

# MEDIA MANAGEMENT IN THE CLOUD

Advances in Content Reliability and Security | Tuesday, April 14 - Wednesday, April 15



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**ABOUT THE ENTERTAINMENT TECHNOLOGY CENTER**

The Entertainment Technology Center @ the University of Southern California (ETC) is a think tank and research center that brings together senior executives, innovators, thought leaders and catalysts from the entertainment, consumer electronics, technology and services industries along with the academic resources of the University of Southern California to explore and to act upon topics and issues related to the creation, distribution and consumption of entertainment content. As an organization within the USC School of Cinematic Arts, ETC helps drives collaborative projects among its member companies and engages with next generation consumers to understand the impact of emerging technology on all aspects of the entertainment industry, especially technology development and implementation, the creative process, business models, and future trends.

For membership information, contact Edie Meadows at [emeadows@etcenter.org](mailto:emeadows@etcenter.org)

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## WELCOME TO MEDIA MANAGEMENT IN THE CLOUD

The Media Management in the Cloud (MMC) conference, organized by The Entertainment Technology Center @ USC (ETC), is for senior-level media professionals from broadcast, cinema, and the Internet, to include content creators, software/applications professionals, film distribution professionals, and production/postproduction professionals. The 2-day event provides senior managers with an overview of how cloud-based solutions positively impact each stage of the content distribution chain, including production, delivery, and storage. Key topics to be covered are collaboration, cost-savings, distribution, metadata, security, workflows and reliability.

As a neutral think tank and research center within the USC School of Cinematic Arts, ETC currently leads Project Cloud, a comprehensive program that brings together key media and cloud-resource leaders to develop guidelines and accelerate innovation and adoption of next-gen cloud-based content creation, production, and distribution tools and processes.

### Conference at a Glance

#### Day 1 Tuesday, April 14, 2015

9:00 – 9:10 am	Opening and Introductions – Cloud Leadership
9:10 – 9:40 am	<b>Media Management in the Cloud Keynote: Cloud for M&amp;E</b>
9:40 – 10:30 am	Update on Industry Cloud Tenants: Key Leaders Speak
11:00 – 11:50 am	Breaking Up is Hard to Do! Leaving Physical Media Behind in a Digital World
11:50 – 12:05 pm	Pizza as a Service: IaaS, PaaS & SaaS of Cloud Explained
1:30 – 2:00 pm	<b>Media Management in the Cloud: The Power of the Ecosystem</b>
2:00 – 2:45 pm	M&E Cloud Ecosystems Panel
3:00 – 4:00 pm	Luna Lessons in Cloud-Based Workflows
4:15 – 5:15 pm	Cloud Case Studies: Transitions and Strategies
4:15 – 4:30 pm	Using Hybrid Cloud Technology to Manage on Premise Content Across Multiple Locations
4:30 – 4:45 pm	Integrating a Cloud Into a Broadcast Workflow
4:45 – 5:00 pm	Planning your Cloud Strategy
5:00 – 5:15 pm	Reducing 4K UHD Content Distribution Costs with Cloud Workflow Strategies

#### Day 2 Wednesday, April 15, 2015

10:00 – 10:45 am	<b>Putting the Power of the Cloud at the Tip of the Artist's Pencil</b>
11:00 – 11:30 am	<b>MPAA Keynote: Release of the First MPAA Cloud Security Standards</b>
11:45 – 12:30 pm	Cloud Security, Today, Tomorrow and Beyond
12:30 – 2:00 pm	Vignette Chats with Key Speakers of the Virtual Conference
2:00 – 3:00 pm	Rendering in the Cloud
3:15 – 4:00 pm	Streaming HD Sports Video to Second Screens via Cloud
4:15 – 5:00 pm	Cloud's Renaissance of Media Workflows: Exploring the Success and Future of the Cloud
5:15 – 5:30 pm	Conference Wrap-Up

TUESDAY, APRIL 14

**9:00 am - 9:10 am Cloud Leadership**

What are the solutions, systems, and ecosystem of tomorrow? This two-day event track will showcase cloud-based practices that are reliable, secure, and economically viable. Experts from each link of the content creative chain will provide a senior management overview of the cloud's impact on each phase.

**Ken Williams**, Executive Director & CEO, *Entertainment Technology Center@USC*

**Erik Weaver**, Senior Project Lead, *Entertainment Technology Center@USC*

**9:10 am - 9:40 am Media Management in the Cloud Keynote: Cloud for M&E**

The media industry is at an inflection point. The data created by this industry is exploding due to technological advances across end user devices, ever increasing resolution, higher frame rate and color depth. Whether it's a broadcaster, production studio, post house or an OTT provider everyone in the industry is bombarded with challenges in infrastructure costs, content security and collaboration. It's a question of 'how', NOT 'if or when' the media industry adopts cloud services to meet their massive requirements for burst compute and long term storage.

**Brian Stevens**, VP Cloud Platforms, *Google*

**9:40 am - 10:30 am Update on Industry Cloud Tenants: Key Leaders Speak**

Panelist from each phase of the content chain will provide an overview of current cloud technologies and use in the M&E industry.

Moderator, **Al Kovalick**, Founder, *Media Systems Consulting*

**Brian Stevens**, VP Cloud Platforms, *Google*; **Bill Neuman**, VP Products, *Avid*; **Ben Masek**, CTO, *Sony Media Cloud Services*; **Bill Roberts**, Sr. Dir. Professional Video Product, *Adobe*; **John Engates**, CTO, *Rackspace*

**11:00 am - 11:50 am Breaking up is Hard to Do! Leaving Physical Media Behind in a Digital World**

Cloud success stories, workflow improvements, and future challenges. The panel includes participants from a cross section of forward thinking media companies that represent the various pieces of a complete workflow from production, distribution, and archive.

Moderator, **Christine Thomas**, Director, *Dolby*

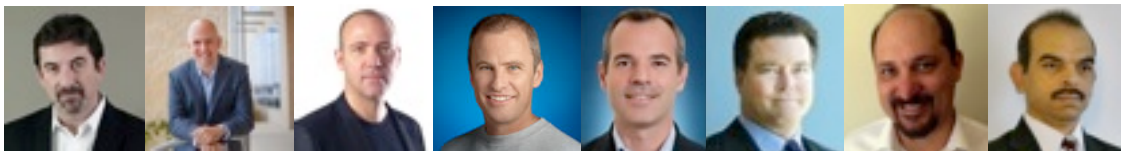
**Brian Lillie**, CIO, *Equinix*; **Curt Behlmer**, SVP *Dolby*; **Brian Campanotti**, Director Business Development, *Oracle*; **Joshua Rizzo**, CTO, *Hulu Post*; **Nitin Narkhede**, General Manager of Emerging Technologies and Innovation,

**11:50 am - 12:05 pm Pizza as a Service: IaaS, PaaS & SaaS of Cloud Explained**

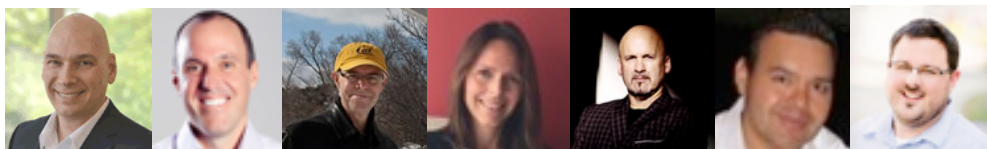
A pizza analogy provides a breakdown of IaaS, PaaS, SaaS: the basics of cloud computing and its associated service models. What is IaaS, PaaS and SaaS and how are they different? While these acronyms are used frequently, and often superfluously, in our business acumen, in many cases it's difficult to understand or explain the differences between the various "cloud" service models. Using pizza as an analogy, we'll demystify the differences between the various cloud service model implementations in a form that everyone can understand.

**Albert Barron**, Software Client Architect, *IBM*

**12:05 pm - 1:30 pm Lunch - Sponsored by Wipro**



Williams Engates Roberts Stevens Masek Behlmer Weaver Narkhede



Neuman Campanotti Kovalick Thomas Lillie Baron Rizzo

**TUESDAY, APRIL 14 (continued)**

**1:30 pm - 2:45 pm**

**M&E Cloud Ecosystems Panel**

Future cloud workflows will be centered in ecosystems. Examine key ecosystems and solutions.  
**Curt Behlmer**, SVP, *Dolby*

**Keynote** - **Mark Ramberg**, GM, Media, *Amazon* - **Panel** - **Brian Gant**, GM Digital Media, *Rackspace*; **Scott Spector**, GM, Global Media & Entertainment, *Verizon VDMS*; **Martin Wahl**, Principal Program Manager, *Microsoft*; **Shane Archiquette**, CTO, Media, *Hitachi HDS*; **Steven Canepa**, GM, Media, *IBM*

**3:00 pm - 4:00 pm**

**Luna: Lessons in Cloud-Based Workflows**

LUNA, a short film designed to establish the past, examine the current reality and determine benefits of cloud centralization.

**Michelle Huynh**, VP, Content Operations & Security, *Universal Pictures*; **Abi Corbin**, Director, *Luna*; **Michael Fink**, Chair, Division of Film & Television Production, *USC School of Cinematic Arts*; **Guillaume Aubuchon**, CTO, *Digital Film Tree*

**4:15 pm - 5:15 pm**

**Cloud Case Studies: Transitions and Strategies**

**Using Hybrid Cloud Technology to Manage On-Premise Content Across Multiple Locations**

Multiple MAMs across geographies leads to more confusion. This presentation will provide an overview of "Hybrid Cloud" technology that effectively addresses these challenges. Hybrid Cloud technology places "Content at the Center" of the business. It takes cognizance of content operations across multiple locations in the world.

**Chris Chen**, CTO, *Prime Focus*

**Integrating a Cloud Into a Broadcast Workflow**

Cloud talk is everywhere, but most broadcasters have more on-premises resources such as media asset management (MAM) systems and proprietary broadcast equipment than cloud based resources today, and they're certainly not going to scrap them. The challenge is to find the best way to leverage and monetize any given cloud enabled resource within a hybrid workflow, and still achieve maximum efficiency and control.

**David Peto**, CEO & Founder, *Aframe*; **Mike Daniels**, VP Post Production, *VICE*

**Planning Your Cloud Strategy**

With the increasing maturity of Cloud technologies and greater customer adoption, implementation benefits are moving beyond mere cost saving. Vish Mavathur expounds on how the Cloud today is a strong enabler of business transformation and growth for broadcasters.

**Jeff Martin**, Digital Enterprise North America, *TATA Consultancy Services*

**Reducing 4K UHD Content Distribution Costs with Cloud Workflow Strategies**

Rather than layout the capital for new 4K workflows and risk infrastructure obsolescence, integrating cloud-based solutions into the existing workflow will facilitate the migration to 4K at a much lower cost, while providing the flexibility to scale content and services at the pace commensurate with the market.

**Ken Goeller**, VP, Solutions Engineering, *Deluxe Digital Distribution*

**5:15 pm - 5:30 pm**

**Closing Comments**



Behlmer

Gant

Spector

Wahl

Archiquette

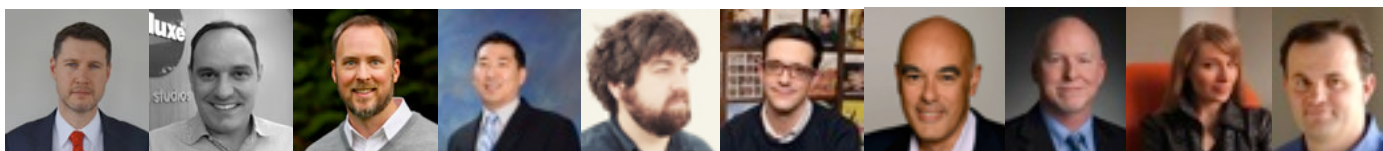
Canepa

Fink

Ginsberg

Peto

Huynh



Martin

Goeller

Ramberg

Chen

Aubuchon

Daniels

Wallen

McCoskey

Corbin

Reavis

**WEDNESDAY, APRIL 15**

10:00 am - 10:45 am

**Putting the Power of the Cloud at the Tip of the Artist's Pencil**

Cloud-based services are transforming both business and consumer's experience with products and services. Media distribution and consumption have, of course, been at the forefront of this transformation. Less visible has been the impact of the cloud on media production itself. For over a decade, DreamWorks Animation has been a pioneer in the use of cloud techniques to improve the creative process in animated film production. DreamWorks' latest innovation - Apollo - combines the latest silicon architecture with a robust use of hybrid cloud to bring the power of supercomputing to artists' fingertips.

Lincoln Wallen, CTO, *Dreamworks*

11:00 am - 11:30 am

**MPAA - Keynote: Release of the first MPAA Cloud Security Standards**

The MPAA, in combination with CSA, has been working to craft cloud security standards for the industry. MPAA and CSA will release and elaborate on the first set of cloud application security controls for the media and entertainment industry.

John McCoskey, EVP & CTO, MPAA; Jim Reavis, Executive Director, CSA

11:45 am - 12:30 pm

**Cloud Security: Today, Tomorrow and Beyond**

Cloud security solutions advance. How are the new cloud-based solutions addressing security. And what changes, as an industry, are evolving to protect the content of the future.

Moderator, **Dave Ginsberg**, CTO, Sundance Institute  
**Justin Somaini**, Chief Trust Officer, Box; **Patrick McGregor**, Product Management Lead, Cloud Platform, Google; **Chris Chen**, CTO, Prime Focus; **Ian Hamilton**, CTO, *Signant*

12:30 pm - 2:00 pm

**Lunch - Vignette Chats with Key Speakers of the Virtual Conference**

2:00 pm - 3:00 pm

**Rendering in the Cloud**

Cloud offers amazing scalability and can compliment your existing render farm. Come see our approaches to leveraging the cloud's burst capacity to maximize artist productivity. Learn how others have succeeded in making the cloud part of their competitive advantage.

Moderator, **David Morin**, Industry Relations & Business Development, *Autodesk M&E*  
**Todd Prives**, CEO, *Zinc Render*; **Don Parker**, CEO, *Shotgun*; **Lon R Grohs**, Chief Commercial Officer, *Chaos Group Labs*; **Derick Chan**, CTO, *Dreamworks*

3:15 pm - 4:00 pm

**Streaming HD Sports Video to Second Screens via Cloud**

As consumer demand for more content and coverage of sporting events continues to rise, by unleashing the power and scale of cloud video processing, sports broadcasters and content delivery networks can broadcast live events in radically new ways.

Moderator, **Chuck Parker**, Executive Director/Chairman, *Sohonet*  
**James Stellpflug**, VP, EVS; **Will Law**, SVP, *Akamai*; **Michelle Munson**, CEO, *Aspera*; **Jonathan Wilner**, VP Products, *Ooyala*

4:15 pm - 5:00 pm

**Cloud's Renaissance of Media Workflows: Exploring the Success & Future of the Cloud**

Studios, broadcasters, production companies and independent filmmakers have all leveraged the cloud to improve workflows. The actual burning question now is... what's next? How will the cloud work with 4K and beyond? In this session, panelists from across the production landscape discuss successful implementations, their next big cloud idea, and the future of a cloud enabled media industry.

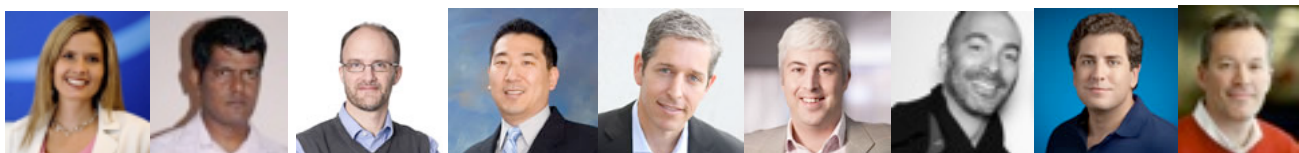
Moderator, **David Rosen**, VP Solutions Business Development, *Sony Media Cloud Services*  
**Eric Iverson**, CIO, Sony; **Michael Koetter**, SVP, Turner Broadcast; **Josh Kline**, Head of Media & Entertainment, *Box*; **John Eremic**, Workflow Specialist, *HBO*; **Santhosh Kumar**, Head of Digital Practice, *Wipro Global Media and Telecom Business Unit*

5:15 pm - 5:30 pm

**Closing Comments - Erik Weaver**



Parker      McGregor      Hamilton      Chan      Grohs      Parker      Koetter      Morin      Law



Munson      Kumar      Stellpflug      Chen      Rosen      Wilner      Kline      Prives      Somaini

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**ETC @ USC HOSTS NAB VIRTUAL CLOUD CONFERENCE**



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The Entertainment Technology Center @ USC hosted a 3-day NAB Virtual Cloud Conference, featuring more than 35 speakers, panelists and keynotes, on March 2, 3 & 4 at the YouTube Space LA. The conference was an extension of the Media Management in the Cloud track that ETC leads at the NAB Show and provides a forum for a deeper discussion of Media & Entertainment and the Cloud. The entire program was recorded and videos are posted on the ETC YouTube channel to provide a lasting repository of perspectives and experiences in this rapidly evolving sector.

Erik Weaver, who manages Project Cloud for ETC and organizes the Media Management in the Cloud sessions at NAB, said that he received over 100 qualified presentation proposals; too many to include in the April proceedings but worthy of attention and a platform. He conceived the Virtual Conference not only to provide a forum for presentation of this work but “very importantly, to create an opportunity to elaborate on some subjects more than the panel format at the NAB show provides.”

“There are stories that need to be told and my goal is to tell those stories,” said Weaver. “Now anyone interested in these zones has a forum and a place where these stories can be heard.”

The idea of recording and posting the sessions was a response to the ephemeral nature of the more traditional conference track and a desire to make this knowledge and experience more

widely available and build a reference resource. This is very much in keeping with ETC’s mission to convene industry leadership, provide a neutral setting for ideas and issues to be presented and discussed, and to share the results.

The program, printed on the following pages, was crafted around various key topics and structured with related subjects scheduled together. Day 1, on March 2, had a production orientation addressing matters of post in the Cloud, security and workflows. Day 2 looked closely at Media Asset Management, Digital Asset Management, Second Screen and OTT (Over The Top). The third day dove into analytics, open source, and Big Data.

Keynote speakers set the tone for the first two days. Faster, Better, Cheaper: Pick All Three! is the title of opening day remarks made by Miles Ward, Google’s head of global solutions and Denise Evans, vice president of Miramax, presented Digital Asset Management in the Cloud: Lessons Learned from Miramax on day 2.

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## Rackspace Specialists SPEAKING SESSIONS

TUESDAY, APRIL 14, ROOM S219

**9:40 – 10:30 a.m.**  
John Engates - Chief Technology Officer  
*Update on Industry Cloud Tenants:  
Key Leaders Speak (Panel)*

**2:00 – 2:45 p.m.**  
Brian Gant - Director of Media Services  
*M&E Cloud Ecosystem*

DAILY IN-BOOTH SESSIONS - 10:30 a.m. & 2:30 p.m.

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**Keynote**

**Keynote: Faster, Better, Cheaper: Pick all Three!**

Pre-viz? Rendering? Post-processing? Transcoding? Media Archival? Online Distribution? On-Demand Playback? Today making a movie sounds a lot more like a development project for geeks than artwork for the silver screen.

**Miles Ward**, Global Head Solutions, *Google*

**Post in the Cloud**

**It's All "Production" Now**

A discussion on blurring the lines between Production and Post, creating a bi-coastal cloud workflow for an unscripted multi-camera television series. From file-based ingest, dailies / proxy trans-coding and cross country data-movement from set to post. Leveraging "off the shelf" technology in innovative ways, including uplink bandwidth aggregation, multi-format transcoding, point to point WAN data sync, hosted network storage, Avid Media Composer, Avid Unity ISIS, you name it- all to enable post to being prepping within hours of shooting.

**Joshua Rizzo**, CTO, *Hulu Post*

**Acquiring the Production Brain Trust and the Many Assets Created and Placing them in the Cloud**

Film production is equal to a busy hot kitchen with no true order of operations other than we will figure it out in post. Being able to capture the many moving parts on set into a central location such as the cloud will help the post team recreate what happened on the day to solve post problems and save time and at the same time giving the post team the needed materials and metadata in real time.

**Craig Mumma**, CTO, *Joust*

**Distributed High-quality Image Manipulation and Review in a Virtual Collaborative Environment**

Taking advantage of centralized processing and storage, new dispersed workflows are now possible. Colorfront's cloud initiative enables virtual worldwide collaboration for high end motion picture and television production.

**Bill Feightner**, CTO, *Colorfront*

**Redefining the Complete Content Production and Management Model**

Panelists discussed the gains realized through integration of the file system with new types of storage, including object-based storage optimized for media, and explained how better use of the cloud for media-centric workflows is supporting more fluid and efficient on-premises and globally dispersed production environments.

**Skip Levens**, VP M&E, *Quantum*

**Transport**

**On-Demand Production Infrastructure Delivered Just In Time**

Today's productions increasingly demand the rapid provisioning and integration of core resources in order to support increasingly complex workflows across multiple partners. The integration of Workflow software to Infrastructure as a Service (IaaS) pools for compute, storage, and network is finally within reach with the advent of provisioning technologies like Software Defined Networking, API Abstraction, Orchestration and Transformation, and Network Function Virtualization (NFV). This track will discuss the evolution of the IaaS marketplace and the new business models that are cropping up as a result.

**Shane Guthrie**, Global Solutions Architect, *Equinix*

**Global Media Exchange: Work of the ETC**

The network is critical as file sizes increase. We will talk about how the ETC Transport work stream is working to simplify networking, and create a Global Media Exchange. The effort includes ondemand SDN and contracts that are OPEX (on demand) as opposed to locked in long term agreements.

**Christine Thomas**, Director, *Dolby*



Feightner

Rizzo

Mumma

Levens

Thomas

Ward

vNAB

**Security**

**Driving Rapid Production Workflows in a Virtual Cloud Environment that Puts Security First for High Value Productions**

While Silicon Valley start ups have been leveraging the virtual capabilities of the cloud for years, film and TV productions (essentially start-ups that launch a single product and disband) are finding adoption harder because of workflow challenges presented by their "big data" video product and recent security incidents in the industry have only made it harder. But there is a way forward.

**Chuck Parker**, Executive Director/Chairman, *Sohonet*

**Hackers, Attack Anatomy & Security Trends**

Presented by the elite organization of white hat hackers most widely known for being first to break the iPhone and the only security consulting firm engaged in the security team of USC's Project Cloud initiative, this session will analyze the anatomies of real world attacks against high profile systems. It will extract lessons from these attack anatomies to provide a framework to account for these modern attackers, articulate context to the Media & Entertainment industry, and supply attendees with key takeaways, including immediate actionable guidance.

**Ted Harrington**, Executive Partner, *ISE*

**Workflows  
VFX**

**VFX in the Cloud**

You've heard that the cloud offers amazing scalability and can compliment your existing render farm. Come see our approaches to leveraging the cloud's burst capacity to maximize artist productivity. Learn how others have succeeded in making the cloud part of their competitive advantage.

**Jeff Kember**, Cloud Solutions Architect, *Google*

**Pop Up Render Farm**

The logistics of rendering in a VFX environment can be incredibly complex; add cloud-based cores into the mix and they become even more complex. Different render applications, simulation tools, assets and dependencies are driven by unique workflows tailored to the needs of the client, the artist; and the job at hand. Key to making cloud rendering successful, is to bring that incredibly scalable resource to a facility's unique and local pipeline. Learn how studios can seamlessly merge public cloud resources such as Google, Amazon, Azure, Rackspace and others to their internal farms, adding thousands of cores as if they were inside the studio, giving facilities the flexibility to work the way that suits them best.

**Chris Bond**, CEO, *Thinkbox Software*

**Workflows  
Sports**

**Powering Live Events at Scale with Cloud: Azure Media Services**

Together with the premier features of Azure Media Services - notable live transcoding, CDN integration, telemetry, and a new suite of partners in the OVP and technology spaces and Azure Media Services are bringing scalable, reliable, and cost-effective premiere sports events to fans worldwide.

**Martin Whal**, Principal Program Manager, *Microsoft/Azure*

**Streaming HD Sports Video Content to Second Screens Through the Cloud**

As consumer demand for more content and coverage of sporting events continues to rise, by unleashing the power and scale of cloud video processing, sports broadcasters and content delivery networks can broadcast live events in radically new ways.

**Michelle Munson**, CEO, *IBM/Aspera*



Parker

Harrington

Whal

Kember

Bond

Munson

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**Workflows**  
**4K**

**4K Media Workflows on AWS**

4K video is fast setting the minimum bar for content capture, be it consumer, prosumer, professional, episodic or theatrical. This in turn is leading to more demanding infrastructure requirements for media production, management and distribution. Consumers now have a variety of viewing devices and expect an optimal viewing experience for all of them, regardless of screen size or bandwidth availability. Media companies need to deliver on that consumer expectation while at the same time optimizing for costs. They need to produce content for the highest quality viewing experience, but have the ability to deliver to a wide variety of quality levels. They need an infrastructure that scales automatically and just works, whether it is a full 4K production workflow, subsequent archive and content management, or a multi-device streaming. In addition to discussing the way in which an agile cloud infrastructure can meet the demands of a 4K workflow, this session will cover cutting edge technologies like remote application visualization and server-less workflow automation that can greatly help today's media companies in the race to serve their gadget savvy consumer.

**Shakeel Usman**, Principal Solutions Architect, *Amazon*

**Keynote**

**Digital Asset Management in the Cloud: Lessons Learned from Miramax**

Miramax is constantly seeking new and efficient ways to manage the large volume and rights formats of their digital assets and prepare for the future. This discussion will focus on cloud-based digital asset management in the Media & Entertainment industry. Specifically, the session will do a deep dive on Miramax's implementation of a SaaS digital rights management solution which efficiently manages their vast film library acquired from Disney. Miramax's VP of IT, will highlight lessons learned and some unexpected discoveries during the aggressive 90-day implementation window. As a result of implementing a robust asset management solution, Miramax was able to significantly increase revenues from \$40M to \$190, a 4-fold increase.

**Denise Evans**, VP IT, *Miramax*

**MAMs/DAMs**

**Media Workflow at Scale - How Wide Area Workflow Enables Faster Time to Playout**

Media services companies have an ever complex workflow that requires faster and more diverse capabilities that allow for comprehensive production and post production processes to function securely and dynamically. New enabling technologies allow a combination of acceleration, quality of service, and I/O intensive workflow to be facilitated over various distance vectors. This talk will cover some of the key constructs in enabling a Wide Area Workflow.

**Shane Archiquette**, CTO-Media, *Hitachi Data Systems*

**Making Broadcast MAMs More Like the Cloud**

This talk would describe the use of cloud-based self-service work spaces in broadcast workflows - including the problem of obtaining ready access to tens of TB of original programming, and having the ability to share that with any global partner both as proxies and as full-broadcast resolution content. The talk will review two different yet effective self-serve delivery model that allows business partners quick and easy access to original content, and the option to transcode it into the format of their choice.

**David Frasco**, VP of North American Sales, *Aframe*

**LUNA - Lessons in Cloud Based Workflows: Universal, ETC & Digital Film Tree**

LUNA, a short film produced by Universal/ETC cloud project, had the goal to establish the past, examine the current reality and determine benefits of cloud centralization. This talk will explore the outcome from multiple points of view, including studio perspective and director's point of view then outlines failures and successes of the project.

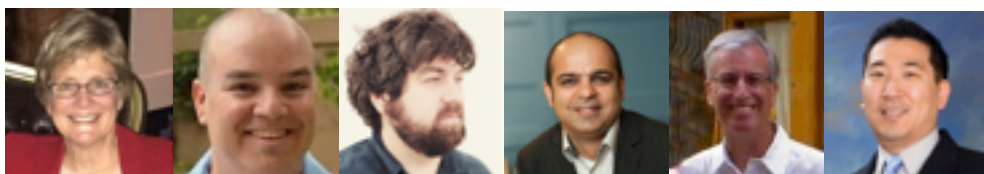
**Guillaume Aubuchon**, CTO, *Digital Film Tree*

**Hybrids & Ecosystems**

**Using Hybrid Cloud Technology to Manage On-Premise Content Across Multiple Locations**

Key challenges faced by content producers, owners and workflow users alike, include: Movement of thousands of media assets between teams across multiple locations, departments - this leads to issues with file naming, search, not to mention multiple versions. This presentation will provide an overview of "Hybrid Cloud" technology that effectively addresses these challenges.

**Chris Chen**, CTO, Americas, *Prime Focus*



Evans

Archiquette

Aubuchon

Usman

Frasco

Chen

vNAB

**Exploring the Hybrid Cloud**

This session will explore the workings and benefits of a software-based, on-premise/cloud hybrid media processing platform. A hybrid or private cloud solution allows core processing volume to run on a customer premise within a virtualized private cloud infrastructure like OpenStack, Joyent, VMWare etc. In this model the true benefit of cloud media processing, elastic capacity, is maintained. Because the on-premise capacity limits of private cloud are reached by job volume, the hybrid cloud bursts seamlessly to the public cloud environments with no disruption in workflow. This presentation will discuss the hybrid cloud in detail and cover its benefits to customers' workflow.

**Jeff Malkin**, CEO, *Encoding.com*

**Media Workflow Powered by Cloud-based Platform**

To date, most large companies needing to support massive scale media workflows have been relying on custom developed digital media software solutions hosted via large in-house private data centers. Along with the maturation of the public cloud, a new generation of media platform services relying on IaaS will become a more technically viable and operationally sustainable alternative to in-house solutions. We'll investigate the rationale behind the evolution towards cloud based media platforms, and the future of what these might become in the next 2 to 5 years.

**Ben Masek**, CTO, *Sony Media Cloud Services*

**ROI: How Studios Increase Efficiency, Reduce Costs and Improve Quality of Content**

For almost a decade 5th Kind has been working with Studios and Productions to create a holistic secure platform to streamline and organize all the digital file and communication workflows throughout the production process. In this discussion we will explore the challenges and solutions to a range of production workflows and how the unified platform can be used to deliver a high ROI with increased efficiencies and help create better quality products.

**Steve Cronan**, CEO, *5th Kind*

**Cost Advantages of Cloud Video**

Envivio will illustrate the ways in which using the cloud for video processing, storage and delivery will help service providers better manage their costs.

**Arnaud Perrier**, CTO, *Envivio*

**Metadata in the Cloud: Future Proofing Digital Revenue Streams Today**

How effective metadata management in the cloud can help a studio ensure that their IP is being effectively monetized across all channels, all geographies and at all times. This session will discuss how studios are leveraging cloud technologies to most effectively manage their metadata, streamline production and distribution workflow, and maximize digital revenue generation.

**Jason Kassin**, CEO, *FilmTrack*

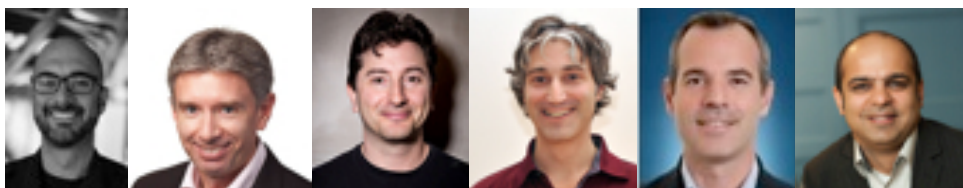
**Shoot the Bird: Linear Broadcast Distribution on AWS**

Can traditional live linear content distribution models be effectively evolved from existing satellite communication networks to pure IP-based cloud-centric transit? In this session we will take a look at requirements that must be met to facilitate wide-scale distribution of content at low latency with high levels of availability, durability, reliability and throughput. We'll look at best practices for high availability and resilience, take a deep dive into topics such as effective erasure correction and deterministic network topologies, factor in advantages around lower cost for compute and bandwidth when utilizing cloud-based infrastructure, and arrive at a reference architecture that can be used to drive B2B content distribution through the cloud at scale.

**Shakeel Usman**, Principal Solutions Architect, *Amazon*

ROI/  
Cost Savings

Second Screen/  
OTT



Cronan

Perrier

Kassin

Malkin

Masek

Usman

vNAB

**Managing the New Content Supply Chain: Efficiently Reach and Monetize Audiences on all Screens**

New content supply chain has become increasingly more complex, as we move into the digital era with simplified, customizable workflow products, unifying legacy linear studio systems with digital content management and delivery across devices. This session will discuss the next evolution of cost-effective, powerful media-management solutions that combines the major components of a broadcast facility into a single workflow to launch and support fully automated and branded dynamic live stream channels, to all platforms, at a lower cost than a traditional broadcast infrastructure.

**Robert Forsyth**, CIO, *Worldnow*

**Cloud Atlas: A Movie or a Distribution Movement?**

How the Cloud is enabling the transition from the Classic Transactional VOD to Electronic Sell Through for MVPDs and OTT players alike. VUBIQUITY discusses launching a cloud-based retail video service by demystifying the puzzle of costs vs timing, understanding the pace of consumer demand and reinventing the conditional access model.

**Brendan Sullivan**, EVP, *Vubiquity*

**Leveraging Cloud to Build your OTT Channel**

Once you get the green light to go OTT and build a direct relationship with your consumer, how do you get it done? What are the best practices and what are the various components in a cloud-based OTT technology stack? How do you choose the right partners for ad network integration, storefront and user experience, lead gen and analytics, as well as production/distribution fundamentals such as encoding, video player and play out? Most importantly, how does all this technology fit together and who are the major players with both expertise and proven solutions? In this informative panel discussion you'll learn the essentials around integrating cloud into an OTT strategy around content, front end, distribution, and monetization opportunities.

**Guy Finley**, Executive Director, *HITS/MESA*

**The Cinema Content Creation Cloud - An introduction to the C4 framework**

C4 is a framework endorsed by the ETC and it's member organizations for orchestrating connections between services, software and people for better digital production pipelines and to enable the future of production in the cloud.

**Joshua Kolden**, CEO, *StudioPyxis*

**OpenStack meets TV Everywhere: Peanut Butter and Chocolate**

OpenStack is in the process of revolutionizing video delivery through virtualization, software defined networking and storage abstraction. OpenStack's ability to rapidly deploy video ecosystems and dynamically scale them based on resource requirements is enabling service providers to offer new services faster, more robustly, and at lower cost. We'll review TV Everywhere cloud deployment requirements and why the marriage of TV Everywhere and OpenStack is so compelling.

**Yuval Fisher**, CTO/MVPD, *Imagine Communications*

**An Introduction to Data Gravity**

You're probably familiar with the concept of data gravity, even if you've never heard the term before. The emerging term and its concept are becoming increasingly popular as file sizes continue to grow at exponential rates, and cloud storage popularity becomes mainstream. This session will introduce the concept of data gravity, the factors at play, and how file transfer will play a role in the future.

**John Tkaczewski**, President & Co-Founder, *FileCatalyst*

**This Is Not Your Parent's Storage: Transitioning to Cloud Object Storage**

While the benefits of cloud technology are undeniable—from improved business agility to economies of scale—concerns still exist around security and performance in multi-tenant environments versus dedicated private deployments. Multi-tenant environments introduce additional parties to the trust model and additional factors to the performance mix. This presentation covers the benefits of transitioning media workflows to the cloud and how to overcome obstacles related to security and performance using real world successes as examples.

**Ian Hamilton**, CTO, *Signiant*

**Open Source  
Tools**

**Storage**



Kolden

Fisher

Tkaczewski

Sullivan

Finley

Hamilton

Forsyth

vNAB

**Big Data/Analytics** **On-Prem and the Cloud: Effective Big Data Solutions and Services for Content Owners**

Content owners have been dealing with the challenges of Big Data and Object Storage long before these terms were coined by skillful marketers. Trends around file-based infrastructures and platforms, both on-prem and in the cloud, are hot discussion topics these days. Select purpose-built solutions and services are finally coming to maturity and are beginning to make technical and economic sense. Rather than just parking content for the long-term, these active environments leverage globally distributed, best-of-breed infrastructures to serve traditional as well as OTT paths to consumers in an elastic fashion. This talk will highlight trends in storage and infrastructures dynamically serving these demanding environments.

**Brian Campanotti**, CTO/FPD, *Oracle/Front Porch Digital*

**Big Data/DIG: Domain-Specific Insight Graphs**

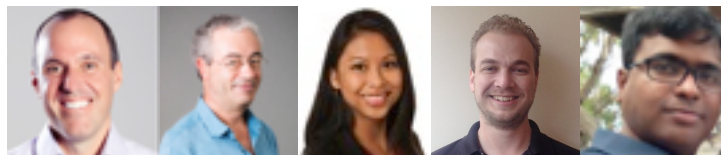
Domain-specific Insight Graph (DIG) is a technology that harvests and harmonizes millions of Web pages to extract key elements of knowledge (e.g., entities and relations). It integrates corporate databases with the extracted data across sources and modalities encoding implicit and purposefully obfuscated relationships. It offers a faceted content search interface and visualizations to support analysis.

**Pedro Szekely**, Project Leader, *USC/ISI*

**Open Source Framework for Deploying Data Science Models and Cloud-Based Applications**

Next generation applications address more sophisticated questions that go beyond 'What happened?' by using Machine Learning/Statistical modeling to answer 'Why?' and 'What will happen next?' Data insights can be easily deployed and rapidly delivered to the decision makers via cloud based applications. This framework focuses on technologies available for the entire data workflow from ingestion and modeling to cloud deployment; Hadoop, MADlib, Python, R, CloudFoundry, etc. This presentation will also include examples of how this framework and innovative Data Science techniques have been applied across diverse business units within Media, including pricing analyses for ad optimization and predicting viewership.

**Noelle Sio**, Principal Data Scientist, *Pivotal*; **Srivastan Ramanujam**, Principal Data Scientist, *Pivotal*; **Jarrod Vawdrey**, Principal Data Scientist, *Pivotal*



Campanotti

Szekely

Sio

Vawdrey

Ramanujan

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