

May 27, 2004

## **APPLICATION FOR 2004 LARRY L. SAUTTER AWARD FOR INNOVATION IN INFORMATION TECHNOLOGY**

*University of California, Riverside - GROWL Web to CICS Interface*

### **Introduction**

In 1997, the University of California, Riverside (UCR) installed middleware (purchased from Edify Corporation) to “web enable” its legacy Student Information System (SIS). By 2002, UCR’s enrollment had grown to approximately 15,000 students (the campus had added about 1,000 students per year during this five year period). *This rapid campus growth resulted in an operational crisis.* UCR’s student self-service web applications were no longer responsive during peak registration periods (these products had become literally unusable during the first and second week of classes). All web development ceased and Edify was asked to bid on the hardware and software upgrades required to accommodate UCR’s increased workload. The bid response was troubling: a relatively minor improvement to the middleware infrastructure would cost \$350,000 in license fees and \$50,000 per year thereafter for maintenance. *Computing and Communications had to find a better solution.*

Recent releases of IBM’s OS/390 mainframe software include *web service facilities*. Using these web facilities available directly on the mainframe, C&C developed a mini-portal for UCR’s student body: *a highly available, responsive, and scaleable “window into the world of student self-service applications”*. The first application to run under this new infrastructure was a “grades display” utility, and the service was thus named GROWL (GRades and Online Web Links).

### **Benefits Resulting from New GROWL Environment**

- *GROWL was introduced to campus without any INCREMENTAL COSTS.* Indeed, C&C obtained NO NEW FUNDING TO ELIMINATE THE EDIFY MIDDLEWARE. In fact, just the opposite is true: GROWL was implemented during a time of budget reductions.
- *GROWL utilizes existing COBOL libraries, I/O routines, etc.* dramatically improving programming productivity.
- *GROWL is responsive:* All student self-service web applications are available with immediate response, even during peak registration periods.
- *GROWL is scaleable:* During the past two years, NEW web self services applications have been added to GROWL and most Edify applications have been ported to the new environment.
- *GROWL has promoted a renewed sense of energy, collaboration, and creativity* in both C&C and the Vice Chancellor of Student Affairs office: non-traditional applications are now offered under GROWL, such as the “Survey of the Week” systems.

## **Self Service Applications Available Under GROWL**

The following self-service applications are CURRENTLY available under GROWL (or will be ported over from the Edify platform by December of this year):

On-line Grades Display

On-line Statement (Billing Statement as of a particular due date)

On-line Current Account Activity (up to the moment student account / billing status)

On-line Course Confirmation / Class Schedule

On-line capability to Display/Change FERPA Settings

On-line capability to Change Student Pin

On-line capability to Display Student ID

On-line capability to Accept/Decline Financial Aid Awards *New last 12 months*

On-line capability to Request Financial Aid Award Revisions *New last 12 months*

On-line capability to Calculate and Display Summer Session Fees *New last 6 months*

On-line capability to Request Summer Session Financial Aid *New last 6 months*

On-line capability to Accept Credit Card Payments *New last 30 days*

On-line Address Change *Migration from Edify to GROWL within 30 days.*

On-line Financial Aid Packaging *Migration from Edify to GROWL within 60 days.*

On-line Degree Audit *Migration from Edify to GROWL within 90 days.*

On-line Registration and Wait List *Migration from Edify to GROWL within 180 days.*

Other:

On-line Access to VCSA Survey of the Week

Planned On-line Access to Admissions Application Status Web Site

## A Look at GROWL

The screenshot shows the GROWL (University of California Riverside) student portal. At the top, a dark blue banner features the text "UNIVERSITY OF CALIFORNIA RIVERSID" in gold, "GROWL Welcome" in white, and a stylized gold and blue graphic. Below the banner is a yellow sidebar menu with the following items: Registrar (Enrollment, Degree Check, Addresses, Grades, Classes, Change Pin, Privacy, Student ID), Billing (Statement, Current Activity, Summer Bill), Financial Aid (Application Status, Award Status, Revision, Request for Summer Aid), Survey of the week (with a document icon), and Exit. The main content area is white and displays "You are currently logged on." followed by two red security warnings: "\*\*\* To keep your records secure, BE SURE to sign off \*\*\*" and "\*\*\* the system by pressing the EXIT button when you are finished. \*\*\*".


UNIVERSITY OF CALIFORNIA RIVERSID

**GROWL** Welcome

**Registrar**  
Enrollment  
Degree Check  
Addresses  
Grades  
Classes  
Change Pin  
Privacy  
Student ID

**Billing**  
Statement  
Current Activity  
Summer Bill

**Financial Aid**  
Application Status  
Award Status  
Revision  
Request for Summer Aid

Survey of the week 

Exit

You are currently logged on.

\*\*\* To keep your records secure, BE SURE to sign off \*\*\*  
\*\*\* the system by pressing the EXIT button when you are finished. \*\*\*

After logging in, students are presented with the main GROWL site, listing all available applications.

**GROWL** Billing Statement

Registrar  
 Grades  
 Classes  
 Change Pin  
 Privacy  
 Student ID

Billing  
 Statement  
 Current  
 Activity  
 Summer Fees

Financial Aid  
 Award Status  
 Revision  
 Request for  
 Summer Aid

Survey of  
 the week

Exit

Please select the Month for which you would like to see your statement:

March 2004 STATEMENT MONTH

**Statement of Account**

Federal Tax ID No. 95-6006142 (2004 Spring )  
 Deferred Payment Plan Apps will be accepted through 4/16/04 for Spring Quarter.

Please include [Remittance form](#) with payment.

Billing Date	Payment Deadline	Description	Amount	Make a Payment
03/22/2004	04-15-2004		0.00	<a href="#">Make a Payment</a>

**Account Summary**

Date	Ref.	Description	Charges	Credits
		<b>PREVIOUS OTHER BALANCE</b>	4,202.25	
03-01-04	TUCALC	CHEMISTRY COURSE FEE	40.00	
03-01-04	TUCALC	PHYSICS COURSE MATERIAL FEES	20.00	
03-05-04	WAV04S	UGRAD HLTH INS PREM WAVR - S		172.50
03-19-04	SBA590	PELL GRANT		1,350.00
03-19-04	SBA590	CAL GRANT B		1,660.00
03-19-04	SBA590	CAL GRANT B STIP		517.00
03-19-04	SBA590	UCR GRANT		803.00
03-19-04	BRS915	REFUND CHECK	240.25	
		<b>PREVIOUS HOUSING BALANCE</b>		2,220.00
03-15-04	BB-APR	BBURN - RENT/UTIL/GRGE/MISC	2,220.00	

Failure to pay Spring 2004 tuition and fees by 4PM on 4/16/04 will result in a loss of student status.

For more information on your statement click [here](#)

The Statement of Account Displays the “Monthly Statement” which provides the amount due (as well as the due date). Historically, UCR mailed this statement to students. Currently, on the day the statement is produced, the student receives e-mail notification that statement is available, saving tremendous amounts of time and money.

- Registrar
- Classes
- Change Pin
- Privacy
- Student ID
- Billing
- Statement
- Current Activity
- Summer Fees
- Financial Aid
- Award Status
- Revision
- Request for Summer Aid
- Survey of the week
- Exit

This 2004-2005 academic year financial aid award summary below represents your most recent financial aid package and may supersede a previous award.

Your financial aid award is based on your status as an **undergraduate California resident living on campus**. If this is **incorrect**, or you have any other changes in your status **request a revision now**.

Your current financial aid award was generated on June 3, 2004. This award may be subject to change. UCR reserves the right to modify financial aid awards at any time due to changes in your financial aid eligibility, changes in program terms, coordination with resources you receive, or changes in the availability of our funding.

Please accept or decline your awards by July 3, 2004.

Cost of Attendance		Determination of Financial Need	
Fees	\$6,684	Total Cost of Attendance	\$20,984
Room and Board	\$9,800	Parent Contribution	\$0
Books and Supplies	\$1,600	Student Contribution	\$0
Transportation	\$1,300	Total Family Contribution	\$0
Personal Costs	\$1,600		
Total Cost of Attendance	\$20,984	Total Financial Need	\$20,984

Financial Aid Award	Accept	Decline	Partial/Accept	Total	Summer	Fall	Winter	Spring
FEDERAL PELL GRANT	<input type="radio"/>	<input type="radio"/>		\$4,050	\$1,350	\$1,350	\$1,350	
UCR GRANT	<input type="radio"/>	<input type="radio"/>		\$2,410	\$804	\$803	\$803	
FEDERAL DIRECT STAFFORD LOAN	<input type="radio"/>	<input type="radio"/>	\$	\$3,000	\$1,000	\$1,000	\$1,000	
FEDERAL DIRECT PARENT PLUS LOAN	<input type="radio"/>	<input type="radio"/>	\$	\$6,000	\$2,000	\$2,000	\$2,000	
<b>TOTAL</b>				<b>\$15,460</b>	<b>\$5,154</b>	<b>\$5,153</b>	<b>\$5,153</b>	

- Read the Financial Aid Notification Guide for more information regarding the awards listed above.
- You must accept or decline all of the awards listed above, and click on "Submit" at the bottom of this page in order to confirm your awards. Your financial aid offer is not valid until you complete these steps. If you have previously accepted your awards, they will show as "accepted" above. If all of your awards are currently showing as "accepted", no further action at this site is needed.
- To check on actual aid disbursements, go to Current Activity.
- Your financial aid counselor is Theresa Luther.

#### Student Responsibilities and Authorizations

- I agree to report to the UCR Financial Aid Office any change in my financial, academic, marital, enrollment, or California residency status, and any additional funds or support I receive from any source (which may result in the reduction of awards and/or require repayment of financial aid already advanced.) In particular, receipt of all Graduate Division awards, fee remissions, tuition waivers, GGHIPs, and Veteran's Benefits, must be reported to the Financial Aid Office immediately.
- I understand that I must be enrolled at least half-time (6 units) to receive my full financial aid award and agree that if I withdraw or cease to carry the required number of units, I will make arrangements with Student Business Services Office to repay any aid advanced to me for which I am no longer eligible. I am also aware that to continue to receive assistance, I must maintain satisfactory academic progress in the course of study I am pursuing according to the UCR policy on Satisfactory Academic Progress in the UCR Financial Aid Notification Guide.
- I understand that if I accept either a subsidized or unsubsidized Federal Direct Stafford Loan, Federal Perkins Loan, or University Loan, I must complete and return a promissory note. I understand that if I am borrowing a loan for the first time at UCR, I must complete pre-loan counseling before loan funds will be applied to payment of fees or before any loan refund checks or direct deposits will be issued.
- I understand that my financial aid, including Cal Grant B Subistence Stipends, will be credited to my current year charges for tuition, fees and University room and board on my UCR student account. By submitting this Financial Aid Award document, I authorize the Financial Aid Office to also credit any other current educationally related charges on my student account from my current financial aid. I understand that I can request in writing that non-fee charges not be paid automatically by my financial aid, but that if I do not provide this authorization, I must pay all other charges from personal funds. I also authorize the Financial Aid Office to pay any prior year unpaid charges of \$100 or less, from my current year financial aid. I understand that if I do not authorize financial aid to credit all types of charges on my UCR student account, or to pay prior year charges still outstanding, I will provide this information in writing to the Financial Aid Office and I understand that I must then pay the balance from personal funds before my current year financial aid may be disbursed. I understand that prior year charges in excess of \$100 generally must be paid from personal resources.
- I understand that I am responsible upon withdrawal for repaying any funds I receive which cannot reasonably be attributed to meeting my educational expenses at the University of California, Riverside and that the amount of any repayment is based on federal and state regulations.
- I understand that I am responsible for reading the UCR Financial Aid Notification Guide.

By submitting this document, I hereby accept/decline my awards as indicated. I understand my responsibilities, and I have authorized the credit of my financial aid to my student account as specified in the Student Responsibilities and Authorizations.

Submit Cancel

Students are also e-mailed the day their financial aid awards are available; they sign on to GROWL and accept or decline their awards. For loans, they can also reduce the amount requested.

- Registrar
- Enrollment
- Degree Check
- Addresses
- Grades
- Classes
- Change Pin
- Privacy
- Student ID

- Billing
- Statement
- Current
- Activity
- Summer Bill

- Financial Aid
- Application
- Status
- Award Status
- Revision
- Request for
- Summer Aid

- Survey of the week

Exit

This page allows you to view the degree requirements you have completed as well as the ones you still need to complete.  
**Please note: This page is for informational purposes only. Please see your academic advisor for your official status.**

**Current Academic Program Summary**

College: Graduate Division  
Degree: Master of Science  
Major: Electrical Engineering  
Catalog: Academic Year 2003-04

First, please select the information you want to see: All Degree Check Information

Warning: Due to the amount of information being gathered, it may take up to 30 seconds for your request to be completed.

Second, please select one of the four Degree Check requests below:

**Degree Check Request #1**

To perform a Degree Check on your **current major**, press here: OK

**Degree Check Request #2**

To perform a Degree Check on **another major**, fill in the fields below:

College: Engineering  
Degree: Bachelor of Arts  
Major: Administration  
Concentration (if applicable): None  
Catalog: 2003-2004 academic year

and press here: ?

**Degree Check Request #3**

To perform a Degree Check using **another minor**, fill in the field below:

Minor: African American Studies

and press here: ?

**Degree Check Request #4**

To perform a Degree Check on your **secondary program** (if applicable), press here: ?

Students can evaluate progress toward their degree. Students can run a degree check on their current programs or evaluate a different program.

## **Technical Overview**

GROWL uses 2 controlling (CGI) programs running in the web server portion of the mainframe communicating with 2 controlling programs running in CICS. The first CGI/CICS program pair authenticates and establishes a session. The second CGI/CICS program pair controls the student's session linking to various CICS programs depending on the student's request, logging activity, and timing out after periods of inactivity. As new applications are developed, the new applications simply "plug-in" to the existing control process.

## **Advantages of Mainframe Web Services**

- Real time access to student information
- Uses the same programming language (COBOL) and technology as the existing SIS programs
- Uses existing shared I/O routines for SIS files
- Uses existing libraries for source and load module management
- Uses existing CICS/VSAM data integrity process
- Uses common calculation and update routines
- No extra hardware required
- No extra system software required
- Flexible growth and expansion
- Virtually unlimited growth potential

## **Customer Satisfaction**

Students:

Students can now view billing statements, current activity, grades etc. as soon as they are available within SIS. They can also update their FERPA settings and pins as well as accept or decline financial aid immediately, or request revisions from the comfort of their homes, dorm rooms, or even while traveling on vacation. There are fewer lines to wait in and less of a need to even walk through the administration building.

Staff:

Financial Aid Counselors no longer have to manually post approximately 30,000 award letter accepts/declines. They are not handling paper requests for revisions. The Registrar's Office is no longer processing paper FERPA requests or reprinting course confirmations for students. And, since GROWL was designed to authenticate with either SSN or Student ID, when a student forgets his Student ID, he can sign on to GROWL using his SSN, and display his SID.

## **Testimonials**

“What a massive time saving this will be for the Operations unit not having to open the mail and post all of these awards. I continue to be filled with delight about how well this is going. “

- Patsi Anderson, Associate Director, Financial Aid

“I emailed one of my EAP student's this morning that was already in Mexico and extended to a Fall program and told her to access Growl to accept her 03-04 award. She responded back within 10 minutes and had accepted her awards and I confirmed the acceptance! She really appreciated the convenience and the fact that we could expedite her award being forwarded to her in another country!! She gives us a Thumbs Up!!!!”

- Janice Owens, Financial Aid Counselor by way of Sheryl Hayes, Director, Financial Aid

“All:

I stumbled on this comment while browsing live journal with UCR as the theme.  
Great Job All!

Entry Posted at 4:41pm (today, Friday, 4/23/2004)

"Hey guys, they changed the layout for Growl...it looks really nice, go check it out! :) They should change the layout for Paws too. This school is slowly getting better and better, and will be great after the new Commons is built. "

-Tom”



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