed but never exits.	ESTIMATION	**Summary:** The busy indicator is displayed but might not exit in the following scenario: • Create a new estimation. Enter all required information and click the **Run** button to submit it. • Before seeing the '`The estimation has been created successfully`' message, click the **New** button to create another estimation. **Business Impact:** A user might have to press the F5 key or close and reopen their browser after creating a new estimation if the busy indicator is displayed but does not exit.	After you apply the hot fix, the busy indicator exits after estimation submission. After the busy indicator exits, you can click the **New** button to create another estimation.
Job 3008 job is slow.	BATCH	**Summary:** The local demographics loader job 3008 takes substantially longer to run SAS Fraud Management version 6.1 when compared to the earlier version 4.3. **Business Impact:** The performance of the 3008 job is slow in production environments when a large amount of contact and entity data is being loaded.	After you apply the hot fix, the demographics loader job 3008 performance is improved. **Note:** This hot fix overwrites the oracle_table_opts.csv and postgres_table_opts.csv files. If you have customized either of these files, you must add your updates back into the new version after applying the hot fix. Contact the SAS Fraud Management Support team if assistance is needed.
The score distribution and explore query in the Transaction Analysis Server is slow.	TAS	**Summary:** The score distribution and explore query used by the Transaction Analysis Server (TAS) is slow when run against a large amount of data.	After you apply the hot fix, the score distribution and explore query should perform better for large amounts of data.

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		Business Impact: The score distribution page and the explore page might load slowly when there are many transactions in the database.	Updates were made for Oracle, DB2, and PostgreSQL databases.