

Integration Solutions Banner Intcomp Release Guide

November 2006

Release 7.3



SUNGARD HIGHER EDUCATION

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Banner Intcomp

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Section 1 Introduction

The SunGard Higher Education software changes and problem resolutions described in this release guide are delivered with the 7.3 release of Banner Intcomp.

Banner Intcomp comprises the Banner product components that support data synchronization and messaging with third-party components. Specifically, it includes the Banner components that support Integration for e-Learning, which includes integration between Banner, Luminis, Blackboard Learning System products, and Nuventive TracDat and iWebfolio.

Dependencies for Implementing Banner Intcomp 7.3

For Banner Intcomp release requirements for previous versions, refer to *Integration Solution Dependencies*, a document available from the SunGard Higher Education Customer Support Center.

Banner Intcomp MIF processing (refer to Chapter 2, “Extract Supports MIF Functionality with Vista Enterprise”) is dependent on MIF code developed and delivered by SunGard Higher Education Professional Services. Before implementing Intcomp in a MIF environment, please work with services to ensure all required modifications have been made to support Intcomp in a MIF environment.

Required Products

Your institution must be licensed for the following products that support Banner Intcomp Release 7.3:

- Banner General 7.4
- Banner Student 7.3
- Learning Management Gateway 3.2

Supported Optional Products

The following optional Banner products are supported by Banner Intcomp Release 7.3. These are the *minimal* releases for these products that Banner Intcomp 7.3 supports:

- Banner Finance 7.2
- Banner Advancement 7.2
- Banner HR 7.2

Related Documentation

You should refer to the following related documentation during the installation and configuration of Banner Integration for e-Learning.

- *Integration for e-Learning Banner Administration Guide* - describes implementing the e-Learning product, ensuring data synchronization and successful event and report processing.
- *Integration for e-Learning Banner Installation Guide* – describes how to install and configure Banner and Luminis components with partner systems.
- *LMB Installation and Administration Guide* – describes how to install and set up the Luminis Message Broker, the software component used to transfer information between Banner and Blackboard Learning System products.
- *Integration for e-Learning Banner Message Reference Guide* – defines the business processes and XML messages that are part of Integration for e-Learning partner systems.
- *Integration Solutions Interdependencies* document – contains all of the hardware and software dependencies required for installing Integration for e-Learning.
- Release and upgrade guides for various Banner baseline, self-service Web products, and Integration Technologies component middleware – describe how to install and implement the products used with the Integration for e-Learning. The specific manuals you use depend on which products your institution is using. You can find the latest documentation for this software on the Customer Support Center under the product name.
- Luminis platform documentation – describes installation and configuration of the Luminis products.
- *Data Integration SDK Protocol IMS Specification* – provides guidelines for developing adapters to support the integration with products such as Luminis Platform that use the SunGard Higher Education Integration Technologies. This document was known as *LDIS-P Protocol Specification 2.0*.
- Blackboard Learning System product documentation – describes installation and configuration of Blackboard products including CE Enterprise and Vista Enterprise. Find the most current Blackboard Learning System documentation for Integration for e-Learning on <http://www.blackboard.com>.

Summary of Changes in This Release

This Banner Intcomp 7.3 release guide features the following information:

- Extract enhancement to support Multi Institutional Functionality (MIF) with Blackboard Learning System's Vista Enterprise
- Enhancements to support Integration Control functionality
- Enhancements to support TracDat functionality
- Requests for Product Enhancements (RPEs)
- Resolutions for problems found in Banner Intcomp 7.2
- Objects: Processes, Seed Data, database procedures, and DBA installation

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Section 2 Extract Supports MIF Functionality with Vista Enterprise

The extract process ICGORLDI has been modified to support Multi Institutional Functionality (MIF) with Blackboard Learning System's Vista Enterprise. A parameter was added to the extract process to allow you to enter an institution code. This parameter is valid for MIF clients utilizing a VPD -Virtual Private Database only. When entered, the extract will select institution-specific objects related only to that institution. In addition, the extract will select objects common to all institutions.

The ICGORLDI parameter is *Institution VPD Code*, which must match a valid BANSECR GTVVPDI Institution code.

Note: Banner Intcomp MIF processing is dependent on MIF code developed and delivered by SunGard Higher Education Professional Services. Before implementing Intcomp in a MIF environment, please work with Services to ensure all required modifications have been made to support Intcomp in a MIF environment.

ICGORLDI Parameter 18

<i>Parameter Name</i>	<i>Valid Values</i>	<i>Required</i>	<i>Length</i>	<i>Description</i>
18 - Institution VPD Code	Must match a valid BANSECR. GTVVPDI Institution code.	No	6	This parameter is valid for MIF - Multi Institution Functionality clients utilizing a VPD (Virtual Private Database) only.

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Section 3 Integration Control Support

A new Integration Configuration form (GORICCR) has been created so that you can determine settings that control how Banner is integrated with partner systems. Previously, much integration control was located through options in the Crosswalk Validation form GTVSDAX.

New Form GORICCR

GORICCR contains a **Key** block with the following fields:

<i>Field</i>	<i>Description</i>
Process	All Integration for e-Learning configuration settings are grouped under the process code of "ELEARNING".
Settings	All "ELEARNING" settings are displayed when the List of Values box is selected. You can select a specific setting, for example, "ACTIVE_TERM" to display only all ACTIVE_TERM settings. If you leave the settings field blank, all ELEARNING settings will be displayed.

GORICCR contains a **Configuration Settings** block with the following fields:

<i>Field</i>	<i>Description</i>
Setting	Integration Settings delivered and used by ELEARNING are available for this field.
Sequence	If Values should be processed in a specific sequence, the number will be used in this field.
Value	This field contains validation form codes and integration codes selected by the user.
Description	A description for the value is displayed and may be changed by the user.
Translation	If the Setting has a translation value it is listed in this field.
User ID	User who updated or inserted setting.
Activity Date	Date that the setting was added or updated.

Integration Configuration GORICCR 7.4 Form

Integration Configuration Settings GORICCR 7.4 (s4b70)

Process: ELEARNING eLearning Integration rules
Setting: [dropdown]

Configuration Settings

Setting:	ACTIVE_ENROLLMENT_STATUS	Active integration enrollment status	Sequence:	[input]	
Value:	[dropdown: RE]				
Description:	**Registered**	User ID:	KBUNTE	Activity Date:	28-SEP-2006
Translation:	[input]				

Setting:	ACTIVE_ENROLLMENT_STATUS	Active integration enrollment status	Sequence:	[input]	
Value:	[dropdown: RW]				
Description:	**Web Registered**	User ID:	BASELINE	Activity Date:	07-SEP-2006
Translation:	[input]				

Setting:	ACTIVE_TERM	Active Term	Sequence:	[input]	
Value:	[dropdown: 200710]				
Description:	Fall Semester 2006	User ID:	KBUNTE	Activity Date:	05-OCT-2006
Translation:	[input]				

Setting Code; press LIST for valid codes.
Record: 1/? | ... | <OSC>

Refer to the *Integration for e-Learning Banner Administration Guide* where individual configuration settings that control aspects of your institution's integration are described.

Setting Up GORICCR

A full list of GORICCR settings is located in Appendix A of the *Integration for e-Learning Banner Administration Guide* under “Set Integration Configurations (GORICCR).” This includes special settings to support Multi Institutional Functionality (MIF) with VPD processing.

During the installation of Intcomp 7.3, current Intcomp GTVSDAX settings will be migrated to GORICCR. This migration is achieved using the `goriccri70300.sql` script. Once the data values are migrated, the old GTVSDAX settings are no longer required and will be deleted by the `gtvsdaxd70300.sql` script. During this process, a text file called `gtvsdaxd70300.txt` is generated to provide a record of your old GTVSDAX settings.

Note that the new settings will be grouped under the ELEARNING Process code as described above.

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Section 4 TracDat Functionality Support

A Banner Intcomp modification now adds the publication of Administrative Employee Department Groups and Administrative Employee Department Memberships.

Administrative Employee Department Group

Group information is selected from PTVORGN unless Banner Finance is installed. When Finance is installed, FTVORGN is the source of the information.

The sourcedID/ID of the group in a *non-finance* environment consists of the literal 'ADEP' concatenated with the PTVORGN code. The 'ADEP' literal is used to prevent naming conflicts with other IMS objects. The PTVORGN code is used again as the group's short description. The PEBEMPL description is used as the group's long description.

The sourcedID/ID of the group in a finance environment is selected from the Organization Validation Table (FTVORGN). This consists of the literal 'ADEP' concatenated with the Chart of Accounts Code + Origin Code. Note, using the Chart of Accounts Code provisions for those institutions that implement multiple charts. When selecting the finance records, a number of filters are used to select the correct records. For example, Intcomp will select only organization records that are related to active Chart of Account records. The Chart of Accounts Code + Origin Code is used again as the group's short description. The Chart of Accounts Code + Origin Code title is used as the group's long description.

Example

```
<group>
  <sourcedid>
    <source>Banner University</source>
    <id>ADEPB11103</id>
  </sourcedid>
  <grouptype>
    <scheme>Luminis</scheme>
    <typevalue level="1">Department</typevalue>
  </grouptype>
  <description>
    <short>B11103</short>
    <long>Div Computer Information Systems</long>
  </description>
</group>
```

Administrative Employee Department Membership

Employee membership information is created based on the criteria listed below:

- Membership information is selected from the employee base table (PEBEMPL).
- If a population selection is included, only people within that population will be considered for membership.
- The group sourcedID/ID in a non-finance environment will consist of the literal 'ADEP' concatenated with the Home Organization code of the employees.
- The group sourcedID/ID in a finance environment will consist of the literal 'ADEP' concatenated with the Chart of Accounts Code (pebempl coas) to which the employee's documents such as checks are distributed, plus the Home Organization code (pebempl orgn) of the employee.
- The member sourcedID/ID will be the person's GOBSRID SOURCED ID, selected using the PEBEMPL PIDM.

Example

```
<membership>
  <sourcedid>
    <source>Banner University</source>
    <id>ADEPB11103</id>
  </sourcedid>
  <member>
    <sourcedid>
      <source>Banner University</source>
      <id>4802</id>
    </sourcedid>
    <idtype>1</idtype>
    <role roletype = "04">
      <status>1</status>
    </role>
  </member>
</membership>
```


Modifications to Current ICGORLDI Job Submission Parameters

<i>Parameter Number</i>	<i>Name</i>	<i>Valid Values</i>	<i>Required</i>	<i>Length</i>	<i>Source Form</i>
7	Extract Institution Department	<p><i>B</i> = Extract both academic and administrative departments</p> <p><i>F</i> = Extract academic departments only</p> <p><i>E</i> = Extract administrative departments only</p> <p><i>N</i> = Do not extract departments (Default)</p>	Yes	1	STVDEPT PTVORGN FTVORGN
Parameter 14	Faculty / Employee Departments	<p><i>B</i> = Extract department (s) associated with both faculty members and employees.</p> <p><i>F</i> = Extract academic department (s) associated with faculty members.</p> <p><i>E</i> = Extract administrative departments (s) associated with employees.</p> <p><i>N</i> = Do not extract department memberships. (Default)</p>	Yes	1	SIAINST PEAEMPL

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Section 5 RPEs

The following RPEs are delivered with this Integration for e-Learning Banner Intcomp 7.3.

Time frame element in the LDIENROLL object

CMS-RPE41212

Request: Include a time frame element that is based on either standard course section dates or student enrollment dates.

Solution: The LDIENROLL object has been changed to include a time frame element.

- For students enrolled in course sections using Open Learning Functionality (OLR), the student enrollment begin and end dates will be published in the LDIENROLL object / event.
- For students enrolled in standard course sections, the section begin and end dates will be published.

Example:

```
membership>
  <ourcedid>
    <source>Banner University</source>
    <id>4.200621</id>
  </ourcedid>
  <member>
    <ourcedid>
      <source>Banner University</source>
      <id>14105</id>
    </ourcedid>
    <idtype>1</idtype>
    <role roletype = "01">
      <status>1</status>
      <timeframe>
        <begin restrict = "1">2006-04-01</begin>
        <end restrict = "1">2006-05-01</end>
      </timeframe>
      <interimresult resulttype = "MidTerm">
        <mode>Standard Letter</mode>
      </interimresult>
      <finalresult>
        <mode>Standard Letter</mode>
      </finalresult>
      <extension>
        <gradable>1</gradable>
      </extension>
    </role>
  </member>
</membership>
```

Registration Status Codes for Integration

CMS-RPE49039, CMS-RPE46973, 1-D6YAJ

Request: Banner Intcomp rules for indicating a valid enrollment do not always fit with client registration status rules maintained on STVRSTS. This makes it difficult to determine which of their enrollments are in active status.

Solution: Integration for e-Learning functionality regarding the creation of enrollment objects and events has been modified.

A new ACTIVE_ENROLLMENT_STATUS setting was created in GORICCR. Also modified were:

- icsfkcom (LDIENROLL event processing)
- icsfkgex (grade exchange) packages
- ICGORLDI process

These will replace the STVRSTS query with a call to gb_integ_config.f_exists to determine which enrollments are active.

Learner Access
Restrict Code

CMS-RPE46946

Request: Create a restriction that limits a learner's access to a specific time frame.

Solution: The baseline Banner LDI logic generates a "begin restrict" and "end restrict" code of 0 for the time frame within a course section object, both in the extract and in events.

For example, here is a snippet of what this might look like in the ICGORLDI extract output file:

```
<timeframe>  
  <begin restrict="0">2005-08-22</begin>  
  <end restrict="0">2005-12-17</end>  
</timeframe>
```

When the code is set to the 0 default value, learner access is not restricted. Your institution may prefer to have the access restricted to the begin and end dates. To achieve that functionality, change the "begin restrict" and "end restrict" code from a value of 0 to a value of 1.

Caution: Before changing the delivered settings, please refer to partner documentation on the effect of changing these values.

This functionality is controlled by six settings on the GORICCR form. If your institution prefers to have learner access unrestricted, a Boolean Yes/No flag will control whether the restrict value will be 0 or 1. The individual GORICCR settings for the enrollment, section, and term objects are listed below:

RESTRICT_ENROLL_BEGIN_TIMEFRM

RESTRICT_ENROLL_END_TIMEFRM

RESTRICT_SECTION_BEGIN_TIMEFRM

RESTRICT_SECTION_END_TIMEFRM

	RESTRICT_TERM_BEGIN_TIMEFRM
	RESTRICT_TERM_END_TIMEFRM
GOREMAL Preferred Indicator	<p>CMS-RPE47571</p> <p>Request: Stop using GOREMAL Preferred Indicator when selecting an e-mail address.</p> <p>Solution: Allow an ICEMAIL setting (previously in GTVSDAX, but now in the new table GORICCR) to have multiple entries with sequence numbers.</p> <p>During an LDIPERSON event, GORICCR pulls only those e-mail records with e-mail types cross referenced in GORICCR ICEMAIL records. These records are sorted by GORICCR sequence number if multiple values exist.</p> <p>If no records are returned using the above select, then GOREMAL records with a preferred indicator are selected, without joining to GORICCR. This assumes that, if the client has not defined any ICEMAIL records, then they must want to select via preferred indicator.</p> <p>This change will also allow for a scenario where the client does use ICEMAIL records, but a particular person does not have any of the ICEMAIL-specified e-mail addresses; so, rather than not synchronizing any e-mail addresses for that person, if the preferred e-mail is available, it will be the one synchronized.</p> <p>Objects modified: icspkcol.sql</p>
Synchronize enrollments and assignments when third party access fields are valued	<p>1-12TLZG</p> <p>Request: Synchronize enrollments and assignments when third party access fields are valued.</p> <p>Resolution: When a Third Party / Login ID and / or PIN is changed from null to a value, Intcomp will send an LDIPERSON event. Intcomp will also automatically send any child events such as LDIENROLL or LDIASSIGN events.</p> <p>Technical Resolution: In GOBTPAC trigger logic, set CREATEALL action when the pin or external user is valued. Test if the external user or PIN columns were changed from null to a value. Test to determine whether institution is in a MIF environment using a call to <code>banseccr.g\$_vpdi_security.g\$_is_mif_enabled</code>. If external user or pin was valued, and there is no MIF environment, set the action to CREATEALL.</p>
Employee Data for TracDat	<p>1-GT2V2</p> <p>Request: More flexibility in setting up Staff and their related information via ICGORLDI for its subsequent import into TracDat.</p> <p>Resolution: The extract was modified to accommodate employee department data.</p>

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Section 6 Problem Resolutions

The following problem resolutions are delivered with Integration for e-Learning - Banner Intcomp 7.3.

User-defined roles

1-00EZ8

Description: User-defined roles were not being pulled in the ICGORLDI extract output.

Impact: User-defined roles did not function.

Resolution: Dynamic validation of roles is done at runtime when the process is run from Job Submission. This is done in Job Submission by specifying the use of `icgokpval.p_valid_sqr_code` in GJPDEF. However, duplicate validation in the process itself was redundant. This validation is based on a static list of role values and therefore out of synchronization when custom roles are added. The solution is to remove this duplicate validation.

```
Get_persons(OPEN_CURSOR);
Get_persons(NEXT_ROW);
If (compare(person_code,"FACULTY",EQS) ||
    compare(person_code,"STUDENT",EQS) ||
    compare(person_code,"PROSPECT",EQS) ||
    compare(person_code,"APPLICANT",EQS) ||
    compare(person_code,"INTACCEP",EQS) ||
    compare(person_code,"APPACCEP",EQS) ||
    compare(person_code,"EMPLOYEE",EQS) ||
    compare(person_code,"DEVELOPMENTOFFICER",EQS) ||
    compare(person_code,"ALUMNI",EQS) ||
    compare(person_code,"FRIENDS",EQS) ||
    compare(person_code,"FINANCE",EQS) ||
    compare(person_code,"BANNERINB",EQS) ||
    compare(person_code,"ALL",EQS)) {
    write_person_common();
}
get_persons(CLOSE_CURSOR);
becomes
get_persons(OPEN_CURSOR);
get_persons(NEXT_ROW);
if(!compare(person_code, "NO", EQS)) {
    write_person_common();
}
get_persons(CLOSE_CURSOR);
```

Note: Processing stops when "NO" roles are required.

No role validation occurs when the process is run from the server. This is consistent with the processing of other parameters such as Term.

Zero data returned for LDICOURSE event in a VPD configuration

1-BGR7Z

Description: Zero data are returned for a LDICOURSE event in a VPD configuration.

Impact: In a non-VPD environment, data are returned and the LDICOURSE event work as designed. But data should be returned and the LDICOURSE event work in a VPD configuration as well. The current work-around is to create course data via the extract process or via the On Demand synchronization process. Note that for On

Demand, the institution context must be set by another event.

Resolution: This issue existed only in a VPD environment when STVTERM was not VPD and SOBTERM was VPD because SOBTERM_PROFILE_SEND_IND was used to identify active terms. GORICCR_ACTIVE_TERM records now identify active terms rather than SOBTERM_PROFILE_SEND_IND since GORICCR is a common settings table that is not expected to be VPD'd.

Population
selection extract

1-TNUSX

Description: ICGORLDI ignores population selection when selecting person data.

Impact: ICGORLDI is not using a population selection as input when selecting person data. This results in incorrect user data being extracted.

Resolution: A current line of code was replaced by another.

Current line: " static CHAR2 pop_sel_ind; "

Replacement line: " static CHAR2 pop_sel_ind = ";

Course Cursor

1-J6CFI

Description: The icsckcom.f_get_course function contains a cursor, scbcrse_c, that impedes performance.

Impact: Performance Issue

Resolution: The cursor scbcrse_c was modified to correlate the subquery on the SCBCRSE table with the main SCBCRSE query by joining on the subject code and course number columns.

LDICOURSE
event with no
SourcedID

1-YFAMM

Description: LDICOURSE events were being created with no SourcedID value.

Impact: Events without a SourcedID cause LMG to fail and stop event processing.

Resolution: Additional logic was added to ensure that no event data are sent to the Event Queue when subj_code and crse_num are null. This change was made in the P_SEND_COURSE procedure.

User Profile
Maintenance
FOMPROF

1-1655Z9

Description: An exception occurred upon inserting, updating, and deleting information on the User Profile Maintenance form (FOMPROF) if the record did not have a GOBEACC record corresponding to the fobprof_user_id.

Resolution: The FT_FOBPROF_AR_LDI trigger was modified. Now, when data are inserted, updated, or deleted on FOMPROF, LDIPERSON events are sent only when persons have GOBEACC records corresponding to their fobprof_user_id.

Section 7 Objects

The following processes, installation scripts, and seed data are included in Banner Intcomp 7.3.

In the following table, script Types are:

c c processes
Plus Seed data
dbprocs Database procedures

<i>Script Name</i>	<i>Type</i>	<i>New</i>	<i>Obsolete</i>	<i>Database Object Name</i>
icgokcom.sql	PL/ SQL	No		
icgokco1.sql	PL/ SQL	No		
icgokro1.sql	PL/ SQL	No		
icsckld1.sql	PL/ SQL	No		
icsckco1.sql	PL/ SQL	No		
icsikli1.sql	PL/ SQL	No		
icsokco1.sql	PL/ SQL	No		
icsokld1.sql	PL/ SQL	No		
icsokli1.sql	PL/ SQL	No		
icsotterm5.sql	Trigger	No		
icspkco1.sql	PL/ SQL	No		
icspkcom.sql	PL/ SQL	No		
icsskco1.sql	PL/ SQL	No		

<i>Script Name</i>	<i>Type</i>	<i>New</i>	<i>Obsolete</i>	<i>Database Object Name</i>
icsskld1.sql	PL/ SQL	No		
icsfkco1.sql	PL/ SQL	No		
icsfkcom.sql	PL/ SQL	No		
icsfkld1.sql	PL/ SQL	No		
icsfkge1.sql	PL/ SQL	No		
iccheck.sql	PL/ SQL	No		
icgorldi.pc	C Process	No		
icjb70300.sql	Seed Data	Yes		
icjc70300.sql	Seed Data	Yes		
icjd70300.sql	Seed Data	Yes		
gobicpsi70300.sql	Seed Data	Yes		
goriccri70300.sql	Seed Data	Yes		
gtvicsni70300.sql	Seed Data	Yes		
gtvsqpri70300.sql	Seed Data	Yes		
icsotterm5.sql	Trigger	No		
icsotterm6.sql	Trigger	No		
icgoticcr1.sql	Trigger	Yes		
icgoticcr2.sql	Trigger	Yes		
icgotemal5.sql	Trigger	Yes		

<i>Script Name</i>	<i>Type</i>	<i>New</i>	<i>Obsolete</i>	<i>Database Object Name</i>
gorrsq1u70300.sql	Seed Data	Yes		
gtvsdaxd70300.sql	Seed Data	Yes		
icvpdconficcr70300.sql	Seed Data	Yes		
icvpdroleiccr70300.sql	Seed Data	Yes		
icgottpac19.sql	Trigger	No		

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