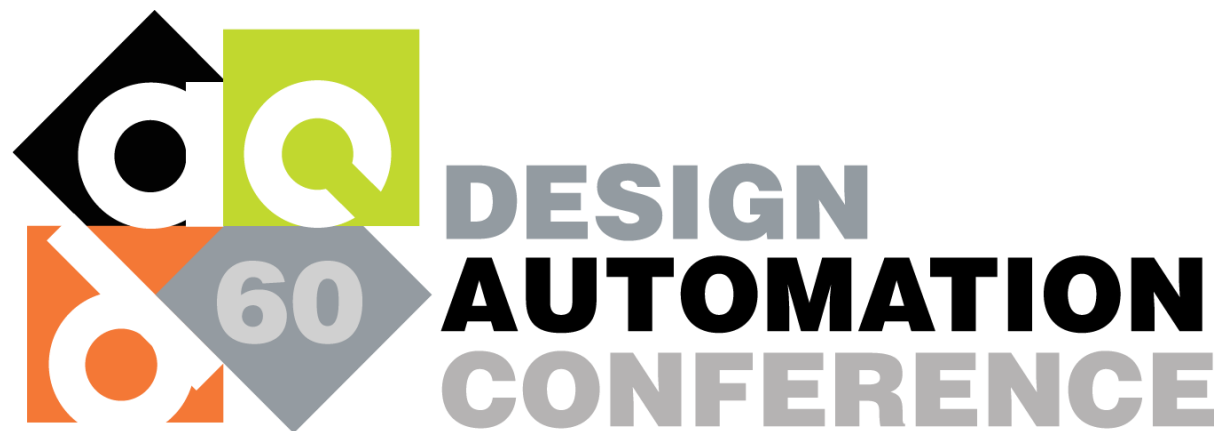




Conference Invited Session



FROM CHIPS TO SYSTEMS — LEARN TODAY, CREATE TOMORROW

JULY 9-13, 2023 ♦ SAN FRANCISCO, CA

Securing IP in the Cloud

DAC 2023 Invited Session

Organizer: Sashi Obilisetty (will be updated with non-EC
organizer and moderator)

Synopsys

Abstract

Chip design on cloud is growing rapidly, and almost all companies have (or should have!) a very coherent design-on-cloud strategy. Design on cloud has the potential to accelerate time to market by increasing design and verification velocity, especially when it comes to advanced node designs. There is no one-size-fits-all approach to designing on cloud. Some choose to migrate only certain workloads, while others may create additional tooling to burst to cloud seamlessly. Regardless of the path to cloud, it is important to understand IP security on cloud.

In this session, you will have the chance to hear from three different perspectives from industry leaders:

- 1. [Serge Leef, Microsoft](#), on tools and vulnerability assessment technologies that can assure and enable IP authenticity*
- 2. [Suresh Gadewar](#), Synopsys, on reference architectures for securing IP and related topics, and*
- 3. [Paul Buenrostro](#), Western Digital, on best practices leveraged by his team*

Establishing Trust in IP through Automated Attestation

Serge Leef, Microsoft

Since IP is commonly managed and transmitted in the source form, it is particularly vulnerable to, for example, malicious functionality insertions. An attacker can easily modify the IP blocks to include unintended functionality. Considering that IP blocks could contain thousands of lines of code and are very difficult for non-authors to understand, hiding additive features is not particularly difficult.

Thus, there need to be tools for vulnerability assessment and scoring along with methodologies to assure the IP end user that the block is authentic and has not been modified by anyone other than the original author.



After 4 years of national service at DARPA, Serge Leef joined Microsoft's Azure business in March of 2022 to pursue the vision of cloud based secure microelectronics design, implementation, and fabrication enablement. At DARPA, Serge was responsible for Secure Silicon, Next Generation Design Tools, and Domestic Microelectronics program portfolio.

Prior to the DARPA appointment, Serge worked at Siemens EDA (formerly Mentor Graphics), Silicon Graphics, and Microchip. Serge received his Bachelor of Science degree in electrical engineering and Master of Science degree in computer science from Arizona State University. He has served on corporate, state, and academic advisory boards, delivered numerous public speeches, and holds patents in hardware Trojan detection and Internet of Things (IoT) infrastructure.

Securing IP in the Cloud

Sudesh Gadewar, Bob Lefferts, Synopsys

- Objective of the session is to provide
 - insights into Lifecycle of sensitive (IP) document, Synopsys approach on Information protection using Detect, Classify, Protect, Monitor approach
 - Data Security Custodianship, Access Control Restrictions, Encryption measures
 - Data Loss Prevention Policies, Measures for Data movement access & monitoring
 - Use Cloud Shared responsibility Model to onboard IP in Public Cloud Securely using defense in depth control
 - Case study of “Synopsys Cloud” Secure Architecture
- Audience will walk away with
 - Various methodologies on Securing IP
 - Reference Secure Architecture

Sudesh Gadewar is Grp Director, Information Security at Synopsys leads Information Security Architecture and Engineering team globally. Sudesh holds 15+ years of experience in security where passion is in offense and defense of security. Sudesh lead Synopsys cyber security engineering and architecture efforts on Secure architecture on On-Prem, Cloud Security, Tooling, Frameworks, Automation, and Threat Intelligence.

Dr. Bob Lefferts has a Ph.D. from Stanford University in Semiconductor Device Physics and 40 years of experience in the Semiconductor industry. Bob has been at Synopsys since 2004 and held positions managing a high speed SERDES IP team for his first 6 years and then managed Synopsys' CAD & Design enablement team for the past 10 years. Bob is currently a Synopsys Fellow and is currently engaged in working with Synopsys' full mixed-signal IP development design environment in the cloud for flexible IP development.

Enabling Best Practices for Design in Cloud

Paul Buenrostro, Director, Engineering IT, Western Digital

Abstract

Protection of intellectual property in the cloud is a challenging issue for semiconductor organizations. As cloud adoption continues to increase, many are looking for best practices and solutions to secure their IP in the cloud. While cloud providers have helped to address some of the issues, it is vital to have fine-grain access controls and to secure boundaries around certain pockets of technology to keep IP secure.



Proven professional with more than twenty years of experience delivering solutions for Semiconductor organizations. Strategic with significant achievements and expertise in long-term planning and engineering-focused services including HPC, DevSecOps, observability and automation