

Platform Spring 2024

Release Updates

The following is a synopsis of product enhancements introduced in this release.

Stack Version Enhancements

JIRA ID: RECLS-93443

With the 3rd party software vendors such as Oracle adopting a more periodic release cadence, it is important to certify the product on the latest available versions. The following stacks were upgraded and certified as part of this release:

- · Oracle database version 19.22
- JDK version JDK 8 (jdk1.8.0 402)
- Oracle Linux 8.9

Note: Effective Spring 2024, the support for CentOS has been deprecated.

Refer to the Platform Matrix documentation.

Incorrect Username and Password Validation Message Update

JIRA ID: RECLS-89182

In the previous releases, when incorrect login credentials were entered in the RC login page, the validation error message was prone to user enumeration vulnerability. To resolve this issue the validation error message has been updated to "The username or password is incorrect. Please note that the password is case sensitive. If the issue persists, please contact system administrator".

Content-Security-Policy HTTP

JIRA ID: RECLS-89088

In the previous releases, the application did not include the Content-Security-Policy (CSP) HTTP headers. Due to this, web browsers supporting CSP were unable to parse the header information to determine the reliability of the sources. The following CSP directives have been added to the response header to resolve this issue:

- · connect-src
- img-src

- · frame-src
- · frame-ancestors

A new property com.modeln.content-security-policy has been added to the platform.properties file. You can specify the CSP directives in this property.

For example:

com.modeln.content-security-policy= connect-src 'self' https://*.modeln.com \${com.modeln.externalUrls.connect-src};
img-src 'self' https://*.modeln.com \${com.modeln.externalUrls.img-src}; frame-src
'self' https://*.modeln.com \${com.modeln.externalUrls.frame-src}; frame-ancestors
'self' https://*.modeln.com \${com.modeln.externalUrls.frame-ancestors};

When the Model N RC application is integrated with other applications like Pendo, Looker or Cognos, etc.. you must configure these application URLS in the **com.modeln.externalUrls** property. The **com.modeln.externalUrls** property dictates to the RC application that they are allowable URLs to be accessed from the RC application. You can specify more than one space-separated value for this property. The following is a sample that indicates the whitelisted application URLs that are appended to the connect-src directive:

com.modeln.externalUrls.connect-src=https://*.pendo.io https://*.looker.io

Notification on Concurrent User Logins

JIRA ID: RECLS-89204

Concurrent sessions increase the chances of a user being unable to detect whether the account has been compromised. It also allows an attacker who has gained access once to perpetuate the session, as it will not be logged out upon a valid logon by a legitimate user.

A new enhancement is introduced where a notification message is displayed on the Revenue Cloud application home page when there is a concurrent session open for the user in another browser:

"There are multiple concurrent sessions which are active, please check if all the sessions are logged in by you, if the sessions are not yours, please reset your password and reach out to System administrator".

The notification can be ignored if the same user has concurrently logged in. It is recommended to change the password if the concurrent sessions do not belong to the same user.

Validate the File Content and Content Type

JIRA ID: RECLS-89116

In the previous releases, there was no mechanism to validate the file content and content type uploaded to the application. With this enhancement, when uploading to the RC application through any import wizard, dataflows, or adding as an attachment on the user interface, the file content type and extension are validated to restrict malicious file uploads.

When the file format does not match the extension of the file, then the following error message is displayed:

"The uploaded file content type does not match with the uploaded file extension"

When an unsupported extension file is uploaded, the following error message is displayed:

"The uploaded file type does not match with the acceptable file types"

Note: Only the extension (.xml) is validated for XML files, as the content cannot be validated. The content validation depends on the XML header, and many flows currently use XML files without headers. If the content check is added then these files will be blocked.

Ability to enable or disable redirecting users to the bypassSSO page

JIRA ID: RECLS-99013

With this enhancement, a new property com.modeln.bypassSSO.enabled has been added to the **platform_security.properties** file with the default value 'true'. This property allows the system administrator to configure by passing the Single Sign On page when the customers access the RC application URL. This property can be overridden with the required value in the **local common.properties** file.

- When **com.modeln.bypassSSO.enabled** property value is set to true, If "bypassSSO=true" is used in the URL the user will be directed to the application login page.
- When **com.modeln.bypassSSO.enabled** property value is set to false, If "bypassSSO=true" is used in the URL the user will NOT be directed to the application login page. The user always has to log in via the Single Sign On page.

Sample URL where bypassSSO=true is used:

https:/<hostname>/modeln/BusinessNetwork?bypassSSO=true

For more information see Configuring Properties.

Secure Flag Set for Handling Security Vulnerabilities

JIRA ID: RECLS-89094

In the previous releases, the secure flagset was not set on all cookies that were used to transmit sensitive data when accessing content over HTTPS. With this enhancement, the secure and httponly flags are set for the ECMSSOToken cookie.

- The **com.modeln.intg.flexsso.isenabled** property is added to the local_jboss.properties file with a default value as 'true'. When this property is set to 'true' the ECMSSOToken will be visible. When this property is set to 'false' the ECMSSOToken will not be visible. For more details about JBoss Properties file, click here.
- The samesite flag for all the cookies (ECMSSOToken , JSESSIONID and MN_KEEP_ALIVE) is set to 'Lax' to send only the top-level navigation like clicking on the URL link or getting request but not in all cross-site requests.

Note: In addition to the changes mentioned above, the Nginix configuration file, in the proxy_cookie_path line parameter "SameSite=lax" has to be added as shown in the following code snippet:

```
location / {
    include includes/headers.conf;
    proxy_cookie_path / "/; secure; HttpOnly; SameSite=lax";
    proxy ssl server name on;
```

The Model N CloudOps team will make the required changes to the Nginix configuration file. When deploying the hotfix patch build, raise a JIRA ticket for CloudOps to make the needed change.

Extended the State drop-down on the Customer Page

JIRA ID: RECLS-94706

Several new State Codes were unavailable in the Revenue Cloud application master data, limiting the customer data's eligibility and accuracy. With this enhancement, the State drop-down list on the Customer search section and Address page has been updated by adding the following list of new State options:

- "AA" Armed Forces Americas (except Canada and United States of America)
- "AE" Armed Forces Africa, Canada, Europe, and Middle East
- · "AP" Armed Forces Pacific
- · "FM" Federal States of Micronesia
- · "MH" Marshall Islands
- "PW" Palau
- "UM" U.S. Minor Outlying Islands

This new addition allows the user to maintain accurate Customer information in the Master Data. The customer record created in the application version prior to the Spring 2024 release can be updated by mapping the new State to the Customer on the Address page. When searching for a Customer using the search criteria in the State drop-down list, the user can select these newly added States and filter the record on the Customer list page.

Extending the Decimal Precession Value Support for Quantity Column in the MN_WORKBOOK_RES_LINE

JIRA ID: RECLS-99899

In the releases prior to Sprig 2024, when the decimal precision values for the Quantity column in the MN_WORKBOOK_RES_LINE table was more than 12 places, the decimal places were truncated to display only 12 places value after line override was performed. The original decimal precession place values were not retained for the Quantity column. The CMnMeasurement class of double data type used to fetch the decimal place values supported the decimal precision for 12 place values only.

With this enhancement, a new CMnMeasurementBigDecimal class, which supports BigDecimal, has been introduced. Additionally, CMnPMeasurementBigDecimalModel and CMnMeasurementBigDecimalModel class has been added to support getQuantity method of CMnWorkBookResultLine to retian the value in BigDecimal as is without truncating the decimal place values.

Syncing of Users from RC to User Access Management (UAM) Application

JIRA ID: RECLS-78867

With this enhancement, when the RC application is integrated with the UAM application for user authentication when a user is created/updated in the RC application user interface or using the **CommunityFromXml** Data Flow, the users will be synced with the UAM. The system administrator must specify the user authentication identity provider when adding a new user. A new user input IDP has been added to the New Staff page, where the identity provider can be selected for a user. For more details, see Adding a New Staff. When adding a new user through **CommunityFromXml** Data Flow, the IDP parameter has to be specified. For details about the data flow sample file, see CommunityFromXml Data Flow documentation.

Note: The IDP should be provided during new user creation only when the RC application is integrated with any external identity providers for user authentication. When external authentication identity provider is not used, then the IDP parameter is not a mandatory user input.

The **Primary Email** ID of the user added to the User Profile page should be unique to each user. Configure the **com.modeln.AppSwitch.uam.userSync.clientId**

and **com.modeln.AppSwitch.uam.userSync.clientSecret** application switches. It contains the clientId and clientSecret required when syncing the data with UAM application.

The following new properties are added to the platform_uam.properties file. Configure these properties in the Local_common.properties files for user sync between the RC and UAM applications:

- · com.modeln.AppSwitch.uam.usersync.jobRetryCount
- com.modeln.AppSwitch.uam.userDetailsCsv.columnHeaders
- com.modeln.AppSwitch.uam.hostName
- · com.modeln.AppSwitch.uam.tenantName

For more details about the newly added properties, see Configuring Properties.

An async job, **Uam User Sync**, will be auto-executed when a user is created/updated in the RC application to start the sync process from RC to the UAM application. When this fails, and the user sync does not happen, the UAM_SYNC_SUCCESS column in the MN_USER_ACCOUNT table contains a 0 value. The system administrator can execute the manual job **Sync users to UAM** to pick all the users who have the UAM_SYNC_SUCCESS column value 0 in the MN_USER_ACCOUNT table and initiate the UAM user sync process again.

Migration From a Previous Release to the Current Release

When a customer upgrades from a prior release to the Spring 2024 release and is subscribed to the UAM application, the existing RC user records can be synced with the UAM application during the database migration. Before executing the database migration, the system administrator should do the following:

- Ensure that in the UAM application, the user authentication Identity provider has been configured.
- Create a new file with the name, **IdentityProviders** XML in the below location, with the required information.

pharma/migration/2024.1.0/<Custom Foleder>/content/base/Global/Enumerations . Refer to the sample IdentityProviders.xml file.

- Configure the com.modeln.AppSwitch.uam.userSync.clientId
 and com.modeln.AppSwitch.uam.userSync.clientSecret application switches. It contains
 the clientId and clientSecret required to configure in the UAMAuthorizationConfig.xml file. For more information,
 see com.modeln.AppSwitch.uam.userSync.clientSecret and com.modeln.AppSwitch.uam.userSync.clientId
 documentation.
- Create a new file with the name, UAMAuthorizationConfig.xml in the below location, with the required information.
 pharma/migration/2024.1.0/<custom folder>/content/product/Global/Importers/Configuration Refer to the sample OOB UAMAuthorizationConfig.xml file.
- The Primary Email ID should be a unique value for all user records. If a duplicate Primary Email ID exists, the user sync job will fail. It is recommended to review the email IDs of the users and update if needed.

Introduction of MN_TRUNCATE_PARTITION_TABLE_INFO Table

JIRA ID: RECLS-99271 and RECLS-99293

The partitioned table information in the RC application database will be retrieved and populated in the MN_TRUNCATE_TABLE_INFO table when any partition table is truncated. In the MN_TRUNCATE_TABLE_INFO table, the following details from the truncated table are populated:

- · Table name
- · Partition Key
- · Partition value
- Date_Created

When any partitioned table is truncated the mn_partition_body.sql and mn_platform_partition_body.sql script will insert the data in the MN_TRUNCATE_TABLE_INFO table. The MN_TRUNCATE_TABLE_INFO table information will be useful for refreshing the data in the Data and Analytics database. For more information, see Populating Partitioned Table Information in the MN_TRUNCATE_PARTITION_TABLE_INFO Table.

Fixed and Merged Issues

Fixed Issues

The following issues are fixed in this release:

Issue #	Components	Issue Title	Description	Test Impact
RECLS- 99236	Business Engine - Strategy	Ampersand '&' was converted to '&' on	This fix addresses an issue wherein the Ampersand symbol '&' in the strategy was converted to the encoded symbol '&	Verify that the Ampersand symbol '&' or other symbols in the

Issue #	Components	Issue Title	Description	Test Impact
	Designer	saving the strategy.	amp' instead of the actual symbols while saving the strategy. To address the security issue, the content was sanitized, which resulted in this issue. This issue was fixed by replacing the encoded symbols with the actual symbols.	strategy are converted into actual symbols instead of encoded symbols while saving the strategy.
RECLS- 90684	18N locale	An exception occurred when exporting the calculation log in the Japan locale.	In the Rebate payments > Calculation Summary page, when the user exported the calculation log, an error was displayed when the Contract was created in the Japan locale. This issue occurred as the file name was in Japanese, and the application was unable to encode the file when exporting the calculation log. This issue has been fixed by updating the code to encode the file name when it is in a different locale.	Perform export calculation logic for a Contract created in the Japanese locale. Verify that the file is exported without any exception and the data is exported correctly.
RECLS- 99708	Reports	Unable to run Report for Custom Templates	On the Custom Templates page, the user was unable to run report for a selected Custom Template. This issue occurred because check for the Custom Report was missing in one of the If condition defined in the code. This issue has been fixed by updating the If condition to enable Custom Report to run.	Navigate to Reporting > Standard Reports > Custom Template and verify that you can run the report for a selected Custom Report.

Issue #	Components	Issue Title	Description	Test Impact
RECLS- 95690	All modules with UAM integration (multi-tenant and non- multi-tenant) and without UAM integration.	An exception occurred when implementing or amending a Contract	When the user performed Contract amendment and implementation, an exception occurred and an error message was displayed on the user interface. This issue occurred as the tenantId value was expected in the context object as JWT-based authentication was enabled for SSO login, although for the environment, multi-tenancy was not enabled. This issue has been fixed by setting the tenantId as null in the context object when JWT-based authentication is enabled but multi-tenancy is not enabled.	Verify that when multi- tenancy is not enabled, but JWT- based authentication is enabled for SSO login, the users can perform the actions on the user interface without any exceptions.
RECLS- 87878 RECLS- 76448	Excel Export	Redundant space between the header and calculation result rows in the exported file.	When the user exported the NDC Calc result on the GP Workbook page in the exported file, redundant space (gap of one line) was found between the header and calculation result rows. This issue occurred when the COM.MODELN. APPSWITCH. WORKBOOKRESULTLINE. SHOULDUSENEWEXPORT application switch was set to false. When the user exported the Medicaid Claim lines on the Medicaid Claim, Claim Lines tab page, in the exported file, redundant space (gap of one line) was found between the header and line result rows. This issue occurred as an additional row was available between the header and result rows in the Excel exported file.	Export the NDC Calc result on the GP Workbook page and Medicaid Claim lines on the Medicaid Claim > Claim Lines tab page. Verify that no blank rows are displayed between the header and result row in the exported file.

Issue #	Components	Issue Title	Description	Test Impact
			This issue has been fixed by removing the blank row that is coming between the header and the result rows.	
RECLS- 68134	Price List - Export	Additional characters were added to the exported FSS Price List record.	When the user exported the FSS Price list record, in the export .csv file, additional characters =, "," were appended to the Product ID value. This issue occurred because these additional characters =, "," were available in the code for the Product ID component. This issue has been fixed by removing the additional characters from the Product ID.	Export the SS Price list record from the user interface to a .csv file format. Verify that additional characters are not added to the Product ID value.
RECLS- 101460	Jobs	An issue with the URA jobs status.	This fix addresses an issue wherein timers were not moving to the RUN state when the timer failed. The issue occurred due to the failure of a custom queue command job. The job was then rescheduled with the latest timer ID. There were a higher number of jobs in the scheduled status than in the vacant status. This caused an increase in the number of timers added without verifying job readiness for execution. This issue has been fixed by increasing the count of timers only when the job is ready for execution and subsequently added to the Queue.	Verify that all the custom queue commands are running successfully.
RECLS- 104340	Jobs	Extend the character	In the multi-tenancy environment, the hostname value is longer. Before the fix,	Verify that

				i i
		the RC application's hos supported 64 characters hostname value was more characters, the RC application of read it, and he were not executed. With this fix now, the ler following listed column it tables has been extended 150 characters:	s. When the ore than 64 ication jobs ence, the jobs on the of the number of the database	
	length for a few database columns.	Table Name	Column Name	
		MN_BUILD_ MANIFEST	HOSTNAME	The impacted database columns support 150
		MN_COMMAND_ RECORD	HOST_INFO	characters. • Verify that the jobs have been initiated
		MN_FTP_ CHANNEL	HOST_ NAME	and completed successfully.
		MN_FTP_ CHANNEL_VER	HOST_ NAME	
		MN_HIST_HEALTH	NODE_ NAME	
		MN_HIST_ SESSION	NODE_ NAME	
		MN_HIST_TASK	NODE_ NAME	
		MN_JMS_ CHANNEL	HOST_ NAME	
		MN_JMS_ CHANNEL_VER	HOST_ NAME	

Issue #	Components	Issue Title	Description		Test Impact
			Table Name	Column Name	
			MN_MONITOR	NODE	
			MN_NODE_ FINISH_VERIFY	NODE_ NAME	
			MN_NODE_ HEARTBEAT	DUPLICATE_ HOST	
			MN_NODE_ HEARTBEAT	HOST_ NAME	
			MN_NODE_ HEARTBEAT	NODE_ ADDRESS	
			MN_NODE_ HEARTBEAT	NODE_ NAME	
			MN_SYSTEM_ INFORMATION	HOST_ NAME	
			MN_SYSTEM_ INFORMATION	NODE_ NAME	
			MN_SYSTEM_ VERIF_RESULT	NODE_ NAME	
			MN_TIMER	HOST_INFO	

Merged Issues

The following issues are merged from a prior release to this release:

Issue #	Components	Issue Title	Description	Test Impact
Fixed Ver	sion Spring 2023	RP1		
RECLS- 91798	Log Manager	SQL queries were not captured when DBIO was enabled at the Log Level	In the Logging configuration page, when the Log Level was set to DBIO, the SQL queries were not captured in the log file. This issue occurred because when the Log Level was set to DBIO, the logger appenders were unavailable in the logger class, hence the SQL queries were not captured in the output destination. This issue is fixed by retrieving the logger appenders from the parent class when it is unavailable in the current logger.	Verify that when the Log Level is set to DBIO, the logs are updated along with queries irrespective of the selected Output option in the Logging configuration page.
Fixed Ver	sion Fall 2021 RF	23		
RECLS- 98955	Cognos Report	An exception occurred when generating Cognos Reports for a larger dataset in Excel	An error occurred when a user generated Cognos Reports for a larger dataset in Excel and the report generation took more than 30 minutes. The database sessions for generating the report were completed successfully but the error occurred when rendering the report data to Excel. In the code, the Campassport cookie expiration time was hard-coded to 30 minutes. When the report generation time exceeded 30 minutes, the Campassport cookie expired and the Cognos connection failed. This issue has been fixed by removing the hard-coded expiration time for the Campassport	Generate Cognos Reports for a larger dataset in Excel. Verify that the report is successfully generated when the report generation time exceeds 30 minutes.

Fixed V	ersion Fall 2023 RF	71	cookie. With this fix the Campassport cookie expiration time will be fetched from the property com.modeln.ReportingSvc.connectionTimeout. By default, the com.modeln.ReportingSvc. connectionTimeout property value is set to 30 minutes. When generating the Cognos Reports for a larger dataset, to keep the Cognos connection active for a long time update the value for the com.modeln.ReportingSvc. connectionTimeout property.	
RECLS 99954	- Platform Services	Jboss undertow subsystem in UAM did not decode the application URLs	Until the Fall 2023 release of the UAM (User Access Management) application, when the RC application URLs were sent to UAM, the URL decoding was taken care of by UAM gateway for proceeding with the requests. Effective Fall 2023 RP1 release of the UAM, the application URL decoding will be not taken care of UAM. Due to a change in the UAM gateway for not performing URL decode of query parameters and sending the request as is to downstream applications. This issue has been fixed by handling the URL decoding of query parameters in the RC application before sending requests to the UAM application.	Verify that you can access the RC application through UAM without any interruptions.

User Interface Updates

Page and Navigation	UI Updates	Description
Application login page	The invalid user login credentials error message has been updated as below:	On the RC application login page, when an invalid username and password are specified or the

Page and Navigation	UI Updates	Description
	The username or password is incorrect. Please note that the password is case sensitive. If the issue persists, please contact system administrator.	specified username has been disabled, the updated error message text is displayed on the login page.
Application home page	When there is a concurrent session open for the user in another browser, the following notification message is displayed: "There are multiple concurrent sessions which are active, please check if all the sessions are logged in by you, if the sessions are not yours, please reset your password and reach out to System administrator".	The notification message is displayed on the RC application home page when there is a concurrent session open for the user in another browser.
All page	When the file format does not match the extension of the file then the following error message is displayed: "The uploaded file content type does not match with the uploaded file extension" When an unsupported extension file is uploaded the following error message is displayed: "The uploaded file type does not match with the acceptable file types"	The file content type and file extension are validated to restrict malicious file uploads.
Customers Search Section Customer > Address page	The State drop-down list is updated with new options: • "AA" - Armed Forces Americas (except Canada and United States of America) • "AE" - Armed Forces Africa, Canada, Europe, and Middle East • "AP" - Armed Forces Pacific • "FM" - Federal States of Micronesia • "MH" - Marshall Islands • "PW" - Palau	This new addition allows the user to maintain accurate Customer information in the Master Data. The customer record created in the application version prior to the Spring 2024 release can be updated by mapping the new State to the Customer on the Address page. When searching for a Customer using the search

Page and Navigation	UI Updates	Description
	"UM" - U.S. Minor Outlying Islands	criteria in the State drop-down list, the user can select these newly added States and filter the record on the Customer list page.
Administration > Users and Organizations > Users > New User	IDP drop-down list has been added.	Allows you to select the user authentication identity provider for this user. When RC application is integrated with UAM, this is a mandatory input.

Known Issues

N/A

Workflow Changes

N/A

Property Changes

Property Name	JIRA ID	Comment/Description
com.modeln. bypassSSO.enabled	RECLS- 99013	This property allows the system administrator to configure by passing the Single Sign On page when the customers access the RC application URL.
com.modeln. AppSwitch.uam. usersync. jobRetryCount	RECLS- 102214	This property specifies the number of retires that will be attempted to sync the users to the UAM application when there is a failure in the sync process.
com.modeln. AppSwitch.uam.	RECLS- 102214	This property specifies the information that will be sent to UAM from the RC application for a user during user sync.

Property Name	JIRA ID	Comment/Description
userDetailsCsv. columnHeaders		
com.modeln. AppSwitch.uam. hostName	RECLS- 102214	Specifies the UAM application host name.
com.modeln. AppSwitch.uam. tenantName	RECLS- 102214	Specifies the UAM application tenant name.
com.modeln.purge. truncatepartitiontable. timerange	RECLS- 99293, RECLS- 99271	Specifies the number of days interval when the PurgeTruncatePartitionTable job will be scheduled. The PurgeTruncatePartitionTable job cleans the old data in the MN_TRUNCATE_PARTITION_TABLE_INFO table.