



Stay ahead of the curve

## **CELUG Licensing Challenges**

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# CELUG Licensing Challenges

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

# CELUG Licensing Challenges

## 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.

# CELUG Licensing Challenges

## 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

# CELUG Licensing Challenges

## 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

# CELUG Licensing Challenges

## 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

# CELUG Licensing Challenges

## 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.
- Processor cores per socket
- Pricing per socket, not per core

# CELUG Licensing Challenges

- EDA infrastructure challenges from an industry perspective:
  - Dense computing
  - High-density blade racks
  - Power and cooling issues
  - EDA Grids
  - Break up individual jobs and run in parallel across a grid of computers
  - Data Grids
  - Move large amounts of data around the globe (pre-staging, caching)
  - License Grids
  - Dynamically move licenses around the globe based on need



# CELUG licensing Challenges

- 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
- Job Submission Description Language (JSDL)

# CELUG Licensing Challenges

## Conclusion

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

# CELUG Licensing Challenges

## Q&A

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