Faster, Bigger and More Stable: NERSP

UFIT

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Table of Contents

Faster, Bigger and More Stable: NERSP .................................................................3
Faster, Bigger and More Stable: NERSP

The NERSP computer complex at NERDC is getting better. The Open Systems Group (OSG) at NERDC has been working toward the most recent upgrade for a little over a year, including the planning phase. The bulk of the upgrade is expected to be completed by mid-April. The upgrade includes increased processor speed, additional memory, and redundancies to increase stability. The Open Systems Group added five new nodes and has reconfigured all the nodes in the complex.

"We've been experimenting and testing the new system since October 2000. Part of the reason that this is such a big project is because every node is being treated as a bare-metal install. We are positive of what's there, how it got there, and we've documented what we did for future installs," said Steve Ulmer, NERDC senior systems programmer, who acts as manager for the OSG.

NERDC needed to upgrade the NERSP operating system (AIX) due to the vendor's announcement that the current version would no longer be supported. Updating the complex also allows us to take advantage of performance enhancements and new software products that will run on the newer version of AIX, version 4.3.3, with the latest OS patches applied.

According to Ulmer, the upgrade greatly expands the NERSP complex. "We're going to about double the computational capacity of NERSP. We arrive at that with both the new hardware and the efficiencies gained by the operating system upgrade," he said.

"Users will see better interactive response, faster service provision in general, more stability and higher availability," Ulmer said.

"The software and hardware work much more efficiently, so that now the 'load' on each node is much lower. This means that there's now more processor time available for other programs," Ulmer said.

In addition to upgrading the complex, the OSG is also developing a disaster-recovery plan for each service that's hosted on the NERSP. "The disaster recovery plan will allow us to be able to re-install all the functionality of any machine managed by OSG. This includes the NERSP and several computers in addition to the NERSP that run other services for UF, such as the LDAP directory or the Kerberos authentication server."

By using a methodical approach to the upgrade, the group will be able to repeat its efforts in case of a catastrophe that would render the NERSP or other machines inoperable, Ulmer said.

"To minimize loss of computing time, we're trying to parallelize all services across more than one node, so if we lose one node, the service keeps running (with diminished capacity) until the faulty machine is replaced," Ulmer said. "Our goal is that, if we have a catastrophic node failure on a Tuesday, we will be able to wait to fix it until the next regularly scheduled maintenance window on that Sunday."

The upgrade also brings some new services, including GatorLink Interactive Services, WebSphere Enterprise Server environment (which includes Java Servlets, Java Server Pages, and more), and newer versions of much of the software that's currently used on the interactive node (Pine, for example).
Your Comments are Welcome

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