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Banner General Release Guide

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Introduction

This release guide provides a description of the enhancements included in Banner General 8.8.4 release.

Change request enhancements

The following enhancements are included in Banner General 8.8.4 release.

- CR-000135924 - Direct Deposit Email notification
- CR-000127822 - Application Navigator Support - Job Submission and Quickflow
- CR-000137701 - New Fine-Grained Access Control (FGAC) policies for GOBTPAC and GOBEACC tables

Direct deposit email notification

This enhancement adds the functionality to send email notifications to the preferred email address of employees and students each time their direct deposit bank account information is entered, updated, or deleted.

Three types of transactions can trigger an email notification to an employee or student. They are: the creation of a new record, the deletion of an existing record and the modification of the bank routing number or account number of an existing record. Changes to the Priority, Status and Account Type do not trigger an email notification. Because email notifications are initiated by changes in the database, all possible sources of these changes (i.e. INB, Self-Service, batch processes, etc.) can result in an email notification being sent.

Previously, when employees updated their direct deposit information using Self-Service, no email notifications were generated. Receiving email notifications helps employees and students to be aware of any potentially unauthorized changes.

Additionally, email notifications will be sent when email address changes occur. This is another way to help employees and students be aware of any potentially unauthorized changes to their information. When the Email Address, Status or Preferred Indicator of an email address record is changed or deleted, an email notification is sent to the email address as it was before the update or deletion occurred. Email notifications are not sent when a new email address is created.

Oracle Job Scheduler

The Oracle Job Scheduler, GXBEJOB_EMAIL_JOB, processes requests to send email notifications resulting from changes made to the Direct Deposit (GXRDIRD) and Email Address (GOREMAL) tables. The `gmail_scheduler_080804_01.sql` script delivers the Job Scheduler.

For GXRDIRD, email notifications are sent after insert/delete/update of GXRDIRD_BANK_ROUT_NUM and GXRDIRD_BANK_ACCT_NUM fields. For GOREMAL, email notifications are sent after every delete or update of GOREMAL_EMAIL_ADDRESS, GOREMAL_STATUS_IND, and GOREMAL_PREFERRED_IND fields.

The default interval at which the Oracle Job Scheduler processes requests for email notification is set to 30 seconds. For example, `repeat_interval => 'freq=SECONDLY; interval=30',.`

If it needs to be changed, the DBA has to update the `repeat_interval` parameter as mentioned below and apply it in the database under the General schema.

- If this needs to be changed to 60 seconds, `repeat_interval => 'freq=SECONDLY; interval=60',`
- If this needs to be changed to 20 minutes, `repeat_interval => 'freq=MINUTELY; interval=20',`
- If this needs to be changed for every 4 hours, `repeat_interval => 'FREQ=HOURLY; INTERVAL=4',`

For more information on updating the `repeat_interval` parameter, refer to *Oracle Database Administrator's Guide*.

Errors from email notification

The Email Job Table (GXBEJOB) maintains any error text that may occur during email notification. When an error occurs, the error text gets created in the GXBEJOB_ERROR_TEXT column, and the status of the GXBEJOB record is set to E.

For example, if a change is made to a record in GXRDIRD and the person associated with that GXRDIRD record does not have an email address defined as "preferred", then the error `Recipient Address is not available` gets logged into this column for the job that failed.

When the error condition is corrected, the Oracle Job Scheduler re-processes this email job automatically.

The following SQL can be used to look at the error text for the jobs that may have failed for various reasons:

```
SELECT GXBEJOB_REFERENCE_ID,  
       GXBEJOB_MODULE_CODE,  
       GXBEJOB_ERROR_TEXT  
FROM GXBEJOB  
WHERE GXBEJOB_STATUS = 'E'  
ORDER BY GXBEJOB_ACTIVITY_DATE
```

Email job removal

As mentioned before, the GXBEJOB table maintains the jobs for email notifications.

Over a period of time, this table accumulates a large number of job records. In addition to processing the notification, the Job Scheduler also cleans up the successfully processed records that are 30 days old or older. It uses the GXBEJOB_ACTIVITY_DATE to calculate the number of days.

This can be customized in the `gmail_scheduler_080804_01.sql` script and applied in the database under the General schema.

If you need to change the time period, you have to change 30 to the number of days after which the job record should be removed.

For example, if you change the time period to 16, the Job Scheduler keeps the job record for 15 days after its successful completion and removes it on the 16th day.

Sender address configuration

For email notifications, the sender address must be configured through Web Tailor in the Web Tailor Parameter section. If an email message does not have the sender address, it fails and the error text is logged into the GXBEJOB table.

A user with the Web Tailor Administrator role can configure the Sender Address in Web Tailor Parameters. By default, Ellucian ships the following seed data for sender address, but institutions need to update that. They have to locate the DIRD_SENDER_EMAIL parameter and update the default sender address from admin@institution.edu to the desired sender address for GXRDIRD email notification. The same should be done for the EMAL_SENDER_EMAIL parameter for GOREMAL email notification.

Customization of email message and subject

Institutions can customize the email message and the subject for both GXRDIRD and GOREMAL email notifications under Web Tailor Information Text. Ellucian ships seed data for email message and the subject.

The following four information text updates are shipped under the XeDirectDeposit procedure name. Each one of them can be customized.

Field	Description
DIRD_EMAIL_SUBJECT	This defines the subject line for GXRDIRD email notification.
DIRD_EMAIL_MESSAGE	This defines the email message for GXRDIRD email notification.
EMAL_EMAIL_SUBJECT	This defines the subject line for GOREMAL email notification.
EMAL_EMAIL_MESSAGE	This defines the email message for GOREMAL email notification.

The email message contains two data variables: <<RECIPIENT_NAME>> and <<UPDATED_DATE>>. They can be placed anywhere within the message. They are evaluated at run time and the actual values are printed in the email message.

Turn on email notification

Email notification for GXRDIRD and GOREMAL is turned off by default. If you need to turn this on for your institution, the DBA has to run the following commands in the database under the General schema.

Table	Command
GXRDIRD	ALTER TRIGGER GT_GXRDIRD_EMAIL_TRG ENABLE;
GOREMAL	ALTER TRIGGER GT_GOREMAL_EMAIL_TRG ENABLE;

New tables

The following table has been added to support this enhancement.

Email Job Table (GXBEJOB)

This table defines a request to send an email to a recipient.

Column Name	Null?	Type	Description
GXBEJOB_SURROGATE_ID	NOT NULL	NUMBER (19)	SURROGATE ID: Generated unique numeric identifier for this entity.
GXBEJOB_STATUS	NOT NULL	VARCHAR2 (30)	STATUS: The status of the email notification. Valid values are: <ul style="list-style-type: none"> • A - Active, waiting to be processed for notification • I - Inactive, successfully processed for notification • E - Error, an error occurred during the processing
GXBEJOB_REFERENCE_ID	NOT NULL	NUMBER (19)	SEND ITEM REFERENCE ID:

Column Name	Null?	Type	Description
			The ID of the send item that initiated this communication.
GXBEJOB_MODULE_CODE	NOT NULL	VARCHAR2 (10)	MODULE CODE: The name of the module that creates the email request.
GXBEJOB_MODULE_PACKAGE	NOT NULL	VARCHAR2 (100)	MODULE PACKAGE NAME: The name of the database package that returns email information.
GXBEJOB_CREATION_DATE	NOT NULL	DATE	CEATION DATE: Date that record was first created.
GXBEJOB_ACTIVITY_DATE	NOT NULL	DATE	ACTIVITY DATE: Date that record was created or last updated.
GXBEJOB_USER_ID	NOT NULL	VARCHAR2 (30)	USER ID: The user ID of the person who inserted or last updated this record.
GXBEJOB_VERSION	NOT NULL	NUMBER (19)	VERSION: Optimistic lock token.
GXBEJOB_ERROR_TEXT	NULL	CLOB	ERROR TEXT: The full text of any error generated during processing.
GXBEJOB_DATA_ORIGIN	NULL	VARCHAR2 (30)	DATA ORIGIN: Source system that created or updated the data.
GXBEJOB_VPDI_CODE	NULL	VARCHAR2 (6)	VPDI CODE: Multi-entity processing code.

Email Parameters Table (GXREREF)

This table defines variables used in the email communication.

Column Name	Null?	Type	Description
GXREREF_SURROGATE_ID	NOT NULL	NUMBER (19)	SURROGATE ID: Generated unique numeric identifier for this entity.
GXREREF_EJOB_SURROGATE_ID	NOT NULL	NUMBER (19)	GXBEJOB SURROGATE ID: Generated unique numeric identifier for GXBEJOB entity.
GXREREF_REFERENCE_FIELD	NOT NULL	VARCHAR2 (100)	REFERENCE FIELD: Name of the field for which the value is captured.
GXREREF_REFERENCE_VALUE	NOT NULL	VARCHAR2 (255)	REFERENCE VALUE: Value captured for the email processing.
GXREREF_ACTIVITY_DATE	NOT NULL	DATE	ACTIVITY DATE: Date that record was created or last updated.
GXREREF_USER_ID	NOT NULL	VARCHAR2 (30)	USER ID: The user ID of the person who inserted or last updated this record.
GXREREF_VERSION	NOT NULL	NUMBER (19)	VERSION: Optimistic lock token.
GXREREF_DATA_ORIGIN	NULL	VARCHAR2 (30)	DATA ORIGIN: Source system that created or updated the data.
GXREREF_VPDI_CODE	NULL	VARCHAR2 (6)	VPDI CODE: Multi-entity processing code.

Modified tables

The following table has been modified to support this enhancement.

GXRDRDH Table

A new column has been added to this table.

Column Name	Null?	Type	Description
GXRDRDH_DIRD_SURROGATE_ID	NULL	NUMBER (19)	GXRDIRD SURROGATE ID: Generated unique numeric identifier for GXRDIRD entity.

Seed data for new Web Tailor parameters

The following new scripts are delivered with this release.

Seed Data	Description
gtwgbwmnui_080804.sql	Creates a menu item XeDirectDeposit for email subject and message for both GXRDIRD and GOREMAL email notifications.
gtwgrinfoi_080804.sql	Creates the seed data for email message and the subject for both GXRDIRD and GOREMAL email notifications.
gtwgbparmi_080804.sql	Creates a seed data for sender address for both GXRDIRD and GOREMAL email notifications.

New packages

The following packages are new for this release.

Package	Description
GXKEMDD	This package collects the data for notification on GXRDIRD changes.

Package	Description
GXKEMEM	This package collects the data for notification on GOREMAL changes.
GXKEMJB	This package merges the email body and the data variables and sends the email.

New triggers

The following triggers have been added to support this enhancement.

Trigger	Description
GT_GOREMAL_EMAIL_TRG	This trigger is on GOREMAL table, which captures changes in a Jobs table for any updates and deletes. This trigger is delivered as disabled and will need to be enabled by a DBA when the client wants to begin capturing changes in the Jobs table.
GT_GXBEJOB_SURROGATE_ID	This trigger on GXBEJOB table, which generates the surrogate ID and maintains the version for the record.
GT_GXRDIRD_EMAIL_TRG	This trigger is on GXRDIRD table, which captures changes in a Jobs table for any inserts, updates and deletes. This trigger is delivered as disabled and will need to be enabled by a DBA when the client wants to begin capturing changes in the Jobs table.
GT_GXREREF_SURROGATE_ID	This trigger on GXREREF table, which generates the surrogate ID and maintains the version for the record.

Modified triggers

The following trigger has been modified to support this enhancement.

Trigger	Description
GT_GXRDIRD_AUDIT_ROW	This trigger has been modified to include the new column.

Application Navigator Support - Job Submission and Quickflow

Searching has been enabled for additional object types in the Application Navigator search and also support for the related behavior of each type.

In INB, Banner users can use the **Go To** field on the General Menu Form (GUAGMNU) to search for any Banner object that has a Type of Menu, Form, Jobs, Message or Quickflow. The direct access feature also provides this functionality in INB. In Application Navigator, the Go To functionality in INB has been replaced by Search. Before this change, Application Navigator only handled searching for Banner objects that had a Type of Form or Menu.

This functionality enables Banner users to run a job (report or process) or quickflow through the unified menu and from the **Search** field in Application Navigator. When the user enters a quickflow in the Search field, the quickflow is displayed in the results list and the first page in the selected quickflow opens. When the user enters a job name in the **Search** field, the jobs are displayed in the results list, even if that job is not included in the menu. If the user selects a job from the list, the Job Submission Control Form (GJAPCTL) is launched and the name of the selected job defaults in the **Process** field.

If a job is included in the Banner menu, it should be displayed on the Application Navigator menu. And if the user selects a job from the Application Navigator menu, the GJAPCTL form should launch.

New Fine-Grained Access Control (FGAC) policies for GOBTPAC and GOBEACC tables

A new package, GOKBEIS, has been created with a template of Fine-Grained Access Control (FGAC) policies that should be applied on the Third Party Access Table (GOBTPAC) and Enterprise Oracle Access Table (GOBEACC). These policies, if enabled, can restrict access for certain users and specific types of data.

This release will deliver the package together with the scripts to enable and disable the policies. The policies will not be enabled by the installation process.

Warning! It is important to remember that the GOKBEIS package only defines the policy predicates. You must add the policies using the `gfbeisaddpol.sql` to actually add the policies that use the GOKBEIS package. The `gfbeisdroppol.sql` enables the dropping of the policies if that is required.

Note: It is highly recommended that you review the policies, making any local changes required, and then enable those policies. Refer to *Banner General Security Administration Handbook* for additional information on implementing these FGAC policies.

Known issues

Please be aware that some issues related to the direct deposit email notification enhancement might exist in this release.

- Changing the `E-Mail Type` value in the `GOREMAL_EMAL_CODE` column in INB triggers an email.
- Changing the value in the **Comments** field in GOREMAL in Self-Service triggers an email.
- If an employee has three Payroll direct deposit accounts, and two of those accounts have *Remaining* in the **Amount or Percent** field, changing the value in the **Account Type**, **Amount or Percent**, **Payroll Deposit**, or **Accounts Payable Deposit** fields for the account with a numeric value in the **Amount or Percent** field triggers an email.
- If an employee has two Payroll direct deposit accounts and one Accounts Payable account, changing the value in the **Account Type**, **Amount or Percent**, **Payroll Deposit**, or **Accounts Payable Deposit** fields triggers an email.
- If an employee has two or more Payroll direct deposit accounts, changing the value in the **Priority** field triggers an email.

In all these events, the email is triggered because records are recreated.