CNS /Update Newsletter Feature

Open Up! Open Systems Group Explains AIX Computer System

CNS Document ID: u011206a
Last Updated: 11/30/01

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Table of Contents

Open Up! Open Systems Group Explains AIX Computer System ................................3
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As you read about the computing options that NERDC offers, you'll come across many references to the NERSP, or the SP system. A logical question would be, "Just what is an SP, anyway?" In this month's column, we'll try to answer that question for you.

NERDC's Open Systems Group (OSG) operates an IBM RS/6000 SP computer, the NERSP, which is the primary computing platform for many centralized applications at the University of Florida. According to Steve Ulmer, OSG system manager, "The SP is actually just a collection of specially packaged RS/6000 servers, glued together with some software (Parallel System Support Programs [PSSP]) and a very low-latency network switch." Low-latency means that the switch is very fast—there is very little waiting between operations of the switch.

SP systems consist of a group of two to 512 RISC System/6000 processor nodes. Each node has its own memory and its own copy of the AIX (IBM’s UNIX) operating system. The nodes differ in the amount of memory they contain as well as in other available resources. They are interconnected by a switch and a separate RS/6000 workstation that acts as the SP system console. NERSP is simply the name of the SP system at NERDC. At presstime, it has 22 RS/6000 nodes with four more on order.

The IBM SP platform was created for scientific computing; specifically, highly parallel tasks. This means it was made for programs that could be separated into components that could run at the same time—in parallel. Early applications for this type of system were in the areas of weather prediction, modeling of nuclear explosions, the forces exerted by galaxies, and playing chess. As IBM’s SP platform has matured, it has expanded to be suitable for enterprise applications like those implemented at NERDC. Some of NERDC’s enterprise applications are Websphere, applications servers, Apache Web servers, LISTSERV, and GatorLink.

The SP system was designed to be flexible. SP nodes can be configured for executing jobs ("compute" nodes) or as server nodes that provide various services. The system can consist of any combination of server and compute nodes, depending on the needs of the computing community. Currently, NERSP compute node functions are run in the spare cycles of our server nodes. You can check out our system configuration from the NERDC home page www.cns.ufl.edu [http://www.cns.ufl.edu]. Look under About our Systems and then select NERSP Home.

In a future column, we will talk about how an upgrade is accomplished in a complex system like our NERSP computer system.

Your Comments are Welcome

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