Zero Trust and High Assurance for Cloud Native Applications

4th Annual Multi-Cloud Conference

MC: **Dr. Michaela Iorga**, Senior Security Technical Lead, *NIST*

NIST   DoC   Tetrate

Dr. Michaela Iorga
Sr. Security Lead for Cloud Computing
OSCAL Strategic Outreach Director
CSD/ITL/NIST

Dr. Michaela Iorga serves as senior security technical lead for cloud computing with the National Institute of Standards and Technology (NIST), Computer Security Division. She also serves as the Strategic Outreach Director for the Open Security Controls Assessment Language (OSCAL) project and chairs the NIST Cloud Computing Public Security and Forensics Working Groups.

Having previously served in a wide range of consulting positions in both, government and private sector industries, Dr. Iorga has a deep understanding of cybersecurity, risk assessment and information assurance for cloud, fog and IoT systems. In her role at NIST, Dr. Iorga supports the development and dissemination of cybersecurity standards and guidelines that meet national priorities and promote American innovation and industrial competitiveness.

Aligned with NIST's mission, Dr. Iorga's work particularly focuses on collaborating with industry, academia, and other government stakeholders on developing a high-level, vendor-neutral cloud, fog and IoT security and forensics guidance. Dr. Iorga received her Ph.D. from Duke University in North Carolina, USA.

David Ferraiolo
Manager, Secure Systems and Applications
CSD/ITL/NIST

David F. Ferraiolo is the manager of the Secure Systems and Applications group of the Computer Security Division, at the National Institute of Standards and Technology. He has conducted extensive research in various areas of access control and authorization management, including formal model development, reference and prototype implementation, product demonstration development and evaluation. He is a coauthor of a book on Role-based Access Control and a book on Attribute Based Access Control, is the author or coauthor of more than 50 papers and journal articles on topics of access control, and the principle inventor on two patents. Due to his work, RBAC has advanced from a concept to the world's most widely used access control model, with features that show up at virtually all levels of computing. He received the 2019 ACSAC "Test of Time Paper" award, 2018 IEEE Innovation Award in Societal Infrastructure Award, a U.S. Department of Commerce gold medal, and an Excellence in Technology Transfer award from the Federal Laboratory Consortium and has served on the boards of numerous standardization efforts to include, the Common Criteria (ISO 15408), Role-Based Access Control (ANSI/INCITS 359), Next Generation Access Control (ANSI/INCITS 499 and 526).

Zack Butcher Founding Engineer, Tetrate	Zack works as a Founding Engineer at Tetrate and has helped in a variety of roles across the company - currently he's Head of Product. At Tetrate he works with some of the largest enterprises in the world to adopt Envoy and Istio. Before Tetrate, Zack was one of the earliest engineers on the Istio project at Google, and currently sits in his second term as a community elected representative on the project's Steering Committee. He co-wrote Istio: Up and Running and works actively with NIST to co-author a series of Special Publications forming the authoritative recommendations for microservice security for the US government, including NIST SP 800-204A and NIST SP 800-204B. He also collaborates with that same group at NIST in undertaking research into cutting-edge access control algorithms and systems. Before Istio, Zack worked across Google Cloud Platform on its central resource hierarchy, service management, identity & access management systems, as well as Google's internal mesh that Istio draws from.
Edd Wilder-James VP Open Source, Sysdig	Edd is Vice President of Open Source Ecosystem at Sysdig. His work guides investment and growth in the open source platforms powering modern cloud security. Prior to joining Sysdig, Edd led open source development and outreach programs at Google, driving strategy for projects such as TensorFlow, Kubernetes, Istio, and Go. A leader in the worlds of open source and data analytics, Edd spent six years as chair of the Open Source Convention (OSCON), was founding chair of the pioneering big data and data science conference, O'Reilly Strata, and part of the executive team at Silicon Valley Data Science.
Matt Bates CTO, Venafi	Matt is CTO (Cloud Native) for machine identity cybersecurity company Venafi. He was the co-founder of Jetstack, a company focused on solutions for Kubernetes in the enterprise. Since its launch, he has contributed to the Kubernetes project, both to the technology and to the ecosystem. He was an early employee at NoSQL startup MongoDB, and previously at Deutsche Telekom R&D and Detica. When he's not talking Kubernetes and cloud native security, he loves cycling, swimming and spending time with his family.

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Dr. Ramaswamy Chandramouli Sr. Computer Scientist CSD/ITL/NIST	Dr. Ramaswamy Chandramouli is a Senior Computer Scientist at the Computer Security Division at National Institute of Technology (NIST) USA for over 25 years. His publications span diverse areas such as RBAC, Model-based Security Testing, Smart Card Interface & Test Specifications, DNS & Email Security, ABAC and Security Guidance for Hypervisor, Container and Service Mesh deployments and DevSecOps. He is the co-author of 3 Technical books, 30 NIST publications and 37 peer-reviewed conference and journal publications.
Ross Foard CISA, DHS	With over 20 years of public sector and commercial cybersecurity and identity and access management experience, Ross Foard supports DHS' Cybersecurity and Infrastructure Security Agency (CISA) as a senior engineer in the Architecture and Engineering Center of Excellence. Mr. Foard has expertise in the architecture and technical integration of several security domains and capabilities including Identity, Credentials and Access Management (ICAM), Cryptography, Data Protection and Zero Trust Architecture (ZTA). Mr. Foard is the co-lead on the Federal Mobility Group (FMG) Derived PIV Working Group (DPIVWG) which shares information across federal agencies about industry practices in adopting phishing-resistant authenticators. Mr. Foard's professional goal is to help engineers and agency leaders understand how to identify and prioritize cybersecurity risk and continuously mitigate that risk through a strong focus on identity-centric ZTA.
Frederick Kautz Senior VP of Engineering TestifySec	Frederick Kautz is an exceptional leader with an extensive background in the Open Source Community. With over a decade of experience in Cloud-Native environments, Frederick's expertise lies in security, networking, and storage domains. He has co-authored several publications, including the Cloud Native Security White Paper and Solving the Bottom Turtle. As a Co-Chair for KubeCon + CloudNativeCon and a member of the SPIFFE Steering Committee, Frederick is at the forefront of the industry, providing Zero Trust Workload Identity to compute workloads and resources. Frederick has co-created multiple innovative projects, most recently OmniBOR and its Golang and Rust reference implementations. Frederick is also a co-founder and maintainer of Network Service Mesh. His work in Network Service Mesh has helped to modernize network infrastructure and collaborate with a large and diverse group of companies and individuals. Frederick's prior work defined the Cloud-Native Network Function, which significantly influences multiple significant collaborations, including CNCF, LFN, IEEE, and the GSMA. Additionally, Frederick is a strong advocate for empowering patients' ownership of their health data and democratizing healthcare research. He has pioneered Federated Learning and privacy-preserving technologies, which enable multiple organizations and patients to collaborate without exposing sensitive data to each other. Frederick co-chairs the CTA ANSI/CTA-2114: Mitigating Cybersecurity Threats in ML-Based Systems Committee. He leads multiple cross-organizational teams to develop industry standards for security and privacy in Machine Learning.
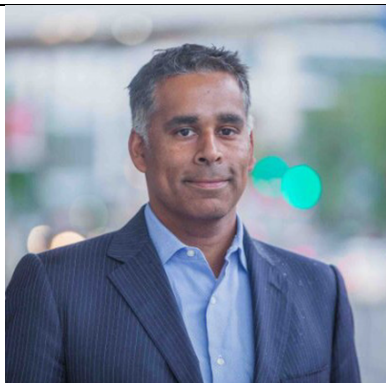
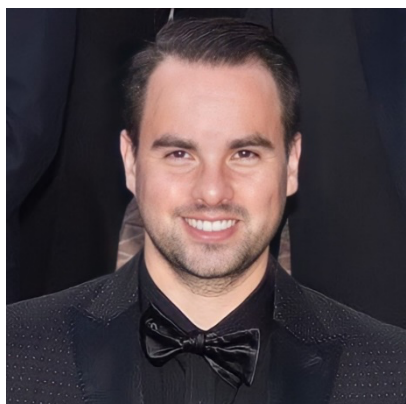|	
Justin Antonipilai Founder and CEO Wirewheel.io and former Under Secretary for Economic Affairs, DoC	WireWheel's Data Privacy Management (DPM) Platform leverages the latest advancements in artificial intelligence, machine learning, and distributed computing and addresses all phases of privacy management including program management, data inventory, risk assessments, monitoring and compliance reporting. Before founding WireWheel, Justin served as Acting Under Secretary for Economic Affairs at the U.S. Department of Commerce, under the leadership of Secretary Penny Pritzker. In that capacity, Mr. Antonipillai led the Economics and Statistics Administration, which includes two of our nation's leading information agencies: the Census Bureau and the Bureau of Economic Analysis. Mr. Antonipillai also led a number of high-priority US Government efforts around privacy and security. From 2013 until 2016, Mr. Antonipillai led the U.S. Negotiating Team in reaching the E.U.-U.S. Privacy Shield with Europe. Mr. Antonipillai also has been deeply engaged on the issues of cybersecurity, encryption, and privacy—including on the General Data Protection Regulation, Signals Intelligence Reform, and other US domestic privacy law issues – and a wide range of economic issues, including tax and data policy issues. Prior to joining the Commerce Department, Mr. Antonipillai was a partner with the international law firm of Arnold & Porter LLP where he focused on the growth of United States-based companies, and in representing private equity funds, and accounting firms. During his time in private practice, Mr. Antonipillai was selected one of the "Top 40 Lawyers Under 40" by Washingtonian Magazine, and one of the "Top 40 Business People Under 40" by the Washington Business Journal. In 2016, Mr. Antonipillai was awarded the National Intelligence Medallion by Director James Clapper. Mr. Antonipillai received his BA from Cornell University in 1994 and a law degree from American University, Washington College of Law in 1997.
Andres Vega VP Operations Control Plane	Throughout my career, my focus has been on the intersection of cloud infrastructure, security, and software delivery with open source projects like the Linux Kernel, Linux Containers, container orchestration systems such as Kubernetes As a product, operations, and services leader, I'm passionate about bringing innovative ideas to fruition. My specialty is driving positive organizational change and facilitating security engineering outcomes at all stages of the product development lifecycle. I participate actively in the Cloud Native Computing Foundation (CNCF) as a Technical Leader in the Security Technical Advisory Group (TAG Security).
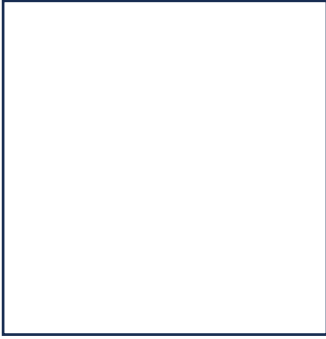
Désiré Banse Sr. Cloud Security and DevOps Engineer IdeaCrew	I am an enthusiastic person who have lived in West Africa, France and now the US. I speak English, French, a little Italian and 2 other African languages. I'm always learning and open minded. Working on evaluations and technology metrology has taught me to always self assess and look for what moves a product forward. Designing large-scale multi-purpose online platforms was key in dealing with requirements and people. I also work on computer vision, hardware and electronics in my basement, always trying experimental design for innovative solutions to problems like robust authentication, security and internet in Africa. A paper was actually published on the Internet connectivity in Africa. Providing end to end solutions, architecting systems are what drive me. I'm good at Web applications, hardware prototyping and leveraging modern tools for fast delivery.
Robert Ficcaglia Chair Kubernets Policy Workgroup Lead Assessor, CNCF Security Technical Advisory Group, CTO, SunStone Secure, LLC.	Robert has worked with numerous agencies and private sector technology companies spanning 3 decades. His innovations and contributions have directly created over $10B in new market value via IPO and M&A. He has authored numerous patents on cryptographic designs and has built multiple FIPS validated software and hardware products. He helped create the world's first billion user internet payment system with Visa and MasterCard. He has worked for over a decade in healthcare, having built secure healthcare platforms for 2 private nation-wide care systems, and has worked on multiple projects with the VA. He recently helped lead the Cloud Native Computing Foundation's security audit of the Kubernetes container orchestration platform and co-chairs the CNCF's Kubernetes Policy Workgroup. As CTO and co-founder of SunStone, he helps accelerate cloud security and compliance with FedRAMP using OSCAL and graph machine learning.
Ignasi Barerra Founding Engineer, Tetrate	Ignasi is an Engineer specializing in networking and security for large infrastructures. He is a long-term open-source contributor and a Member of the Apache Software Foundation. He is a founding Engineer at Tetrate where he works on service mesh with a special focus on multi-cloud security and the research of new access control technologies for large distributed systems.

Joshua Roberts Computer Scientist CSD/ITL/NIST	Joshua Roberts is a Computer Scientist and Chief Architect for Next Generation Access Control (NGAC) related technologies and lead developer for the Secure Federated Data Sharing System (SFDS) at the NIST. Over his ten years at NIST Mr. Roberts' work pertained to the entire technology-transfer life cycle including publications, prototype development, product demonstrations, standards reference implementation, opensource distribution, and patent development. He led development of NIST's open-source reference implementation of ANSI/INCITS 565 -- NGAC, Next generation Database Access Control (NDAC), and the integration of the Data Block Matrix with Hyperledger Fabric and associated demonstration platforms. For these technologies, he developed and implemented new algorithms with associated benchmarks and metrics to demonstrate continued improvement of performance and scalability. Mr. Roberts co-authored ten papers and journal articles on related topics, is a co-inventor on three patents, and recipient of the NIST Information Technology Laboratory award for Excellence in Technology Transfer.
Brian Ruf Director for Cybersecurity, Easy Dynamics	Brian has over 30 years in IT and over 20 years in cybersecurity, including more than five years at the FedRAMP PMO where he was an ISSO and later an Authorization Lead. Brian also led efforts to formalize and roll out the FedRAMP Accelerated processes. He also represented FedRAMP's interests as a core member of the NIST OSCAL Team, where he developed early drafts and guided the formal publication of the machine-readable standard for key FedRAMP artifacts. Brian has lead efforts related to cloud inheritance and currently co-chairs the Multi-Cloud Security Public Working Group (MCSPWG) as well as its Authorization to Operate (ATO) focus group.
Daniele Catteddu CTO Cloud Security Alliance	Daniele Catteddu is an information security and risk management executive, technologies and governance expert and privacy evangelist. He worked in several senior roles both in the private and public sectors. Currently, he is the CTO, at Cloud Security Alliance, where he is responsible for driving the adoption of the organization's technology strategy. Mr Catteddu is the co-founder of the CSA STAR Program.. Mr. Catteddu, is a published author and his papers have over thousand academic mentions. He is a member of several Scientific Committees and Advisory Boards, a lecturer at the Maastricht University Centre on Privacy and Cybersecurity, and a keynote speaker at several globally recognised conferences. In the past, he worked at ENISA, the European Cyber Security Agency, as an expert in the areas of Critical Information Infrastructure Protection and Emerging and Future Risks.

Nicolas (Nic) M. Chaillan
Founder, Ask Sage and Learn with Nic,
Former Air Force and Space Force
Chief Software Officer

Former U.S Air Force and Air Force Chief Software Officer – Departed October 2021

Mr. Nicolas M. Chaillan was appointed as the first Air Force Chief Software Officer (CSO), under Dr. William Roper, the Assistant Secretary of the Air Force for Acquisition, Technology, and Logistics, Arlington, VA. He was also the Co-lead for the DoD Enterprise DevSecOps Initiative (DSOP) with the Department of Defense Chief Information Officer. As the Air Force's former senior software czar, Mr. Chaillan was responsible for enabling Air Force programs in the transition to Agile and DevSecOps to establish force-wide DevSecOps capabilities and best practices, including continuous Authority to Operate (c-ATO) processes and faster streamlined technology adoption.

The Chief Software Officer worked with the Program Executive Officers (PEOs) and was responsible for analyzing current software and cloud migration plans to avoid vendor lock-ins while allowing for rapid prototyping and a streamlined process for deployment. To keep up with the pace of technology, Mr. Chaillan evaluated and authorized new commercially available off-the-shelf software and cloud-related technologies to help with their adoption across various AF programs based on their mission needs.

Mr. Chaillan was the Special Advisor for Cloud Security and DevSecOps at the Department of Defense, OSD, A&S and Special Advisor for Cybersecurity and Chief Architect for Cyber.gov at the Department of Homeland Security. He designed the new robust, innovative and holistic .Gov cybersecurity architecture (Cyber.gov) that mitigates cyber threats by leveraging best practices and implementable solutions with minimal impact to workforce efficiency.

In addition to his public service, Mr. Chaillan is a technology entrepreneur, software developer, cyber expert and inventor. He has over 23 years of domestic and international experience with strong technical and subject matter expertise in cybersecurity, software development, product innovation, governance, risk management and compliance. Specifically, these fields include Cloud computing, Cybersecurity, DevSecOps, Big Data, multi-touch, mobile, IoT, Mixed Reality, VR, and wearables.

Mr. Chaillan is recognized as one of France's youngest entrepreneurs after founding, WORLDAKT at 15 years of age. Mr. Chaillan founded 12 companies, including AFTER-MOUSE.COM, Cyber Revolution, Prevent Breach, anyGuest.com, and more. Over the last eight years alone, he created and sold over 180 innovative software products to 45 Fortune 500 companies. In addition, Mr. Chaillan is recognized as a pioneer of the computer language PHP.

In 2022, Mr. Chaillan founded Learn with Nic, a self-learning digital platform with a world's first collaboration space in the metaverse under https://cloudnative.town. More recently, Mr. Chaillan founded Ask Sage, Inc, bringing Generative AI capabilities (GPT) to government teams (https://www.asksage.ai).

He is a sought-after adviser and speaker, and participates in multiple industry conferences and has experience working in close collaboration with many Fortune 100 companies and the U.S. Government.

Matthew Scholl
Division Chief
CSD/ITL/NIST

Matthew Scholl is the Chief of the Computer Security Division in the Information Technology Laboratory at the National Institute of Standards and Technology (NIST). His responsibilities include cryptographic standards used by the U.S. Government and internationally, Cybersecurity Research and Development at NIST, and Cybersecurity Standards and Guidelines for Federal Agency Security Programs. He also co-leads NIST's participation with Cybersecurity National and International Standards Development Organizations (SDOs) and associated conformance testing programs. Mr. Scholl has a Master's in Information Systems from the University of Maryland and a bachelor's degree from the University of Richmond. He is a U.S. Army veteran and currently has more than 20 years of federal service.