Open Systems Group: Stepping Up the Power

UFIT

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Open Systems Group: Stepping Up the Power

The NERSP complex now occupies three racks, as opposed to only one when it was acquired just a few years ago.

The Open Systems Group (OSG) at NERDC shoulders responsibility for one of the two major operating systems at the Data Center. Their year has been filled with the complicated project of upgrading the NERSP complex to expand its capacity and make things run more smoothly. In addition to upgrading the NERSP, the group has added new services and continued its maintenance of all the software that keeps the machine running.

The upgrade includes increased processor speed, additional memory, and redundancies to increase stability.

"The NERSP upgrade took the most of our blood, sweat and tears. As for what the end users will notice, we work very hard to make it transparent to them. It is faster with more capacity though, and that's something that our end users should have noticed," said Steve Ulmer, NERDC senior systems programmer, who acts as manager for the OSG.

As a part of the upgrade, a new disk technology has been launched. The new disk technology is known as the General Parallel File System. "The new disk technology affects every service we provide by making access faster and more reliable," Ulmer said.

The upgraded nodes are connected by a high-speed switch. "The high-speed switch is a low-latency network hardware device that enables Virtual Shared Disks. Virtual Shared Disks are devices on which the General Parallel File Systems are built," Ulmer said.

The NERSP complex used to take up just one "frame" (or rack) about the size of a big refrigerator. When NERDC first acquired it, it contained only a few nodes. Now it has been expanded to occupy three frames and has a total of 20 nodes.

The group assisted the programmers in charge of maintaining EAGLE by performing a "code audit" on the CGI part that runs on our servers to help make it more robust. Enhanced
Application Generation Language for the Enterprise, or EAGLE, was featured in the article "FACTS Supports Student Services" in NERDC's Annual Review 1999-2000. CGI is the common gateway interface, which is a standard for interfacing external applications with information servers, such as HTTP (Web) servers.

As a part of maintaining campus services, the group upgraded both the hardware and the software for UF's authentication server. The campus authentication server issues Kerberos tickets for the ufl.edu domain, which includes GatorLink. With each session that a user opens, Kerberos generates a new "session key" that expires when the session ends. The upgrade makes all of this happen much faster.

Other maintenance included restructuring the Plaza Web space, where GatorLink Web pages are stored. "Now it's much simpler for us to manage so we can provide a better service to our user community," Ulmer said.

GatorLink users also saw another major improvement that came with the upgrade: bigger e-mail boxes. GatorLink mailboxes expanded to 25MB. This means that you can store mail messages that add up to 25 megabytes of space in your mailbox.

OSG takes a tripod approach to maintaining the NERSP-hardware, software and service. When they improve one part, such as hardware, they must also turn their attention to the accompanying software or service tied to it.

The group deployed WebSphere, which is software that campus development groups can use to create, manage and debug multiplatform Web applications. The WebSphere environment is IBM's Java-technology based Web-application server. WebSphere is a stable and scalable platform that allows NERDC customers to develop Internet solutions fairly easily.

In addition to adding new products, the group upgraded some of the software that runs on the NERSP, such as LoadLeveler. LoadLeveler allows large-scale computing time users to schedule and manage their jobs. The enhancements to LoadLeveler should make the it a more robust service. "We're using it internally as a part of our plan to use services that we offer to make sure they are working at their optimum level," Ulmer said.

"In addition to the NERSP upgrade, we have worked with many departments on campus and look forward to continuing this work to make sure our customers' needs are being met. It's been a busy, but very productive year for us," Ulmer said.

Open Systems Group Looks Forward

When Steve Ulmer looks to the future of Open Systems Group and what it may offer the NERDC computing community, he hopes for GatorLink Interactive Services, more automation of load-sharing and virus scanning.

"GatorLink Interactive Services would offer to a large audience what Grove currently offers to a small group. We hope that will be done in the next year," Ulmer said. These interactive services would offer shell access to more people than Grove can currently serve. "Grove still provides 'custom' services for professors and others on campus, but GatorLink will concentrate more on services for the 'masses.' This would also alleviate overcrowding on Grove."

Another item on Ulmer's wish list is a Highly Available Web Cluster. This would balance the load placed on Web-servers automatically. "Right now we have load sharing, but it's done
more 'manually' than automatically," Ulmer said.

At the request of the Vice Provost for Information Technology, Ulmer is studying the feasibility of one day being able to offer virus scanning for incoming and outgoing e-mails. These plans are a part of the group's continuing work to upgrade and improve e-mail service to keep pace with ever-increasing demand.

Your Comments are Welcome

We welcome your comments and suggestions on this and all UFIT documentation. Please send your comments to:

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