ADAMS Mechanical System Simulation
Mechanical Dynamics, Inc.

ADAMS is mechanical system simulation software with modeling, analysis, and visualization capabilities. It enables users to produce virtual prototypes, realistically simulating the full-motion behavior of complex mechanical systems on their computers and quickly analyzing multiple design variations until an optimal design is achieved. This reduces the number of costly physical prototypes, improves design quality, and dramatically reduces product development time.

http://www.eos.ncsu.edu/software/adams/

Adobe Acrobat, Reader, and Photoshop
Adobe Systems, Inc.

Adobe Acrobat lets you convert any document, including Microsoft Office documents, to Adobe Portable Document Format (PDF). Anyone can open your document across a broad range of hardware and software, and it will look exactly as you intended, with layout, fonts, links, and images intact.

The Acrobat Reader is a tool for viewing, navigating, and printing PDF documents and can be downloaded for free from the Adobe web site. It launches automatically in your browser, but on Solaris machines can also be launched as a separate application (add acroread).

Adobe Photoshop is the de facto standard for digital image enhancement, photo retouching, and image compositing. It allows you to create original artwork, generate realistic or interpretive textures and backgrounds, correct color, retouch and composite scanned images, and prepare professional-quality separations and output for print or the Web.

http://www.eos.ncsu.edu/software/acrobat/
http://www.eos.ncsu.edu/software/photoshop/

AMPL/CPLEX Optimization Modeling
ILOG, Inc.

AMPL is a comprehensive and powerful algebraic modeling language for linear and nonlinear optimization problems, in discrete or continuous variables. It is also a computer language for describing production, distribution, blending, scheduling and many other kinds of problems known generally as large-scale optimization or mathematical
programming. AMPL’s familiar algebraic notation and interactive command environment are designed to help formulate models, communicate with a wide variety of solvers, and examine solutions.

**CPLEX** delivers high-performance, robust, flexible optimizers for solving linear, mixed-integer and quadratic programming problems in mission-critical resource allocation applications. Most leading end users and software providers in supply chain planning, telecommunication network design, and transportation logistics use ILOG CPLEX.

http://www.eos.ncsu.edu/software/ampl/
http://www.eos.ncsu.edu/software/cplex/

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**ANSYS Finite Element Analysis**
ANSYS, Inc.

ANSYS is a tool for analyzing finite element engineering problems. Sample applications found in test programs include thermodynamic analysis (heat transfer, cooling analysis, temperature gradients, thermal responses) and structural analysis (torsion computation, vibration, stress analysis on various substances, elasticity). The package includes solid modeling/meshing, 3-D graphics, quality-analysis tools, and more.

http://www.eos.ncsu.edu/software/ansys/

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**ARC/INFO Geographic Information System Toolkit**
Environmental Systems Research Institute (ESRI)

ARC/INFO is a GIS toolkit with thousands of built-in functions for sharing and processing geographic data, plus optional, fully integrated extensions for performing specialized tasks. ARC/INFO integrates all these data types with tabular DBMS data: vector, raster, photographs, scanned documents, satellite images, CAD drawings, and sound/video.

http://www.eos.ncsu.edu/software/arcinfo/

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**ArcView Geographic Information System**
Environmental Systems Research Institute (ESRI)

ArcView is a powerful, easy-to-use tool that enables the user to spatially visualize, explore, query and analyze geographic data. ArcView has a useful set of ready-to-use data, and additional geographic data sets are

Platforms: Sun, Windows (3.2)
To run on Sun:
add arcview
arcview32
To run on Windows:
NAL Unity Applications
available from ESRI and from various third parties. The user can use ArcView to access ARC/INFO resources, including vector coverages, map libraries, grids, images and event data.

http://www.eos.ncsu.edu/software/arcview/

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**ARENA Simulation System**  
Rockwell Software, Inc.

The Arena graphics simulation system is a complete and flexible modeling environment with an easy-to-use graphical user interface. It is designed for building computer models that accurately represent an existing or proposed application. Arena integrates all simulation-related functions-animation, input data analysis, model verification, and output analysis-into a single simulation modeling environment, with flexible flow-charting objects to capture systems of all kinds.

http://www.eos.ncsu.edu/software/arena/

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**Aspen Plus and Icarus**  
Aspen Technology, Inc.

Aspen Plus, part of the Aspen Engineering Suite, simulates the behavior of various models involving chemical interaction and vapor-liquid processes. Sample applications found in test programs include calculation of viscosity and thermal conductivity of various substances, determination of parameters for chemical systems, hydrogenation and distillation systems, solids handling, costing and economic evaluation, electrolyte systems, and advanced physical properties.

http://www.eos.ncsu.edu/software/aspen/  
http://www.eos.ncsu.edu/software/icarus/

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**AutoCAD Computer-Aided Design**  
Autodesk, Inc.

AutoCAD is an industry standard for computer-aided design, offering exceptional performance, high-quality presentation, smart drawing tools and time-saving reference, raster, and Internet file-sharing capabilities.

http://www.eos.ncsu.edu/software/autocad/

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AVR Studio Microcontroller Development
Atmel Corporation

AVR Studio is an Integrated Development Tool for the AVR family of microcontrollers. It enables the user to control execution of programs on the built-in AVR Instruction Set Simulator, or on an AVR In-Circuit Emulator. AVR Studio supports source-level execution of Assembly programs assembled with the AVR Assembler and other assemblers and compilers that support either UBROF or COFF as their object file format.

http://www.eos.ncsu.edu/software/avr/

Cadence Circuit Design Toolkit
Cadence Design Systems, Inc.

Cadence is a collection of digital and analog electronic design and simulation tools. Cadence provides products and solutions for every aspect of electronic design, and is used by the leading semiconductor, computer system, communications equipment, and consumer electronic companies in the world. Cadence is a very powerful and large package and only runs on higher performance workstations.

http://www.eos.ncsu.edu/software/cadence/

CADRA Computer-Aided Design
SofTech, Inc.

The CADRA family of CAD/CAM includes CADRA Design Drafting, a fast and highly productive mechanical design documentation tool; CADRA NC, a comprehensive 2 through 5 axis NC programming application; and CADRA integration with SolidWorks, an integrated 3D solid modeler and drawing production system. CADRA also has an extensive collection of translators and software options for multi-platform and multi-application organizations.

http://www.eos.ncsu.edu/software/cadra/

Dreamweaver Visual HTML Editor
Macromedia, Inc.

Dreamweaver is a professional HTML editor for visually creating and managing Web sites and pages. Dreamweaver provides advanced design
and layout tools and supports Dynamic HTML features, such as animated layers and behaviors. Browser-targeting checks pages for potential problems on all popular platforms and browsers. Dreamweaver makes it possible for users to create Web pages without coding, but you can easily hand-code within the environment if you prefer.

http://www.eos.ncsu.edu/software/dreamweaver/

**FactoryCAD Factory Layout Drafting**

EDS, Inc.

FactoryCAD is an E-factory layout software tool that allows you to create detailed, intelligent factory models. FactoryCAD provides equipment symbols, block management, optimized layer management tools, and smart factory objects, everything you need to create an entire factory model. Instead of drawing lines, arcs, and circles, smart objects represent floor and overhead conveyors, mezzanines, cranes, operators, material handling containers, etc. These objects allow you to snap together a layout model without wasting time drawing the equipment.

http://www.eos.ncsu.edu/software/factorycad/

**Fireworks Web Graphics**

Macromedia, Inc.

Fireworks allows you to create, edit, and animate Web graphics using a complete set of bitmap and vector tools. You can also use export controls to optimize your images, give them advanced interactivity, and export them into Macromedia Dreamweaver, Flash, and other HTML editors.

http://www.eos.ncsu.edu/software/fireworks/

**Flash Web Animation**

Macromedia, Inc.

Flash is software for designing and delivering low-bandwidth animations, presentations, and Web sites. It offers scripting capabilities and server-side connectivity for creating engaging applications, Web interfaces, and courses. Flash also integrates with Macromedia Dreamweaver and Fireworks.

http://www.eos.ncsu.edu/software/flash/
FORTRAN 90 and 95 NAGware Compilers
Numerical Algorithms Group (NAG)

The NAGWare f95 compiler is a full ISO and ANSI standard implementation of the FORTRAN 95 language. The NAGWare f90 compiler, launched in June 1991, was the world’s first FORTRAN 90 compiler. The new features of FORTRAN 95 have been added to this well-proven compiler and includes many performance and operations improvements. The NAGWare f95 Compiler compiles both free format FORTRAN 90/95 input and FORTRAN 77 fixed format input.

http://www.eos.ncsu.edu/software/f95/

FrameMaker Word Processor and Publisher
Adobe Systems, Inc.

FrameMaker is a multi-channel publishing package with full word-processing features, graphics and drawing capabilities, equation editor, bookmaking, and other features for creating professional output. FrameMaker includes tools for writing and distributing long, structured, content-rich documents across all major computing platforms, with export to XML. The software supports the entire publishing process, from word processing and layout to electronic distribution.

http://www.eos.ncsu.edu/software/framemaker/

HSPICE Electronic Circuit Simulator
Synopsys, Inc.

HSPICE is an industry-standard cell-design and process-modeling tool with worldwide sign-off standard for circuit simulation. It supports more than 20 customized proprietary models, including Level 28 and many MOSFET, JFET, diode and capacitance models and public-domain models such as BSIM3. It provides superior convergence and optimizes circuits for models and cells, with mutiparameter optimizations in AC, DC and transient simulations. It also provides interpreted Monte Carlo yield-analysis model, worst-case design analysis support, and highly accurate timing models for gate-level simulators.

http://www.eos.ncsu.edu/software/hspice/

Java Development Kit (JDK)
Sun Microsystems, Inc.

Java 2 Platform, Standard Edition (J2SE) provides a complete, secure foundation for building and deploying network-centric enterprise
applications ranging from the PC desktop computer up to the workgroup server. It provides a stable, secure and feature-complete development and deployment environment designed from the ground up for the Web. It provides cross-platform compatibility, safe network delivery, and smartcard to supercomputer scalability. It also provides software developers with a platform for rapid application development.

http://www.eos.ncsu.edu/software/jdk/

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**JMP Statistical Discovery Software**

**SAS Institute, Inc.**

JMP (pronounced “jump”) is an interactive environment for statistical visualization and exploratory data analysis. JMP presents statistics in an easily understood, graphical environment. Data tables are presented in spreadsheet form and are dynamically linked to related graphs and tables. JMP offers capabilities for performing univariate statistics, analysis of variance and multiple regression, nonlinear fitting, multivariate analysis, and nonparametric tests.

http://www.eos.ncsu.edu/software/jmp/

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**LINDO/LINGO Optimization**

**LINDO Systems, Inc.**

HyperLINDO is an interactive package for solving linear, quadratic and integer programming problems, evaluate the appropriateness of the results, make minor modifications to the data or parameters, and retest to obtain optimum output. As a general-purpose LP, QP, and IP optimizer, it recognizes general integer variables (not just 0/1), free variables, and bounded variables. LINGO is a language for developing large structured models. It is a general-purpose modeling language and optimizer with a built-in text editor. LINGO recognizes subscripted variables, sets, operations over sets, and general mathematical expressions. Commonly used trigonometric, mathematical, and statistical functions are built in.

http://www.eos.ncsu.edu/software/lindo/
http://www.eos.ncsu.edu/software/lingo/

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**LSF Load-Sharing Facility**

**Platform Computing, Inc.**

The Load-Sharing Facility (LSF) for Application Resource Management provides background batch processing on Eos/Unity workstations. LSF
is an industry-standard set of integrated products that transforms a distributed network into a single shared computing resource for robust load sharing and batch scheduling.

http://www.eos.ncsu.edu/software/lsf/

**Maple Symbolic Math Computation**  
*Waterloo Maple Software*

Maple is a comprehensive computer system for advanced mathematics. It includes facilities for interactive algebra, calculus, discrete mathematics, graphics, numerical computation and many other areas of mathematics. It also provides a unique environment for rapid development of mathematical programs using its vast library of built-in functions and operations.

http://www.eos.ncsu.edu/software/maple/

**Mathcad Calculation and Documentation**  
*Mathsoft, Inc.*

Mathcad is an integrated environment for performing and communicating math-related work. Features include math operator display options for equals, partial derivatives, multiplication, assignments, and more; differential algebraic equation solving functions; over 17 arithmetic, 12 vector and matrix operators, and 4 summations and products operators, as well as customized user-defined operator support; and image manipulation functionality (zoom/pan/crop, brightness/contrast, rotate/flip/transpose, etc.)

http://www.eos.ncsu.edu/software/mathcad/

**MATLAB Numerical Matrix Computation**  
*The MathWorks, Inc.*

MATLAB is a high-performance language for technical computing. It integrates computation, visualization, and programming in an easy-to-use environment where problems and solutions are expressed in familiar mathematical notation. Typical uses include math and computation, algorithm development, modeling, simulation, prototyping, data analysis, visualization, scientific and engineering graphics, and application development, including Graphical User Interface.

To run:

```
ssh to lsf.ncsu.edu
add lsf
lsfsubmit
```

Platforms: Sun, Windows, Linux (8.0)

To run on Sun and Linux:

```
add maple
xmaple
```

Also on the Application Menu

To run on Windows:

NAL Unity Applications

Platforms: Windows (2001)

To run:

```
NAL Engineering Applications
```

Platforms: Sun, Linux (6.1r12.1), Windows (6.5r13)

To run on Sun and Linux:

```
add matlab
matlab
```

Also on the Application Menu

To run on Windows:

NAL Unity Applications

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Interface building. MATLAB features a family of application-specific solutions called toolboxes. Toolboxes are comprehensive collections of MATLAB functions (M-files) that extend the MATLAB environment to solve particular classes of problems.

http://www.eos.ncsu.edu/software/matlab/

**Moldflow Plastics Injection Molding**  
Moldflow Corporation

Moldflow allows students in manufacturing classes to quantitatively evaluate the design of plastic parts. It simulates and predicts how molten plastic will flow into a cavity. It can then be used to predict manufacturing defects that can be corrected with proper part redesign.

http://www.eos.ncsu.edu/software/moldflow/

**NExS Scientific and Engineering Spreadsheet**  
GreyTrout, Inc.

NExS (Network Extensible Spreadsheet) is an interactive spreadsheet designed specifically for the X Windows environment. It is capable of monitoring several X applications at once and updating the relevant mathematical, matrix, string and statistical data from each. It supports matrix, vector and fourier transformation operations, as well as the arithmetic, Boolean, and logic functions available in C.

http://www.eos.ncsu.edu/software/nexs/

**Norton AntiVirus Corporate Edition**  
Symantec Corporation

Symantec’s Norton AntiVirus Solution provides anti-virus protection for individual systems up to large wide area networks. The scalable Symantec System Center management console offers real-time communication with clients and servers from a single point, allowing convenient distribution of new virus definition sets.

http://www.ncsu.edu/antivirus/

**Office**  
Microsoft Corporation

The Microsoft Office suite offers a set of tools to create, publish, and analyze data. It includes Access database tool, Excel spreadsheet, PowerPoint presentation graphics, Publisher, and Word.
OPNET Network Management and Modeling
OPNET Technologies Incorporated

OPNET is a comprehensive development environment for modeling communication networks and distributed systems. OPNET analyzes the behavior and performance of modeled systems with tools for model design, discrete-event simulation, and data collection and analysis.

http://www.eos.ncsu.edu/software/opnet/

Platforms: Sun (9.2)

To run on Sun:
add opnet modeler

Primavera Project Planner
Primavera

Primavera is high-performance project management software. Its features include unlimited project groups, multiproject resource and task relationship control, critical path scheduling, 31 activity calendars per project, resource and cost management, over 150 predefined tabular and matrix reports and graphics, and a custom report writer.

http://www.eos.ncsu.edu/software/primavera/

Platforms: Windows (3.1)

To run:
NAL Engineering Applications

Pro/ENGINEER and Pro/MECHANICA
Parametric Technology Corporation

Pro/ENGINEER Computer-Aided Design software is a powerful tool for engineering design and an industry leader among CAD programs. Its parametric solid modeling methodologies capture design intent and support feature-based modeling of parts and the subsequent combination of parts in assembly creation.

http://www.eos.ncsu.edu/software/proengineer/

Platforms: Sun, Windows (2001)

To run on Sun:
add proeng proc2001 (Pro/Engineer) cdrs2001 (Conceptual Design)
Also on the Application Menu

To run on Windows:
NAL Engineering Applications

SAS Data Analysis Applications
SAS Institute, Inc.

SAS is an integrated applications system for data access. Its programs may be used in operations research (models of distribution networks, resource

Platforms: Sun (8.2), Windows (9.2)

To run on Sun:
add sas
Also on the Application Menu
allocation problems, scheduling, production systems), report writing and
graphics, business forecasting and decision support, project
management, and applications development, among other things.

http://www.eos.ncsu.edu/software/sas/

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**Silvaco Integrated Circuit Design**
Silvaco International

Silvaco’s Virtual Wafer Fab is an integrated environment of 1D, 2D and
3D process and device simulators, graphical user interface tools and
automation tools. It provides a high-throughput environment for
evaluating fabrication and performance of silicon and advanced
materials semiconductor technologies.

http://www.eos.ncsu.edu/software/silvaco/

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**SolidWorks Computer-Aided Design**
SolidWorks Corporation

SolidWorks for CAD and 3D solid modeling is mechanical design
automation software for producing models and detailed drawings. Add-ons like **CosmosWorks** and **CosmosMotion** extend SolidWorks
into structural analysis and motion.

http://www.eos.ncsu.edu/software/solidworks/
http://www.eos.ncsu.edu/software/cosmosworks/
http://www.eos.ncsu.edu/software/cosmosmotion/

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**S-Plus Advanced Data Analysis**
Insightful, Inc.

S-Plus is an interactive computing environment that provides a full-
featured graphical data analysis system and an object-oriented language.
It is a programmable tool for data analysis and can be used for exploratory
analysis, graphics, statistics, and mathematical computing.

http://www.eos.ncsu.edu/software/splus/

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**StarOffice Office Application Suite**
Sun Microsystems, Inc.

StarOffice is a fully featured, integrated, and comprehensive office suite
you can use to create dynamic documents, analyze data, design

Platforms: Sun, Windows, Linux (6.0)
presentations, collaborate with team members, publish Web content, and schedule appointments.

http://www.eos.ncsu.edu/software/staroffice/

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**Synopsys Digital Circuit Synthesis**  
Synopsys, Inc.

Synopsys is a digital electronic circuit synthesis tool. It transforms a functional (register-transfer level) description of a module into a gate-level netlist. The Synopsys Design Analyzer is the graphic interface to the Synopsys family of synthesis tools.

http://www.eos.ncsu.edu/software/synopsys/

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**Tecplot Interactive Plotting**  
Amtec Engineering, Inc.

Tecplot is an interactive package for visualizing technical data and creating XY plots, contour plots, vector plots, mesh plots, carpet plots, 3D stream ribbons, isosurfaces, light-source-shaded surfaces, etc. It is able to visualize complex data defined in one, two, or three dimensions or on its original non-rectangular grid.

http://www.eos.ncsu.edu/software/tecplot/

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**TK Solver Plus Simultaneous Equation Solver**  
Universal Technical Systems, Inc.

TK Solver has a declarative, rule-based programing language that lets you work directly with a mathematical description of a problem without sequencing the operations to be performed by the computer, and without isolating the unknowns on one side of the equation. It recognizes eight classes of objects: rules (or equations), variables, lists of values (numeric, symbolic), functions (built-in, user-defined, or problem-specific), unit conversions, and plot, table and format specifications.

http://www.eos.ncsu.edu/software/tksolver/

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**Together Control Center**  
TogetherSoft Corporation

Together ControlCenter is a graphical integrated environment for large-scale, collaborative software engineering projects and e-business

To run on Windows:
NAL Engineering Applications

Platforms: Windows (4)

To run on Sun and Linux:
add tecplot
tecplot

Also on the Application Menu

To run on Windows:
NAL Engineering Applications

Platforms: Windows, Linux (9.2)

To run on Linux:
add togethersoft
tcc
solutions development. It supports collaboration with a common language, common diagrams, and common building block components.

http://www.eos.ncsu.edu/software/togethersoft/

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**Visio Professional**  
Microsoft Corporation

Visio Professional is used to create professional-looking diagrams. Drag-and-drop is used to assemble flowcharts, block diagrams, web site maps, floor plans, and basic network diagrams. Existing databases and Visual Studio projects can be reverse engineered to understand database schema and software code.

http://www.eos.ncsu.edu/software/visio/

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**VisualAge Smalltalk**  
IBM, Inc.

VisualAge Smalltalk enables software developers to use object-oriented technology to create highly portable, scaleable, multi-tier business applications. Smalltalk combines an object-oriented environment with visual programming, adding B2B support through a new XML parser, a new level of VisualAge for Java™ integration, enhanced WebSphere integration, and the addition of the new Advanced Database feature.

http://www.eos.ncsu.edu/software/smalltalk/

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**Visual SlickEdit Programmer’s Editor**  
SlickEdit, Inc.

Visual SlickEdit is an easy-to-use text editor but comprehensive and flexible code editor for C/C++, C#, Java, HTML, XML, Unicode and other programming languages, file types, and encodings. It has the same GUI on Windows, Linux and UNIX platforms and provides superior code-editing tools for intelligent coding assistance, file/directory tree differencing, and 3-way merge editing.

http://www.eos.ncsu.edu/software/slickedit/

See http://www.eos.ncsu.edu/software/ for additional information and more applications, including Automod, Femlab, Microstation with Geopak, RS Logix, SURFCAM, SmartFTP, Timberline Estimating, Visual Studio, WaterCAD, WordPerfect, X-Win32, etc.