

# NEVADA

*Software Infrastructure and Development Processes — Computational Shock & Multiphysics*

## Overview

- NEVADA is a software infrastructure for enabling development of complex applications to be run on desktop UNIX machines to large supercomputers.
- Provides a source code resource toolkit, a full application framework, management of multiple third party software packages, and development tools and processes.

## Applications

- ALEGRA, ALEGRA-HEDP, ALEGRA-EMMA
  - Earth Penetration, Hard Deeply Buried Targets
  - Neutron Generator Power Supply
  - Resistive Magnetohydrodynamics
  - Z-Pinch, ICF
- EMPHASIS™
  - Electromagnetics for IEMP & SGEMP
- CEPTRE
  - Hostile environment radiation transport
- CHARON

## Features

- Source Code Component Repository
  - Mesh input and output
  - Error handling
  - MPI communication utility
  - Runtime C-language compiler
  - Restart checkpoint read/write
- Application Framework
  - Object oriented abstractions
  - Multiple topology element types
- Third party Software Management
  - Version controlled, repeatable, recoverable
  - Libraries and executables
  - Ports to wide range of platforms
- Development Processes
  - Nightly build and testing
  - Release packaging and install support
  - Platform ports and tests
- Development Tools
  - Build, testing, and program launch
  - SourceForge integrated development web tool
  - Release packaging

