

# Cadence Export Model Packager

Simulation-ready model creation for fast and accurate SoC integration

Globalization and complexity are driving project teams to integrate more design and verification intellectual property (IP) from external sources. Two methods to protect that IP exist: source code encryption using the IEEE P1735 standard, and source code packaging using Cadence® Export Model Packager. Depending on their specific needs, developers may choose one or both methods to provide systems integrators with the IP they need to assemble their complex SoCs.

## Cadence Export Model Packager

Model packaging is the process by which design and testbench source code is compiled into a protected object file. The protected object file can then be used with the simulator used to package it or with specific third-party simulators. Cadence Export Model Packager uses the Cadence Incisive® Enterprise Simulator engine to compile the source code. The packaged model is then integrated to a host simulator using boundary objects, such as ports and viewports, for SoC simulation.

### Benefits

- Produces protected models ready for simulation
- Integrates IP using the high-performance IEEE 1499 OMI standard or Verilog PLI

- Provides visibility into internal registers selected by the model provider when the model is packaged
- Offers simple capture and replay utilities to enable simple integration testing prior to deployment by the model integrator
- Supports proprietary licensing for model providers

### Features

#### Model packaging

Cadence Export Model Packager's primary feature is to take design and verification source code as input and create a black-box model ready for simulation. During this process, the source code is converted into a binary form hiding both the internal names and hierarchy. As a result, the model integrator can't use a debugger or a programming interface such as PLI, VPI, or VHPI to explore the model hierarchy, which further protects the packaged model.

#### Integration with simulators

The packaged model can be easily integrated with specific simulators using either the high-performance IEEE 1499 OMI standard or the less efficient PLI. The IEEE 1499 standard was established with the specific goal of creating a standard interface for hardware description models of electronic components. For simulation providers that have chosen not to implement this standard, Cadence Export Model Packager also supports a less efficient PLI. The Incisive Enterprise Simulator uses the OMI interface when connecting to the packaged models.

#### Viewports for key internal registers

In some cases, the model provider may need to expose internal registers critical to the model integrator. The model provider specifies a simple directive during the model packaging process that identifies the hierarchical path to the register and a viewport name. The model integrator can then only access that register using the viewport name, which allows the hierarchy to remain hidden.

## Capture and replay utilities

Cadence Export Model Packager provides two utilities that enable the capture and replay of simple stimulus. The model provider can use these utilities to deliver a simple integration test, assuring the model integrator that the model is connected into their SoC correctly.

## Model provider licensing

Since the main purpose of Cadence Export Model Packager is to protect IP for distribution to model integrators, the model provider may want to provide a licensing mechanism to assure that only approved integrators are using their models. To that end, Cadence Export Model Packager offers an API to link in the model provider's proprietary license checking object code. A model packaged with this option and integrated with a simulator will exit as soon as it detects a failure in the model provider's proprietary license check routine. If this feature is used, the model provider is responsible for the licensing algorithm and the distribution of any associated license keys.

## Cadence Services And Support

- Cadence application engineers can answer your technical questions by telephone, email, or Internet—they can also provide technical assistance and custom training
- Cadence certified instructors teach more than 70 courses and bring their real-world experience into the classroom
- More than 25 Internet Learning Series (iLS) online courses allow you the flexibility of training at your own computer via the Internet
- Cadence Online Support gives you 24x7 online access to a knowledgebase of the latest solutions, technical documentation, software downloads, and more



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