

# CELUG

Centralized Enterprise Licensing Users Group



## Topics

- Centralized Enterprise Licensing Users Group
- Electronic Design Automation
- Business Drivers
- Multi Core Technology
- Nano Process Technology
- EDA infrastructure challenges from an industry perspective
- Q & A



## **CELUG Centralized Enterprise Licensing Users Group**

CELUG has been in existence since January 2003. It is a non-profit organization with global representation. The group meets monthly via phone conference to discuss common licensing issues. We also invite software vendors to present on their licensing products and roadmaps.

### **Mission Statement**

To facilitate collaboration among companies who administer software licensing at the enterprise level, enable sharing of best practices and experiences, and partner with software publishers to improve software license management tools and processes.



## EDA Electronic Design Automation

Software tools used for design automation, simulation, and verification of ASICs (application specific integrated circuits)

Major ISV's (Independent Software Vendor) tool providers

- Cadence
- Synopsys
- Mentor Graphics

EDA Industry Consortium

- EDAC



## EDA Electronic Design Automation

### Resource Workflow Management Tools

- Platform LSF
- Platform LSF LS
- Platform LSF Analytics
- Platform RTM
- Sun Grid Engine

### EDA Licensing

- Macrovision FLEXnet Publisher
- Macrovision FLEXnet Manager



## Business Drivers

- Accelerate Time To Market
- Balance Hardware and Software Costs
- Optimal Software License Utilization
- Support Simultaneous Design Projects
- Increase Testing Prior To Tape Out (Silicon)
- Reduce Spins and Re-spins

## Multi Core Technology

Processor manufactures have focused on performance per watt and moved to multi core technologies, EDA applications and licensing has not evolved to support this change. EDA tools are predominantly single threaded.



## Nano Process Technology

- 65nm and 45nm
- Multithreading
- Partitioning
- Parallel Processing
- Pipelining





## EDA infrastructure challenges from an industry perspective:

Dense computing

- High-density blade racks
- Power and cooling issues

Data Center Expansion

- Capacity on Demand
- Utility Computing
- Virtualization of Computing Infrastructure
- Co-Location
- Modular Containerized Data Centers
- Cloud Computing (IaaS)



## EDA infrastructure challenges from an industry perspective:

Engineering IT partnering with ISV's

- Licensing roadmaps
- O/S roadmaps
- Tool dependencies
- DRM integration

Open Standards

- LSB adoption



## Conclusion


- Continuous improvement in license management tools
- Alignment of EDA licensing with grid challenges
- Adoption of open standards
- Partnering for a unified voice

## Q&A

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# Cadence update

**Sashi Subramanian**  
**Cadence Design Systems Inc.**  
**10/22/2008**

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- **All Cadence releases are now integrated with FLEXnet 10.8.2.1 on Unix based platforms and FLEXnet 10.8.5 on Windows platform**
  - **New! FLEXnet 10.8.6 server is available on all platforms.**
    - **All currently shipping Cadence releases include this version of the license server**
    - **Download latest LCU release from <http://download.cadence.com/>**

## Key Issues addressed in v10.8.6



- **UNSUPPORTED** option has been added to the **NOLOG** keyword in options file
  - turns off the **UNSUPPORTED** error messages in the log file.
- **Vendor daemon sometimes stops responding and checks in all licenses.**
  - problem occurs when the vendor daemon is sending large amounts of data to a client and the client stops accepting data, crashes or there is a network problem.
  - resolved by aborting the transfer of data when a failure condition is detected.
- **An updated version of the Windows dongle driver installer, to support Vista**

- **FLEXnet v11.6.1 based license server should be available in 1H2009**
  - **Only Certificate based licenses. No Trusted Storage**
- **FLEXnet v11.6.1 based client library will be released internally to product groups - 1H2009**



**Questions?**



# CELUG Licensing Challenges and Industry experiences

Scott Baeder  
EDAC Anti-Piracy Committee

# My Background



Almost 30 years in EDA, most of them heavily involved in “operational” aspects of SW development and delivery

– Currently helps set the vision and strategy for many operational areas within Cadence, including:

- Release Management
- Development Environment (operating systems, virtualization, compute grids, etc.)
- How products are Licensed, Packaged and Delivered.

Serves as the Chairman of the Anti-Piracy and Licensing Committee for EDAC

# Who / What is EDAC ...



The Electronic Design Automation Consortium is the international association of companies developing EDA tools and services.

In a nutshell, it's Mission / Objective is to: “Do together what individual EDA companies can't do alone”

It is focused on things like:

- Gathering and Publishing Market Segment Statistics
- Lobbying on issues like Import/Export Classification
- Working on industry-wide issues like Anti-Piracy, which has been a focal point for the past 3-5 years

# Anti-Piracy Committee's Objectives



Use “Licensing” to capture more value for the entire EDA industry

- Promote Best Practices
  - Both EDA supplier and customer
- Focus on Customer and Vendor Education
  - Reduce complexity; Enable auditing (self?)
- Define and drive increased license management functionality and security

# License Management Roadmap:



There are two things that drive the adoption of new licensing technology

- Availability of the technology from our primary vendor (s)
- Compatibility and ease of adoption of the technology by our customers

The purpose of this Licensing “roadmap” is to foster coordination and interoperability within the EDA community.

- Both with the vendors and consumers of “license management”
- Balance aggressively advancing the state of available technology with how effectively that technology can be delivered.

# License Management Roadmap



We expect ISV's to migration to FNP v11.x or later during the 2009/2010 timeframe.

- EDA ISV's should continue to support certificate based licensing.

## Simplify Usage Reporting

## Track other FNP implementation issues and enhancements

## Move toward a more secure HostID

- Drive potential solutions to the complexities and security issues related to Virtualized license servers

# Anti-Piracy Efforts



Continue to work with commercial Anti-Piracy Vendors

- Develop more EDA specific data
- We are still learning “what we don’t know...”

Possibly fund an EDA focused “study”

- Leverage MSS and a Financial oriented analysis
- Correlate across different geographic areas and how EDA software sales (cost to design and “build”) compare to the value of what is produced.

Other forms of data collection