

HORIZONS

Bring Your Post-Relational Database to the World Wide Web: USCSS Announces TOADS/Web

USC Software Systems announced the release of TOADS/Web Server in January and will present it at the International Spectrum Conference at the Anaheim Convention Center this Spring. The TOADS/Web Server represents the only product of its kind: an easy-to-use set of tools to access your post-relational database on the World Wide Web. Used with the award-winning TOADS 4GL rapid application development system, TOADS/Web merges the best of database design with the power of the Internet, all at your fingertips.

Until the early 1990's, the Internet was a largely text-based file-sharing network for research scientists and academics. The development of HTML (Hyper Text Markup Language) showed that related files could actually be accessed easily, with a graphical interface. People quickly realized that with the ease of HTML, they could publish documents that could bring up related graphs, research data, and papers, and more importantly, access non-research items. As PCs and networks continued to become more powerful, sound and multimedia were added to the HTML



TOADS/Web Server makes forms easy to create.

standard. This region of the global network, the World Wide Web, opened the Internet to the general public and released the "Net" from its ivory tower.

In the past year, many businesses have jumped onto the Web. Most, however, have only offered text-based information, some nice logos and the occasional email address. They haven't

connected the Web user to their most important asset: the corporate database. It seems as though businesses can't afford or aren't able to develop sophisticated forms for users to read and update their databases. TOADS/Web Server makes it possible for any department or company to take their data warehouse to the World Wide Web with ease.

TOADS/Web Server allows users to develop forms in the simplest manner possible by using the TOADS 4GL system to paint real processes. As with all TOADS processes, these are accessible from normal serial or network connections. More importantly, they can be published as HTML forms onto an existing Web server and can be displayed as a typical HTML form. It's really quite easy. Instead of installing your TOADS process into a production account, you just install it into the TOADS/Web account (or set up your production account as a TOADS/Web account — either way works just the same). These forms can then be accessed from any Web browser in the

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Minnesota, Ohio, Oklahoma Join GAMS Consortium: Latest Members Part of Growing University List

USC Software Systems announced that the University of Minnesota, Ohio State University, and Oklahoma State University have joined North Carolina State University, the University of Southern California, and IBM in the GAMS Consortium in the first quarter of 1996. The new members pledge their names to the growing list of Universities interested in forging a new electronic standard for grant applications and management.

The Grant Application Management System (GAMS) was created jointly by NCSU, IBM, and USC Software Systems. This system works to improve the efficiency and accessibility of the grant application process at all stages of the grant cycle.

The Pre-Award stage represents the most crucial, complex, and complicated aspect of the grant cycle. At this stage the grant applicants write the proposal, project

a budget, and obtain approval for each application. An efficient and successful grant application process requires that accurate data be delivered to the greatest number of people as quickly as possible. GAMS assists the Pre-Award phase of any application by providing a rules-driven, guided and consistent process that enables faculty and their administrators to swiftly build accurate proposals that conform to sponsor and institutional policies and procedures. Also, by making proposal information available online instantly, the time frame required to analyze and approve these proposals is reduced. The Pre-Award stage represents the impetus for information tracking, too. From concept to completion of a project, all data can be located according to when and by whom it was entered.

For the Agency Review phase of the grant cycle GAMS maintains budget and technical information in a

database. When the agencies convert to a fully electronic (paperless) process, GAMS proposals will even be able to be sent via the Internet and distributed electronically to peer reviewers. GAMS also could record agency responses and status automatically.

The final step in the grant cycle, the Post-Award Process addresses many of the accounting and budgeting issues of grant funding. GAMS provides a link to the standard accounting systems of the university to automatically convert proposal budget information to accounting system object codes. A rules-guided process accomplishes budget revisions in cooperation with the financial accounting system. GAMS also assures more complete information about award contract terms, due dates, and compliance information which will facilitate a researcher's project management. GAMS Consortium continued on page 4

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TOADS (Total Online Application Development System)- TOADS, the award winning 4GL application development system gives you the power to create quick, programming-free business solutions that work the way you work. The latest release brings a broad range of functionality features and options. Few systems are as easy to learn and use, or offer as much. A ten-year service support guarantee accompanies each license.



**TOADS
GUI
CLIENT** **TG^C**

This unique client/server solution gives you the versatility of a consistent, intuitive graphical user interface that works across the Windows, Macintosh, and X-Windows platforms. Specially engineered to take advantage of each platform's unique features, TG^C takes the pressure off your server by performing functions remotely on the client without bogging down the server. The graphical user interface allows you to point, click, cut, and paste data and remains the same no matter which platform you use. TG^C enhances TOADS applications, as well as many other development systems' products.

Tips for TOADS Users

TOADS TOOLKIT now ships with every release of TOADS after version 9.3.R4. Although most TOADS users use TABLE pop-ups frequently, many may not know how easy it is to develop pop-ups on TRANSLATE files. TOADS TOOLKIT gives you this flexibility and then some. The TOADS Tips section will begin an on-going series on these features.

Let's start with the simplest example. Let's say you have a PROD file of products where the field layout looks like this.

Field Name	Type & Number	Conversion Cod	Column Heading	Output Format	Depth Assoc..
@ID	D	0	Product Code	5R	S
PROD.C	D	0	Product Code	5R	S
PROD.NAME	D	1	Product Name	20L	S
STOCK.STAT	D	2	Stock Status	1L	S
PROD.COST	D	3 MD2,	Product Cost	8R	S

Let's say you have a CUST file of customers where the field layout looks like this:

Field Name	Type & Number	Conversion Code	Column Heading	Output Format	Depth Assoc..
@ID	D	0	Customer ID	10R	S
CUST	D	0	Customer ID	10R	S
NAME	D	1	Name	20L	S
PROD.C	D	2	Prod Codes	5R	M PROD
PROD.NAME	I	TRAN(PROD,2,1,'X')	Products	20L	M PROD
STOCK.STAT	I	TRAN(PROD,2,2,'X')	Stock Status	1L	M PROD
PROD.COST	I	TRAN(PROD,2,3,'X')	Prod Cost	20L	M PROD

You may paint a TOADS screen where you enter a list of product codes that translates back the product name, status, and costs. And let's say we only want records with a status equivalent to Status Code (in this example, a screen item painted as STATUS.WANTED) entered elsewhere on the screen.

```
[ Customer # ] xxxxxxxxxxxx
[ Status Desired ] X
[ PRODUCT CODE ] NNNNN
+Description= xxxxxxxxxxxxxxxxxxxxxxxx
+Status      = x
+Cost        = $nn,nnn.nn
```

You may want to offer the end-user a pop-up list of products showing these same fields: name, status, and cost. Before TOOLKIT, there was no easy way to provide such a pop-up. The most direct way was to write a UNI routine to read up the TOADS Tips continued on page 4

A USCSS World Wide Web Update

USC Software Systems has reworked our Web pages to take full advantage of Netscape's burgeoning capabilities. We have expanded our pages to bring even more of our products into easy reach. Our new look includes more graphics, in-depth information, and even a TOADS-driven search engine, TOADS/Web Server. But that doesn't mean it will take you any more

time to access us, since we've streamlined our site for quick and easy access, no matter what speed you're running at.

Read about TG^C, our new multi-platform interface software, in a debut article describing this product's strengths and features. TG^C is the perfect tool for large office environments, able to run in Windows, Mac, or X-Windows concurrently.

Our TOADS page is bigger and better than ever! It now includes a complete summary and description of this powerful application development tool. Need a little help? In our summary you can also find quick and comprehensible answers to some of our most frequently asked questions.

Our GAMS page has also been expanded with detailed charts and explanations on how GAMS makes the grant process easier. A possible error could mean all the difference between receiving or losing a grant, and we'll show you how GAMS helps to keep that error from happening. Post-awards bookkeeping has never been easier either.

On several of our pages, you'll find icons that look like small screens. Clicking on the icon will bring up a screen shot which relates to the information on that page. Illustrations provide insights to several processes and procedures. Many of these helpful visuals come from our own in-house training courses and documentation. All this helps to make our page not only beautiful, but fully informative as

well!

Our Web page also premieres TOADS/Web Server. With TOADS/Web, you can now put your PICK-style databases directly onto the Web! With graphical design and updateable forms, you can design a beautiful graphic database that can be used inter- or intra-office, or even directly on WWW. Our TASS security system keeps your data secure, so no matter where it's used, you can feel safe. Our TOADS/Web page features a demo model of a restaurant guide.

If you're looking for the newest information for USC Software Systems, try our Newsflash! page. In the Newsflash! page, we keep downloadable back issues of our Horizons newsletter, as well as USC Software Systems press releases. You can also find late-breaking information on our products and TOADS training schedules.

If our page has you looking for even more information about our product, we have an easy

USCSS Web Update continued on page 4



TOADS At Work: North Carolina's Department of Community Colleges

Since it was first employed by USC to handle the registration of over 30,000 students twice yearly, TOADS has been at home in the academic environment. At the North Carolina Department of Community Colleges (DCC), TOADS is the rapid application development tool of choice. Here, the award-winning 4GL doesn't simply handle student registration. Instead, TOADS provides a complete computing solution for every aspect of education, and even a few very special programs.

Arthur Hohnsbehn, an analyst/programmer for the DCC, spoke with *Horizons* recently about the responsibilities of the DCC as well as TOADS' unique role in helping to ensure the education of North Carolina students. Mr. Hohnsbehn currently works on building TOADS processes that handle the curriculum, extension, small business, and literacy student records. Amidst the leading edge of this year's eastern cold spell in the DCC's offices- not far from the State Capital building in downtown Raleigh, North Carolina- Mr. Hohnsbehn took the time to discuss the features of the complete solution he and other DCC programmers have built with TOADS.

"We're not much different from a software house here," said Mr. Hohnsbehn of his and his colleagues' role in the DCC. "We're a service organization. We maintain the software here and ship

changes in the system as releases to the colleges."

The DCC uses TOADS with Prime Information databases to store all of North Carolina's data on student curriculum. The DCC maintains information about other kinds of courses students enroll in as well. Extension and small business records don't cover courses available for credit toward a degree, but are important in tracking the accreditation of students certifying in industry training, or even fire-fighting.

"We originally started the college computing system project as members of IIPS (Institutional Information Processing System)," said Mr. Hohnsbehn, "And we were working with Infocel's education package on a Prime 50 series." The DCC relied on Infocel to provide changes to the software package as they were required. In 1987, however, the DCC started to make their own changes to the software, but the pace became frantic. Mr. Hohnsbehn began working with the student curriculum records even then. "It got tough to keep our head above water after awhile," said Mr. Hohnsbehn. The DCC started shopping around for a simpler system that would keep them ahead of the constantly changing needs of the college computing system. They found TOADS. Since then, TOADS has helped them to stay on top of the required changes, as well as make innovations to the process that actually impact education in the state of North Carolina. "We're evolving as we go," Mr. Hohnsbehn said.



The DCC team: Committed to education computing solutions.

Perhaps the most extraordinary use for TOADS at the DCC was its first. "About the same time we got TOADS and were learning TOADS, we began to take a hard look at our literacy system," said Mr. Hohnsbehn. The DCC's literacy program is an extensive system designed to encourage students to read by letting them set their own goals. "One of the things that we're using, one of our critical success factors, is our goal tracking and achievement. It's hard to measure a sixty-five year old student who's never read a day in his life and doesn't want to earn a degree. They may not even register on any of our placement tests. They might just want to read their Bible," said Mr. Hohnsbehn, "So what we've had to do is develop a system that identifies their goal and tracks their progress toward achieving it."

Users maintain records that detail the progress of each student involved in the literacy program. This way, educators constantly improve the program by evaluating their successes and failures. When a student succeeds or fails, it's easy to look at the record to understand why. Each student's goal is maintained online, as well as his efforts to meet that goal. The focus isn't on a grade, but on the goal. "If they wanted to read the Bible when they got into the system and left able to, it's a success," said Mr. Hohnsbehn.

The DCC programmers, like many TOADS users across the world, have found in TOADS the tool that helps them to achieve their potential. In this case that potential is crucial to the education of North Carolina's community college students. ☀

International Spectrum Conference: USCSS Presents 'Web Beach'

Cowabunga! The Web surfer alert reports big waves being made in Southern California. The International Spectrum Conference at the Anaheim Convention center is just around the corner and USC Software Systems promises a few big surprises for this year's attendees, especially those that like to 'surf' the World Wide Web.

The Conference, held annually by International Spectrum, the news leader in the PICK, UNIX, DOS developers' arena, invites anyone looking for business computing solutions to investigate new products and attend

informative seminars held by respected experts in the computing industry. Past year's Conferences have produced large turn-outs that educate and inform attendees what products meet the needs of their businesses.

USC Software Systems plans to debut its latest product, TOADS/Web Server, at 'Web Beach,' an exposition co-hosted by IDBMA, the company that publishes *International Spectrum* magazine. The exposition will feature banks of PCs linked directly to the World Wide Web. Visitors to the 'Web Beach' expo can 'surf' the web and explore the potentials for business on it.

To demonstrate these potentials, the TOADS/Web Server, now available at the USC Software Systems website at <http://www.usc.edu/dept/uscss>, will be available for visitors to interact with and a seminar held by Melvin Soriano on Wednesday March 13, 1996 from 8:30 AM to 11:00 AM will introduce the concepts of the technology. USC Software Systems staff will be on hand at 'Web Beach' to answer questions and help new surfers get the most out of their first ride on the information supertide.

Members of the USC Software Systems staff will participate in several key seminars and panels. On Tuesday, March 12, 1996 from 2:00 to 3:00 P.M. Melvin Soriano will participate in the panel for "Migrating From PICK: Wouldn't You Like To Know What It Really Costs?" The panel, designed to be an informative and entertaining forum in the same vein as a television talk-show is a must for all attendees. Melvin Soriano can be spotted immediately after the panel from 4:00 to 5:00 PM presenting the five easy steps to process development using the latest release of TOADS. And, of course, there is the TOADS/Web Server introduction that was mentioned earlier in this article on Wednesday, March 13, 1996, from 8:30 AM to 9:45 AM.

The USC Software Systems booth #228, directly adjacent to the 'Web Beach' exposition, will be open to *Spectrum* continued on page 4

USCSS Expands Training Schedule

USC Software Systems has expanded its training series schedule to include hands-on tutorials with our newest products. From the beginning TOADS programmer to the advanced TOADS "superdeveloper," USC Software Systems' TOADS training courses offer users the opportunity to learn and explore the world of TOADS, step by step.

TOADS training offers a series of intensive sessions on all the functions of TOADS. Beginning with the basic structures, and developing simple generic processes, the training sessions lead up to the development

of more complicated processes that handle complex requirements.

In our newest classes, users can now learn to program on the TOADS/Web Server, which allows them to develop a TOADS process that can be "published" and viewed on the Internet. With a knowledge of TOADS/Web's potential, users can collect reams of information from prospects, customers, and internal users and feed it back into their own database. Developers will learn how to create TOADS/Web pages and use them as the centerpoint of a solid workflow solution.

Call USCSS to request the current Training Schedule and sign up for these exciting courses today!

TOADS/Web

As more businesses turn to the Internet for solutions, USC Software Systems recognizes the opportunities of the Web. However, producing forms that collect and display data securely can be a rough adventure into HTML and C-programming. But TOADS/Web makes it all easy. Using the industry-standard TOADS 4GL application development system you can develop display only or updateable forms in a snap and even change them on the fly. You can even take advantage of the Web's multimedia capabilities. Check out the TOADS/Web demo on the USC Software Systems homepage at <http://www.usc.edu/dept/uscss>.

INSIDE NEXT ISSUE

The next issue of *Horizons* is scheduled for release in the second quarter of 1996. Look for special coverage of TOADS in action at North Carolina Community Colleges, GAMS, IBM, and much more...

TOADS/Web from page 1

office or throughout the world. Just create a normal HTML document that points to the TOADS/Web Server and to your new process and anyone who knows about this HTML document can access your form. Although you will be defining a default look and feel to your forms, you can easily customize forms to have different backgrounds, colors and fonts.

Furthermore, TOADS can be customized *on the fly* with additional subroutines, and with TOADS/Web Server, you can change the look and feel of your forms either permanently or with respect to the data being accessed. For example, let's say you have a field in an inventory file that points to a graphic image in your database. You can have that image appear on your TOADS/Web form by adding a simple flag. Here are a few other flags that can be set to make forms development easier:

- display tables or translated files as a drop-down list (single or multiple selections)
- display tables or translated files as check boxes (great for multiple selections)
- display tables or translated files as radio boxes



HORIZONS' CONTRIBUTORS

<p>Editor In Chief Dianne Bozler</p>	<p>Editorial Staff Douglas Gorman Jennifer Love</p>
<p>Contributing Writers Melvin Soriano Douglas Gorman Kerry K. O'Rear Chris Price</p>	<p>Layout and Design Mariné Ter-Kazaryan Leigh Lloyd Anthony Contreras</p>

With Special Thanks To:

Arthur Hohmsbehn	Melvin Soriano	
Jamie McKee	Bernie Schmidt	Jannette Sánchez

- change the text of the default buttons (Add, Save, Search, . . .)
- suppress the default buttons or add new ones of your own

TOADS Web/Server allows users to accomplish what TOADS itself allows.

USC Software Systems will premiere the TOADS/Web Server at the *International Spectrum*

Conference held March 12-14 at the Anaheim Convention Center. A seminar is planned and demonstrations will be available at the USC Software Systems booth or at Web Beach, the World Wide Web exposition sponsored jointly by USC Software Systems and IDBMA. Visit any of these events and locations for more information about TOADS/Web Server. 🌅

A USCSS Web Update from page 2

online form for you! Just fill it out, and we'll send you information on any of our products. No fuss, no phones, no getting put on hold. Just type in a few lines and we'll do the rest. It's that simple.

Coming this Spring is our new CD Multimedia Demo for TOADS. We've set up an ordering form so that you can pre-order a CD today! If you're not sure about the CD, you'll soon be able to download a limited version of it direct from the Web. A must for anyone looking into our system.

Check out our page at <http://www.usc.edu/dept/uscss> often. We're adding new information all the time! 🌅

Spectrum from page 3

attendees throughout the Conference. Software Systems staff will be on hand to personally answer questions, distribute informative brochure, and conduct introductory TOADS seminars.

USC Software Systems looks forward to seeing you on the 'Web Beach' when International Spectrum brings its Conference to Southern California and the Anaheim Convention Center this spring. 🌅

GAMS Consortium from page 1

and compress the audit cycle.

NCSU, IBM, and USC Software Systems formed the GAMS Consortium both to provide a forum for research organizations and sponsors to reengineer the process of applying for, reviewing, and managing grants; and to deliver GAMS, a core information system, to support and manage the reengineered grant process.

Minnesota, Ohio, and Oklahoma State will join in the benefits of Consortium membership. Software development occurs in a cooperative environment for which funds are leveraged, making the process inexpensive and efficient. Innovations in the grant management process are implemented for all members, and help provide critical mass to influence agency trends (electronic submission and EDI, for example). Process improvement is supported immediately with end-to-end information tools. As more members join and the GAMS Consortium's goals gather momentum and members, participants increasingly find themselves on the cutting edge of a grant management revolution. 🌅

TOADS Tips from page 2

PROD file and then generate the pop-up manually. Of course the easiest way was to not offer the feature at all, forcing the users to simply memorize the codes.

Let's generate the pop-up definition. At the TCL/INFORM command prompt, type TDTK" to access the TOADS TOOLKIT main menu. Select the Pop-Up Definition process. Let's call this pop-up "GET.PRODUCTS". Notice that there are many ways to populate this pop-up. In this example, we can go to the "SELECT" field and enter the following command:

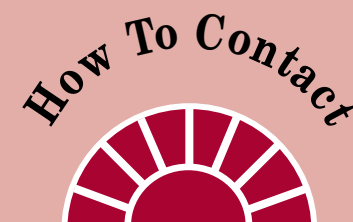
```
"SELECT PROD BY PROD.NAME WITH PROD.STAT = (STATUS.WANTED)"
```

We can enter as many sentences or paragraphs as are necessary to get our desired output. Now that we have selected records for the pop-up, let's display them. We go to page 2 of the Pop-up definition area and identify files, fields, formats, conversions and sort orders. For our example, we would list out all the fields in PROD that we wanted to see.

That's it! This pop-up definition is completed. We can update the definition and use it for our example. Moreover, we can use this pop-up definition in any TOADS field element where it would be appropriate!

Let's go back to the TOADS TOOLKIT menu and select the Execute Key Definition process. We identify the process and field element. For every process and every field, you can add a TOOLKIT entry. Notice that you can execute a myriad of functions from this definition screen. For our example, we will identify that the Execute Key for that field is the GET.PRODUCTS pop-up.

From this simple example, you can see that all sorts of pop-ups and ad hoc behaviors are possible from any TOADS field. Many of these behaviors are completely parameter driven, while others can be customized to perform paragraphs and other special functions. Tune in for the next issue where we will look at a more complex lookup feature. 🌅



USC Software Systems

USC Software Systems would like to hear from you! Please feel free to contact us if you wish to have additional information concerning any of the articles you have read in Horizons, or about a USC Software Systems product.

USC Software Systems
3500 South Figueroa Suite #208
Los Angeles, CA 90007
Phone: (213) 743-2025
Customer Support: (800) 862-5831
Fax: (213) 747-5451
email: toads@uscsoft10.usc.edu
<http://www.usc.edu/dept/uscss>

USC Software Systems
 3500 S. Figueroa Street
 Suite 208
 Los Angeles, CA 90007