

**A Budget Workstation
for
Numerical Modeling**

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Abstract

This seminar discusses the Linux clone of Unix and its development tools suited to numerical modeling. The Linux clone of Unix running on an IBM compatible PC provides a suitable platform for developing numerical models. The numerical examples shown were originally developed on a VAX for a class in chemical process control.

Using a Unix clone provides a number of features useful for numerical modeling. Virtual memory and a full 32-bit environment eliminate a number of problems common with DOS. Development tools similar to those on larger systems are able to run on common PC hardware. Many FORTRAN models will run with little or no modification. The Unix utilities available also provide a useful toolkit for manipulating and analyzing the results.

Using the Linux clone of Unix does come with a price. There is increased complexity in the system. The user must devote more attention to maintaining the operating system. Also, the FORTRAN translator adheres closely to standard FORTRAN 77. However, using C as an intermediate language makes debugging difficult since debugger commands relate to the intermediate C program instead of the original FORTRAN source.