

# WINDOWS AZURE MEDIA SERVICES

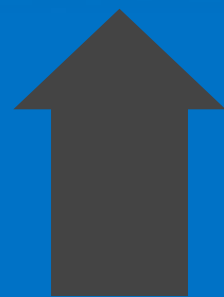
*“Any Media on Any Device, Anywhere...with the power of Cloud”*



# Windows Azure

- Flexible Public Cloud Platform
- **Global Reach** – Available in multiple datacenters around the world
  - Datacenters are managed by Microsoft
  - Expanding current, adding new locations on an aggressive growth path
- **High Availability** – 99.99% Monthly SLA
- **Open** – Build application using any language, tool or framework
- **Elastic** – Scale applications to any size within minutes
- Provides Infrastructure (IaaS) and Platform (PaaS) Services

“How can my content reach more audiences?”



10 Billion  
MOBILE CONNECTED DEVICES  
by 2016

# Introducing Windows Azure Media Services



**Any device,  
Anywhere,  
Anytime**

# What Do We Mean by Media Services?

Your Choice of Components for Building Custom Media Workflows in the Cloud

## Windows Azure Media Services



Ingestion



Encoding



Format  
Conversion



Content  
Protection



On-Demand  
Streaming



Live  
Streaming



Analytics



Advertising

# How are Media Services being used?

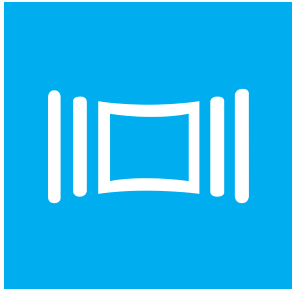
- 1 **“Video to the Masses”** - Encoding, Storage, and Streaming of VOD libraries to diverse consumer devices at scale – Both B2B & B2C solutions
- 2 **“Producer’s Chair / Dailies”** - Transitioning internal production and secure digital media workflows from on-premises to the cloud
- 3 **“The Broadcaster”** – The next generation of live event coverage using cloud technologies for remote site coverage, expanded audience, scale-up/scale down flexibility and lowered cost
- 4 **ASPs/Developers** – Building multi-screen applications for e-publishers, digital marketing firms, brand owners, and ad agencies.
- 5 **“Enterprise Content Management”** – High quality Corporate video management distribution for sharing in the business world, for employees and customers.

# Windows Azure Media Services Value



## Quick and Easy

Media Services enable content companies and solution providers to more quickly and easily build end-to-end media workflows on Windows Azure, a scalable and global cloud platform.



## Open and Flexible

Media Services provide pre-built, ready-to-use, first-and third-party technologies that enable custom solutions to create, manage, and distribute content for all the devices and platforms you care about.



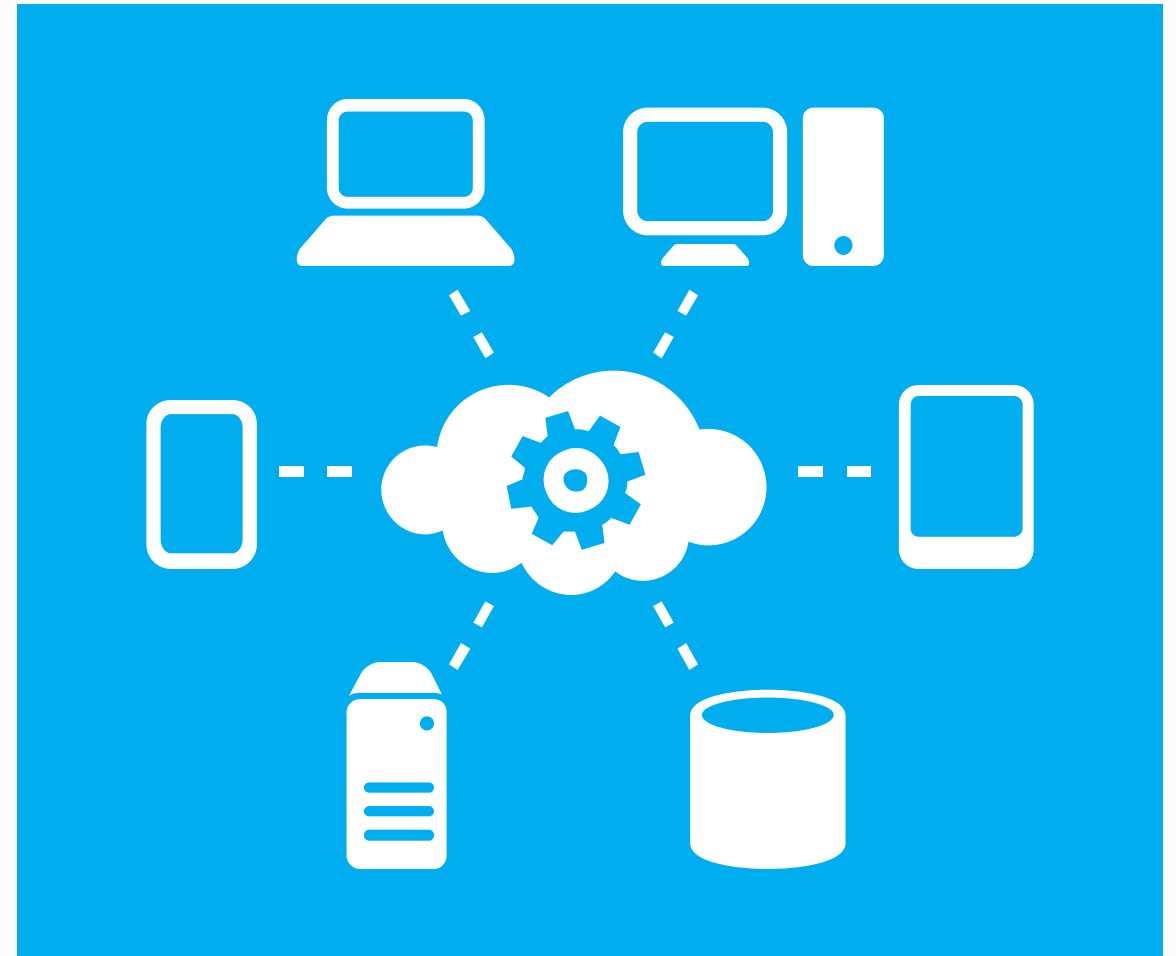
## Powerful and Cost-Effective

Media Services provide a scalable, reliable and cost-effective infrastructure allowing you to focus on your core business and the valuable features that differentiate your products.

# Windows Azure Media Services

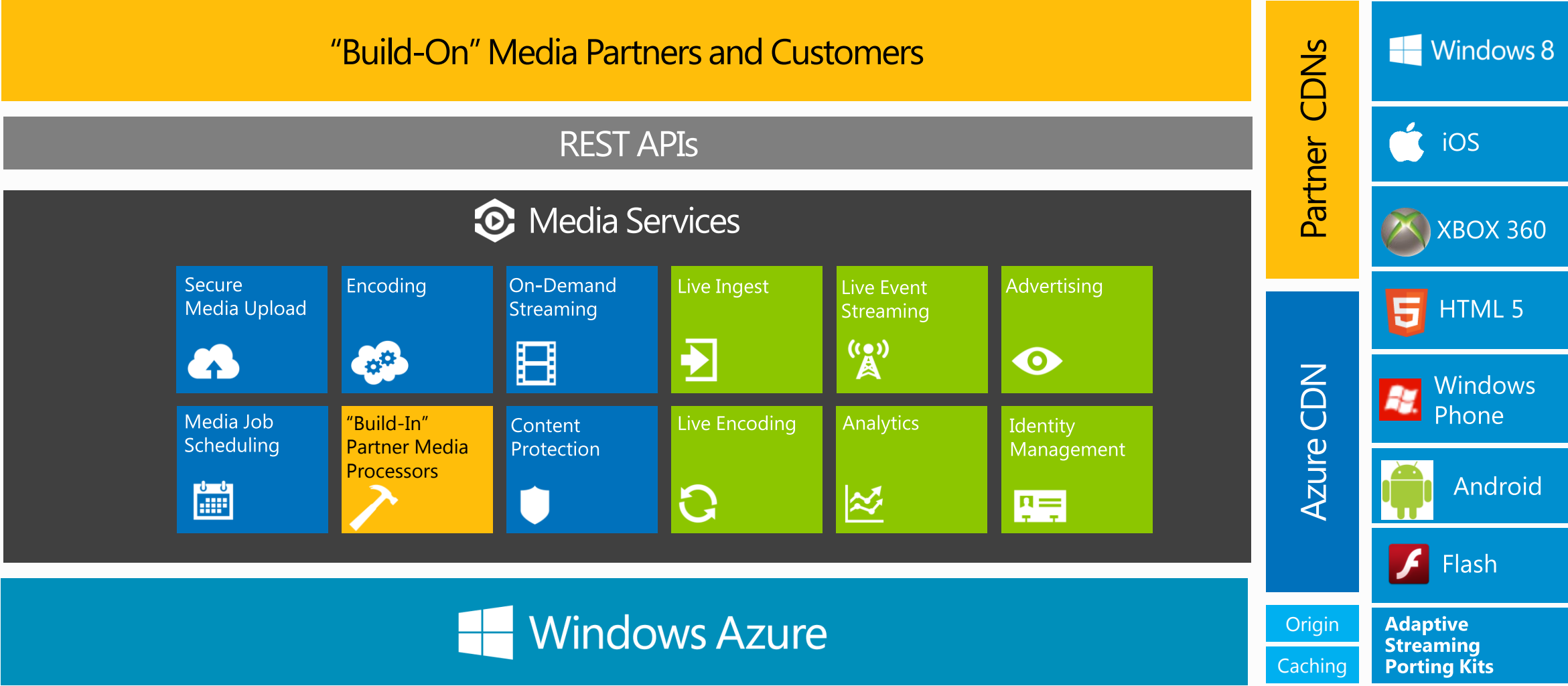
## Extensible multi-tenant Media Services platform on Windows Azure

- The best of **Microsoft** Media Platform Components on Windows Azure
- ISV/ASP **Partners** build their offerings as integrated Media Services components or build end-to-end media solutions on top
- **Customers** build their own solutions on top or use an application from Windows Azure Marketplace





# Media Services Architecture



Released

Coming Soon

Partners

# On-Demand Workflow

 Upload

 Encode

 Package

 Encrypt

 Deliver

# Media Services Today

**On-demand** media workflow support

**Upload** via secure HTTP and fast UDP upload via partners (Aspera, Symbiant)

**Encoding** via Windows Azure Media Encoders – taking multiple formats

**Static Packaging** to create Smooth Streaming and Apple HLS content

**Dynamic Packaging:** Optimize storage by encoding to multi-bitrate MP4 and delivering to all formats *on the fly*

**Encryption** with PlayReady, or use license delivery from 3<sup>rd</sup> Party

**Origin** services for streaming with an SLA for bandwidth and failover

**Caching** via Azure CDN or 3<sup>rd</sup> Party CDN pulling securely from Origins including token-based authentication and geo-blocking features

**Simple REST API** and SDKs for .NET, Java for custom development and integration to back office asset management systems

# Long term Vision and Strategy

Deliver a **robust cloud media services platform** with the power, scalability, reach and flexibility of the Azure public cloud to target any device, anywhere

Leverage **Microsoft and third party partner technologies** to meet expanding customer needs, scenarios, and workflows

**Enhance VOD workflows** with fast affordable encoding, encryption, and in multiple media formats

Launch support for **cloud broadcasting and streaming of Live events and Live channels**

Launch updated **Microsoft Azure CDN** with extensive new features and global reach

Provide **deep analytics on viewership** and tools for **better content monetization**

Custom solutions for the **Enterprise to manage authenticated access corporate video content libraries**

# Coming Soon: Media Services Live

In Early Adopters Program today

Will be used for upcoming 2014 Winter Olympic Games

Public Preview in Spring 2014

Ingest as fMP4, Smooth, or MPTS

Stream live content directly through public cloud

Multi-format output

Global reach – deploy anywhere quickly

Cloud elasticity

- No capital expenses
- Ramp quickly to global scale
- Tear down immediately



# Live Architecture

"Build-On" Media Partners and Customers

REST APIs

 Media Services Live

## Live Channels

Media  
Formats



Encryption



Encoding



Caching



Delivery



Monitoring



Analytics



Ad  
Insertion



Windows Azure

# London 2012 Olympic Games

- Provided digital video services for France TV, RTVE (Spain), CTV (Canada), and Terra (Latin America)
- Video ingestion, hosting, archiving, and transcoding with geo redundancy across four Azure data centers on two continents
- 4,000+ hours of live streaming, 8 quality levels to 3.5Mbps 720p
- 12,000+ transcode jobs
- Delivery to Flash, iOS, Android, Silverlight, Windows Phone, and Xbox as well as four syndication outlets
- Partners: deltatre (CMS and player development), Akamai (distribution and telemetry/analytics), Southworks (tooling)



francetv**sport**

rtve.es



# London 2012 Olympics on Azure Media Services

## Largest online sporting event to date

- 19 days of 16+ hours/day coverage
- 4000+ hours of live streaming encoded and transferred to VOD
- 12,000 VOD Transcoding jobs to convert to other formats (MP4 for Youtube)
- 18.5PB of data delivered globally, through CDN
- Broadcaster feedback very positive, cloud elasticity well suited for this event

## 140 HD multi-bitrate streams

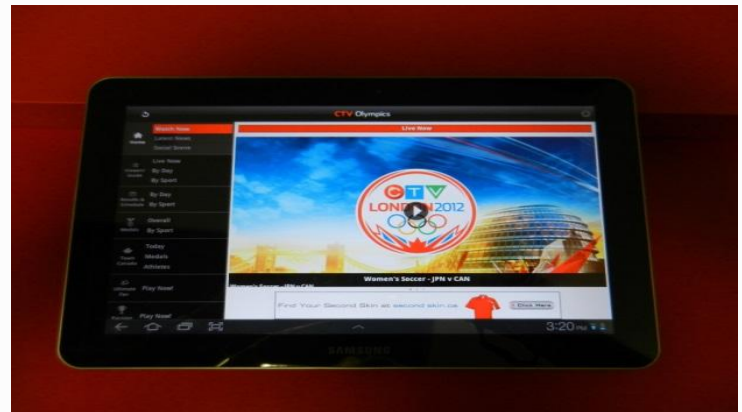
- 4 DC's – DUB, AMS, CHI, SAN – 7 operational time zones
- 30+ simultaneously running: 20+ in Europe, 12 in NA, SA
- 1500 VMs, >5000 cores

## Broad Client Support

- Flash, iOS (iOS SDK), WP7, Android (NextStreaming), Xbox, Silverlight

## Overall Availability of Olympics Broadcast Event @ 99.99%

- Windows Azure Media Services Live had 100% uptime





# Growing Customer Base

International blend of Media and Broadcasters Companies

## Windows Azure Media Services



# NBC Sports Partnership



- NBC Sports will use Windows Azure Media Services to deliver the best viewing experience to sports fans on any device.
- 5000+ hours of programming
- Using Windows Azure Media Services to deliver on-demand and live streaming content to second screen devices
- Working closely with partner, iStreamPlanet, to provide back end services and operational support to create a seamless viewing experience from TV to the second screen
- Along with NBC, a host of other partners, including European Tour, Dolby and Digital Rapids, are working with us to provide Windows Azure Media Services to customers around the globe.

NBC Sports Fall Line Up on Windows Azure		
English Premier League	310 Events	930 hrs
Sunday Night Football	22 events	66 hrs
Pro Football Talk	96 days	2.5 hrs/day
Notre Dame Football	8 games	24 hrs
Motocross	8 events	20 hrs
F1	30 events	57 hrs
MLS	15 games	45 hrs
NHL	50 games	150 hrs
PGA Golf	57 Matches	195.5 hrs
Olympics 2014	TBD	~3500 hrs

Microsoft Confidential – shared under NDA

# Solution/Proof: NBC Sports Group



## Customer Needs

- Standardization of technology stack (origin, encoding) across business units
- Scale to handle 40-60 live events per week
- High quality video streaming that includes support for 1080p, plus alternate bitrates for all types of consumer devices

## Proposed Solution

Windows Azure Media Services provides encoding and origin services, with a handoff to third party CDNs for playback using existing multiplatform players.

## Value Proposition

- Scalability on the fly
- Cutting edge technology that includes the ingest of live feeds with real-time transcoding for live or VOD viewing
- A strong ecosystem of third party extensions for automated workflow and quality control

*NBC Sports Group includes NBC Olympics, NBC Sports Network, Golf Channel, 11 NBC Sports Regional Networks, and NBC Sports Radio. Live events programming includes the NFL, NHL, PGA Tour, USGA, Churchill Downs, Premier League Major League Soccer, Tour de France, French Open, Formula One, IndyCar and more*

NBC Sports Bakelants retains yellow jersey [Recommend](#) 0

**Playlists**

- Latest sports
- Most viewed
- Sports oddities

**Categories**

- NFL
- NBA
- Baseball
- NHL
- Golf
- Horse racing
- College football
- Motors
- More sports
- msnbc news

**Shows**

- The Crossover
- ProFootballTalk
- Dan Patrick Show
- Costas Tonight

Search...

**Latest sports**



Lochte wins men's 200m backstroke



Is Baltimore built for October?



**now**  
Bakelants retains yellow jersey



**next**  
Rolland retains polka dot jersey





YELLOW JERSEY STANDINGS		
AFTER STAGE 3		
1	JAN BAKELANTS RADIOSHACK LEOPARD	12:21:27
2	JULIEN SIMON SOJASUN	+0:01
3	SIMON GERRANS ORICA GREENEDGE	+0:01
4	MICHAL KWIATKOWSKI OMEGA PHARMA-QUICK STEP	+0:01
5	EDVALD BOASSON HAGEN SKY PROCYCLING	+0:01

00:02 / 01:28 full screen CC transcript clip & share

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# Solution/Proof: European Tour

## Customer Needs

- Had broadcast rights for golf footage, but needed an infrastructure to deliver streams to variety of consumer devices
- Find a way to deliver both live events plus extensive highlights and event recaps

## Proposed Solution

Combine Azure infrastructure with deltratre encoding and players for both live event coverage as well as VOD highlight clips

## Value Proposition

- Ability to edit in the cloud to drastically simplify operations and reduce overall cost of remote event coverage
- Quickly spin up and spin down as events move around the cloud
- Scale to handle 14 SD & HD streams of content

*The European Tour, which recently celebrated its 40 anniversary, serves a similar function to the PGA tour in the United States broadcasting European golf events around the world*



Rory McIlroy - Irish Open Preview Interview



[Like](#)

[Tweet](#)

**ROLEX**

GMT  
14:33

Your Time  
10:33



### VIDEO EDITOR'S CHOICE



Rory McIlroy (+2) The Irish Open - Day 1



Morning Update Irish Open - Day 1



Day 1 Preview - Irish Open

# Solution/Proof: The CW Television Network



## Customer Needs

- Expanded reach and distribution of their television broadcast content to their specific target demographic – Young teens and 20-30 year olds
- Low cost solution with minimal effort

## Proposed Solution

Use WAMS to encode and stream CW content to Xbox 360 platform

## Value Proposition

- Signed up and build their solution all on their own!
- Portal UI provided enough functionality to create workflow
- Support for encoding and smooth streaming that can be played by Xbox 360 game consoles, now considering use for other devices as well

*The CW launched in 2006 and is a joint venture between CBS Corporation and Time Warner/Warner Bros. Entertainment. They broadcast 20 hours/week over 6 days and includes shows such as "America's Next Top Model", "Supernatural", "Arrow", "Gossip Girl", and "The Vampire Diaries"*

# Arrow

overview episodes previews extras

ionaire playboy  
d presumed  
ing discovered  
e Pacific.  
arling City, his  
n-beloved sister  
welcome him  
has been  
e island. While  
the man he's

**FULL**  
**Vertigo**  
Arrow

**FULL**  
**Dodger**  
Arrow

**FULL**  
**The Huntress Returns**  
Arrow

**PREVIEW**  
**Home Invasion**  
Arrow

**FULL**  
**Salvation**  
Arrow

**FULL**  
**Unfinished Business**  
Arrow

A Select B Back X The CW Home Y Search

THE CW TV NOW

wbdm002

search watch now shows settings

Newest Videos

Recent Episodes

**Arrow**  
WEDNESDAYS 8.7c

**FULL**  
**The Carrie Diaries**

**FULL**  
**Hart of Dixie**

**Arrow**  
WEDNESDAYS 8.7c

**Supernatural**  
WEDNESDAYS 9.8c

A Select B Exit Y Search



# Solution/Proof: Blinkbox



## Customer Needs

- Reliable, Scalable OTT delivery platform for large video service
- The "Netflix of the UK"
- Ability to stream large content library to millions of subscriber devices, including PC, Xbox 360, PS3, and Samsung SmartTVs.

## Proposed Solution

- Use WAMS to upload, encode and stream movie content to multiple device platforms
- Include an ecosystem of partners including Digital Rapids Kayak Encoder

## Why We Won

- Dedicated resources and customized solution
- Specific features added to product per customer requirements
- SDK / API allows for their own development efforts
- Aggressive pricing vs. AWS offering

*Blinkbox is the UK's leading on-demand movie streaming service with 2.8 million active users per month. They have content deals with studios including Warner Bros, Universal Studios, Paramount Pictures, Sony Pictures Entertainment, and 20<sup>th</sup> Century Fox.*

Latest movies

[ALL \(5056\)](#) | [BUY](#) | [RENT](#) | [OFFERS](#)



# This Is The End

CERT 15 • 1 HR 46 MINS



EARLY DIGITAL RELEASE

# Monsters University

CERT U • 1 HR 44 MINS



EARLY DIGITAL RELEASE

# Nativity 2: Danger in the Manger!

CERT U • 1 HR 45 MINS



# Admission

CERT 12 • 1 HR 47 MINS



# Now You See Me

CERT 12 • 1 HR 40 MINS



# Solution/Proof: EaselTV



## Customer Needs

- Technology platform to host and stream customer content to SmartTV devices and other mobile devices

## Proposed Solution

Windows Azure Media Services to upload, store, encode, and stream their client's video libraries.

## Value Proposition

- Easy to Use – “It Just Works”
- Low cost model enables ASPs to flourish

Easel TV is a specialist connected TV software company, working across all major connected TV platforms from internet TV environments such as Samsung & LG to games consoles such as Xbox and mobile and tablet devices through iOS. Customers include Virgin Media, TiVo, All3Media, and HTC.



# Solution/Proof: MEKmedia



## Customer Needs

- Technology platform to host and stream customer content to SmartTV devices
- Ability to build rich video-based applications for their customers' marketing campaigns

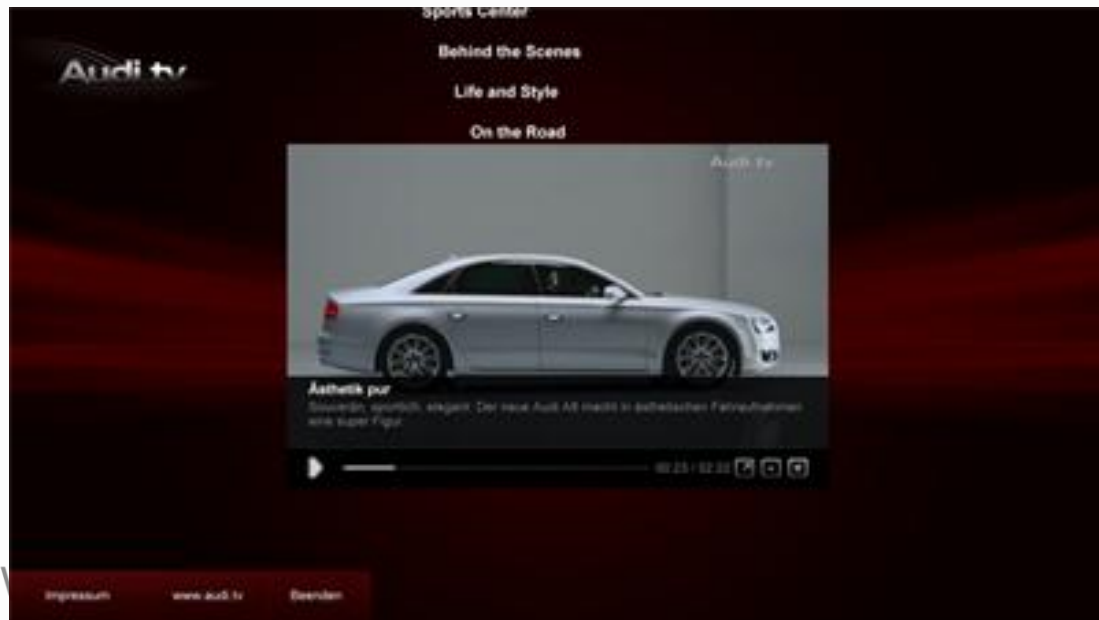
## Proposed Solution

Windows Azure Media Services to upload, store, encode, and stream their client's video libraries to Samsung televisions.

## Value Proposition

- Easy to Use – "It Just Works"
- Low cost model enables ASPs to flourish
- Complete support for Adaptive Smooth Streaming on SmartTVs

*MEKmedia is a leading technology company for building premium SmartTV solutions for companies looking to reach an expanded audience on Samsung and other SmartTVs. Their customer base includes global brands such as Audi, Mercedes Benz, Porsche, and others.*



# Solution/Proof: Avex Communications



## Customer Needs

- Launch new "BeeTV" VOD platform in Japan that offers a very large content library from Day One.
- Quality of Streaming and digital rights management is key

## Proposed Solution

- Low-cost Cloud-based Storage starting with 100TB that scales on demand.
- Secured content protected with DRM

## Value Proposition

- Pricing and immediate availability of big data store
- Ability to stream to all available smartphones
- Allows Avex to offer service outside of Japan when they are ready

*Avex Communications is part of Avex Group Holdings Inc. which owns a variety of entertainment-related companies in Japan including Japan's biggest seller of recorded music. The BeeTV service offers a very large video library of over 7,000 titles that subscribers can browse and watch on their smartphones for 525 ¥ /month. Over 350K subscribers use the service daily.*

本日更新

お笑い・バラエティ

ガールズ

キッズ

ドラマ



絵本がもっと楽しくなる!

### うごくえほん チルピー

子供たちに大人気の「うごくえほんシリーズ」がBeeTVに登場!...

キッズ NEW



### 週刊オトコ自身

男子なら誰もが気になる疑問、くだらなすぎる妄想をやってみる番組!...

お笑い・バラエティ 土田晃之/渡部建(アンジャッシュ)...



### トゥルルさまあへず

【BeeTV史上No.1お笑い番組】さまあへずの快楽探求バラエテ...

お笑い・バラエティ さまあへず、あびる優



### 週刊オトコ自身

男子なら誰もが気になる疑問、くだらなすぎる妄想をやってみる番組!...

お笑い・バラエティ 土田晃之/渡部建(アンジャッシュ)...



すべり芸人☆夢の競演 THE すべり場



### オンナの噂研究所

今まで誰も調べなかった、気になる「オンナの噂」を徹底検証する番組...

ガールズ 西川史子、MEGUMI、重盛さと...



### 声感★ラブメッセージ

留守番電話に残された12のラブストーリー (全12話)

ガールズ 声の出演:前野智昭、立花慎之介、...



おみかせアニメえほん



絵本がもっと楽しくなる!

### うごくえほん チルピー

子供たちに大人気の「うごくえほんシリーズ」がBeeTVに登場!...

キッズ NEW



### しましまとらのしまじろう

大人気教育アニメ★しまじろうと一緒に楽しもう!

キッズ



### よみかかせアニメえほん

心温まる絵本の世界をお子様と一緒に



### 最上のプロポーズ

それは、恋する気持ち呼び覚ます魔法のコトバ(全12話)

ドラマ イッキ見 向井理、斎藤工、金子ノブアキ、小...



### 危険なカンケイ

嘘と秘密が引き寄せる。深田恭子主演ラブ×サスペンスドラマ!!(全...

ドラマ イッキ見 深田恭子、福士誠治、香椎由宇、吉...



午前3時の無法地带

NEWS



# Solution/Proof: Chukyo TV



## Customer Needs

- Major Japanese broadcaster wants to quickly launch a new pay TV streaming service to mobile phones without incurring significant costs of on-prem capital equipment

## Proposed Solution

Windows Azure Media Services encodes and converts media content files to multiple formats

## Why We Won

- Quick to deploy
- Start small with ability to scale
- Highly customized solution through .NET framework made integrate much easier than competitors
- Ecosystem of partners that include DRM providers such as PlayReady

*Chukyo TV is delivering digital TV content to 450K mobile smartphone subscribers of NTT DoCoMo.*

# Solution/Proof: Xpreshon



## Customer Needs

- Technology platform to host and stream premium sports VOD and Live content to Xbox and Win 8 platforms
- Launch a subscription video business and quickly grow customer base

## Proposed Solution

Windows Azure Media Services to upload, store, encode, and stream content in smooth format with Play Ready content protection

## Value Proposition

- Worked with Object Consulting to customize application as well as build a CMS to control workflow
- Low cost of entry with ability to scale on demand
- Able to launch app in Windows Store and Xbox App Marketplace

*Xpreshon is located in Australia markets itself as the "Ultimate Action Sports Experience" incorporating news articles and video content for consumers with a passion for surfing, skateboarding, snowboarding, and motocross. While some content is offered free, premium content costs A\$7 to rent or A\$10 per month. A Windows Phone 8 app is in the works.*

## Home



The Deathwish Video



1 day ago

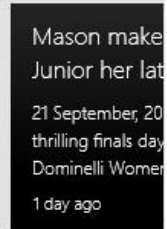


@pedrobarr...

We are Skateboarders



Watch movies



# Solution/Proof: Gem Online



## Customer Needs

- Leaders in Farsi, Arabic, and other Middle East language video content, looking for broad distribution to over 500K subscribers across five continents
- Subscription VOD business model streaming multi-bitrate content to a host of hybrid consumer devices

## Proposed Solution

Windows Azure Media Services provides dynamic packaging of content handing off to partner CDNs.

## Value Proposition

- Competitive price offering
- Support for all popular streaming formats and deployed consumer devices
- Global distribution of streaming services and partnerships with CDNs

*Gem Group includes 8 broadcast channels delivered via satellite and IPTV networks. They have offices in Dubai, London, and KL Malaysia, but now have subscribers across North America, Africa, and Western Europe.*



BACK TO VOD

## TV Series



**Harim Sultan**  
350 EPS x 60 Min



**Kuzey Guney**  
170 EPS x 60 Min



**Shamime Eshgh**  
314 EPS x 60 Min



**Elcapo (Season 1)**  
90 EPS x 60 Min



**Elcapo (Season 2)**  
76 EPS x 60 Min



**Az Bose Ta Eshgh**  
150 EPS x 60 Min



**Omre Gole Laleh**  
182 EPS x 60 Min




**Ezel**  
148 EPS x 60 Min



**Madreseye Shabane Rozi**  
123 EPS x 60 Min



**Rohe Elena**  
117 EPS x 60 Min



**Eshghe Mamnoo**  
165 EPS x 60 Min



**Eshgh va Jaza**  
127 EPS x 60 Min



**Roozegare Talkh**  
103 EPS x 60 Min




**Moon**  
36 EPS x 60 Min



**End Game**  
13 EPS x 60 Min



**Leverage**  
28 EPS x 60 Min



**Karadayi**  
198 EPS x 60 Min



**Merhamet**  
75 EPS X 60 Min



**Borgia**  
24 EPS x 60 Min



**Dila Hanim**  
180 EPS x 60 Min

# How Can I Use Media Services?

Address all the Scenarios and Devices/Platforms you care about



# Key Takeaways

Media Services are **easy, flexible, and powerful**

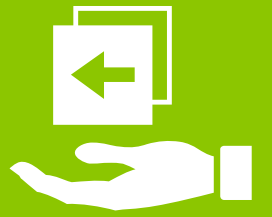
Customers can reach **any device** using any protocols

Partner Ecosystem, easily **build-in or build-on**

Content protection and authentication **across all clients**

Pay for what you use, **easy to understand** billing

Any media, on any device, delivered **from the cloud**





# Try out Windows Azure Media Services

[www.windowsazure.com/media](http://www.windowsazure.com/media)

Windows Azure and Media Services accounts are Free for 90 days

Email questions to : [azuremedia@Microsoft.com](mailto:azuremedia@Microsoft.com) , or ask questions on our public forum.

<http://social.msdn.microsoft.com/Forums/en-US/MediaServices>



# Q&A

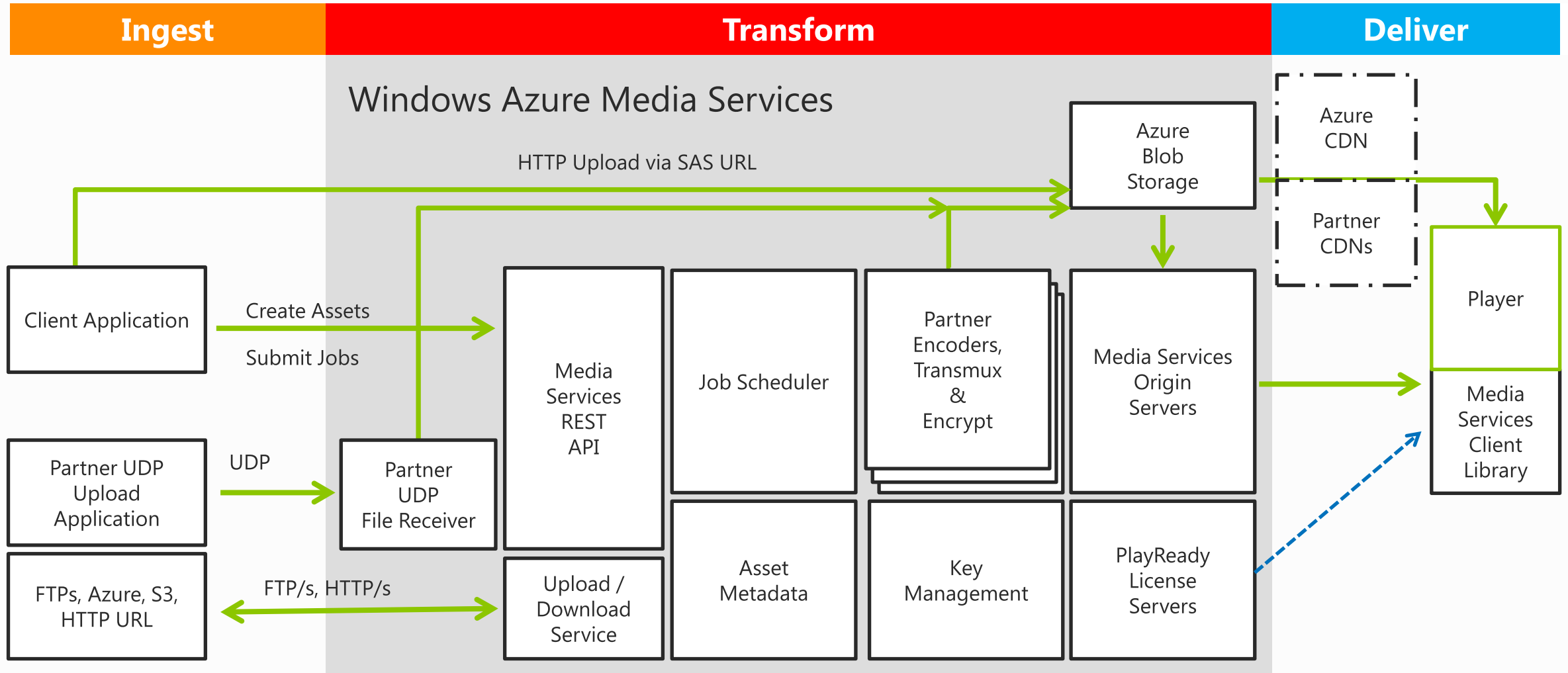


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# Technical Appendix

# Example Workflow - VoD



# Upload



## Ingest Assets into the Media Services

Pre-encrypt files prior to uploading (AES 256)

Secure HTTPS upload

Network level peering for fast HTTP into Azure

Fast upload using UDP with Aspera

Bulk ingest support

Platform security compliance in 2014: SOC2, MPAA, CDSA

# Encode



## Windows Azure Media Encoder

Supports encoding to H.264 or VC-1 video

Encodes audio to AAC-LC, HE-AAC, Dolby DD+, WMA

## Digital Rapids Kayak Encoder

Adds additional video and audio formats

# Static Packaging



## Windows Azure Media Packager

Package MP4 content into Smooth, HLS (v3), HDS

# Dynamic Packaging



## Unique Feature of Origin server

Store a single set of standard MP4 files and deliver to multi-formats (HLS, Smooth, DASH)

Reduces storage costs significantly

Dynamic Encryption support coming soon

Assets that are storage encrypted can be dynamically packaged and encrypted in one step to:

- PlayReady for Smooth, DASH, HLS
- AES-128 "clear-key" envelope encryption for Smooth, DASH, HLS



# Encrypt

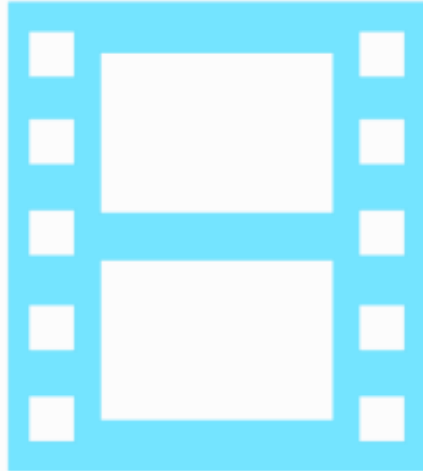


## Windows Azure Media Encryptor

Protect Smooth Streaming, Apple HLS, MPEG DASH

Encrypts with PlayReady, Common Encryption, AES 128,  
new formats coming soon

# Deliver



## Windows Azure Media Origin

Managed streaming service... it just works!

Guaranteed bandwidth

Auto recovery, redundancy and failover

High Availability

MSFT Azure and 3<sup>rd</sup> party CDN support

IP Whitelisting, Akamai 'G20' authentication

# Reach Story – media players

WEB

Silverlight



[Smooth Streaming Player Framework](#)  
[Smooth Streaming Client SDK](#)

Flash

[OSMF plugin for smooth streaming](#)  
MPEG-DASH support (Not Released)

HTML5

[HTML5 Player Framework](#)  
[DASH.JS](#) with IE11

APPS

Windows 8



[Smooth Streaming Player Framework](#)  
[Smooth Streaming Client SDK](#)  
With MPEG-DASH support

XBox



[Smooth Streaming Player Framework](#)  
[Smooth Streaming Client SDK](#)

TV/STBs



[Smooth Streaming Porting Kit](#)

MOBILE

WinPhone



[Player Framework for WinPhone 8](#)  
[Smooth Streaming Client SDK](#)

Android



Partner SDKs and Frameworks  
[OSMF plugin for smooth streaming](#)

iOS



[Player Framework for smooth streaming with PlayReady](#)  
[Player Framework for HLS](#)

More information please see [here](#)