Solution White Paper: Video Enablement

Enhance your Video Solutions with the Software-Defined Mobile Edge

The communications and digital markets are under massive, synchronized transformations. Edge Internet is a distributed Internet architecture combined with a programmable paradigm where computing and connectivity are provided in close proximity to the point of consumption to meet the demands of current and future applications and services.

The synchronized transformations of the communications and digital markets are impacting every trillion-dollar industry in our economy. The next wave of mobile connectivity (5G and next gen wireless networks) and Edge computing is here bringing new applications and services the current infrastructure cannot handle.

"We are at the cusp of a seismic paradigm shift wherein computing and communications will move from a core network with a centralized cloud architecture to the Edge. The reasons are manifold but the basic premise is that in order to serve the data computing and communications demand of objects, sensors, people, resources, compute, and intelligence have to move to the Edge to not only operate in the most cost-effective way but to enable new use cases that can't be supported by traditional cloud architectures." – Chetan Sharma, Industry Analyst.

The Edge Internet is a distributed overlay Internet architecture – public and private – with programmable Edge API's, creating new computing and communications paradigm

With the rise of 5G and computing environments, AlefEdge is key to unleashing the convergence of networking and computing. AlefEdge's Software-Defined Mobile Edge platform enables a new set of mobility, cloud and applications APIs that unleash Enterprises and application developers to leverage the full power of the Edge. By utilizing our unique APIs, Enterprises can deploy, orchestrate and manage Edge applications and services.

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Video-on-Demand at the Edge (Downlink)

Introduction

Video-on-Demand Streaming has become extremely important in Enterprises. While it is one of the simpler types of video solutions in the market, the performance and usability of Video-on-Demand Streaming is crucial to adoption of the solution both internally and externally.

How Video-on-Demand Streaming is Used Today

Enterprises have been leveraging Video on Demand Streaming for several use cases ranging from internal training videos to customer walk throughs and more. Video-on-Demand Streaming allows for an easier way to communicate with increased productivity in the Enterprise. Some examples of specific use cases are:

- Leadership welcome videos
- HR and corporate policy videos
- Workplace orientation videos
- Case study videos
- Videos for partners and suppliers
- Expert interview videos
- Product / service launch videos
- Field Services videos

Benefits of the Edge

Alef's Software-Defined Mobile Edge (SD-ME) improves the performance, quality and latency in delivery of Video-on-Demand Streaming for Enterprises. We have tested a variety of Video-on-Demand Streaming applications for the Edge and measured the following results:

- 2.1x better HD resolution at 1080p and 1.7x better startup time (80 percentile) for Media & Entertainment applications;
- 12.6x better HD resolution at 1080p and 1.8x better startup time (80 percentile) for advertising applications;
- 2x better in PDF and 360 Degree HD Images throughput and 1.7 better download response times (80 percentile) for learning applications; and
- 1.4x better HD resolution at 1080p, and 1.5x better startup time (80 percentile) for virtual reality applications.

Use Cases

With Alef's SD-ME, and Alef's Video Enablement Product that includes connectors, API and Alef's fast delivery from the Edge, Enterprises can create numerous Video-on-Demand Streaming applications such as those described above. With enhanced performance of both the video and the application, Enterprises and employees can rely on Video-on-Demand Streaming to improve their productivity and increase their knowledge in the

workplace. The Enterprise can innovate and create intelligent learning platforms, training platforms, company and CEO updates, and more, thereby intertwining video into their corporate culture.

How Enterprises Can Deploy

Video-on-Demand Streaming at the Edge can be easily deployed for an Enterprise by using Alef's Video Enablement Product and features. Registering, deploying and managing the service is done through our easy-to-use Alef EdgeNet Portal. You can learn more about Video-on-Demand Streaming at the Edge and how to deploy the solution today by learning more in our Resources section.

For more information on any of the documentation, please contact us, use the search bar or contact your sales representative.

Stream Processing at the Edge (Uplink)

Introduction

Stream Processing is a perfect use case for the Edge. . Processing an uplink video stream from surveillance cameras, IoT cameras can be extremely compute and bandwidth intensive. Uplink stream processing using Alef's SD-ME platform at the Edge can instantaneously create new intelligence for Enterprises by processing their video streams close to their point of origin, i.e. at the Edge and sending meta data to the cloud for analytics and further processing.

How Streaming Processing is Used Today

Enterprises today have been leveraging Stream Processing for several uses ranging from security to manufacturing. Stream Processing from the Edge allows for video-based insights in the Enterprise that can be used to increase productivity and accuracy in detection. Some examples of specific use cases are:

- Smart Surveillance/Security
- Manufacturing and Preventive Maintenance
- Oil/Gas Wells monitoring

Benefits of the Edge

By processing video streams at the Edge of the Enterprise network in real-time, intelligent and actionable insights can be generated with great speed and accuracy close to their origin. Alef's Software-Defined Mobile Edge (SD-ME) enables uplink video streams to be processed on a powerful Edge compute and processing platform with AI algorithms converting these streams into meta data, thus driving actionable insights from the metadata that gets created. While the video stream is processed by Alef's SD-ME and AI platform at the Edge and stored for a certain period of time for audit purposes, the metadata is sent to the cloud for further analytics and insight. Thus, Enterprises significantly save on their bandwidth costs. Alef's SD-ME enables uplink streams to be processed in an efficient manner, while maintaining data compliance and security regulations.

Use Cases

Alef's SD-ME can create actionable real-time insights for Enterprise uplink video. By processing the stream at the Edge of the Enterprise network, the Enterprise can glean immediate insights into their manufacturing and security streams and take corrective action thus saving them considerable time and money. The uplink video is processed at the Edge, allowing for the important and mission critical insight to be sent back to the Enterprise, and some of the metadata is sent to the Cloud for further processing. By doing so, the Enterprise takes advantage of an intelligent Edge processing architecture for their uplink video that is secure, reliable and with state-of-the-art AI algorithms, creates actionable insights.

How Enterprises Can Deploy

Stream Processing at the Edge can be easily deployed for an Enterprise. Registering, deploying and managing can be done through our Alef's EdgeNet Portal. You can learn more about Stream Processing at the Edge and how to deploy the solution today by learning more in our Resources section.

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Live Streaming at the Edge (Broadcast & Multi-Cast Downlink)

Introduction

Live Streaming is one of the most complex and impactful video types for Enterprises. The performance and security of the Live Stream is extremely important. Insecure streams create risks to an Enterprise and live streams must have a certain level of performance to maintain video quality, fidelity and acceptable resolution. While the type of Live Streaming may vary from broadcast to multi-cast, the solution must be created with security and performance in mind.

How Live Streaming is Used Today

Enterprises today have been leveraging Live Streaming for several uses ranging from knowledge sharing to external/internal communications. Live Streaming has allowed for an easier way of communication and resulted in increased productivity in the Enterprise. Some examples of specific use cases are:

- Crisis communications
- Company Meetings/CEO Broadcasts
- Webinars
- Presentations
- Conferences

Benefits of the Edge

Alef's Software-Defined Mobile Edge (SD-ME) dramatically improves Live Streaming video solutions by increasing the performance while reducing network variance. By incorporating the Edge into Live Streaming, the available throughput and bandwidth is better managed to create a more reliable stream. The SD-ME platform not only improves the performance of the Live Video Stream by being deployed at the Edge of the network, but also enhances Live Streaming through other application features such as advanced analytics, adaptive bit rate adjustments on user screens, all while being part of an open ecosystem.

Use Cases

Live Streaming can dynamically change internal and external communications for an Enterprise. Whether it be to employees or external partners, customers, media journalists or analysts, Live Streaming is a key to quality communications when performing well. By leveraging Alef's Software-Defined Mobile Edge (SD-ME), Enterprises can ensure their Live Streaming video maintains a certain level of performance with strong KPIs such as start time, reduced jitter and maximum uptime. They can enhance their solutions by adding other value-added services on top such as multi-cast.

How Enterprises Can Deploy

Live Streaming at the Edge is be easily deployed for an Enterprise. Registering, deploying and managing can be done through Alef's EdgeNet Portal. You can learn more about Live

Streaming at the Edge and how to deploy the solution today by learning more in our Resources section.

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Collaborative Video at the Edge (Balanced between Uplink, Downlink and Live)

Introduction

Collaborative Video has become essential to the success of Enterprises. When employees have a fluid and frictionless collaboration methodology, productivity rates are greatly improved. When video is part of the collaboration tool, employees can be extremely productive, across multiple locations and with a remote workforce. Collaborative Video enables employees to turn conversations into face-to-face meetings making for substantial productivity gains within the Enterprise.

How Collaborative Video is Used Today

Enterprises today have been leveraging Collaborative Video for uses ranging from sales and marketing videos to knowledge sharing and education videos. Collaborative Video has allowed for an easier way of being productive and working as a team in the Enterprise. Some examples of specific use cases are:

- Video resumes and candidate intros
- Expert interviews
- Seminars and workshops
- Video calling, conferencing and collaboration

Benefits of the Edge

Alef's Software-Defined Mobile Edge (SD-ME) changes the art of the possible for Collaborative Video. By leveraging intelligent tools and enhanced performance, employees increase their productivity. The Edge not only dramatically increases the performance of videos for employees, but gives them intelligent tools to be successful. Tools in Artificial Intelligence, Machine Learning, Multi-Cast, Augmented and Virtual Reality, etc. can all enable the work force to become more productive, by allowing Enterprises to generate high quality collaborative videos, and having them delivered with low-latency and high performance.

Use Cases

Collaborative Video delivered over Alef's SD-ME brings powerful benefits to Enterprises while creating new and interesting use cases. When intelligent tools are made available to employees, they become more productive using video. Employees are able to create AI Engines and Insights within their video and create remote working sessions with Augmented Reality. These tools give employees the ability to work together on projects – whether they be on document creation, maintenance, working sessions, etc. Collaborative Video has the opportunity to become a dynamic video type potentially changing the arc of video in Enterprises.

How Enterprises Can Deploy

Collaborative Video at the Edge can be easily deployed for your Enterprise. Registering, deploying and managing your collaborative videos can be done through Alef's Edge Net portal. EdgeNet Portal. You can learn more about Collaborative Video at the Edge and how to deploy the solution today by learning more in our Resources section.

For more information on any of the documentation, please contact us, use the search bar or contact your sales representative.

Video Notifications at the Edge (Downlink)

Introduction

Video Notifications are extremely important to Enterprises to ensure their employees and customers receive important notifications at the right time, the right place, with a reliable and intelligent solution behind it. The ability to send out important Notifications with video increases message retention, call to action and also increases the click-through-rate from the notification. Enterprises provide their employees the most up-to-date information they need in order to be safe, productive and happy in the workplace.

How Video Notifications are Used Today

Enterprises leverage Video Notifications for several uses ranging from internal communications to sales and marketing videos and training videos. Video Notifications have allowed Enterprises to communicate with their customers and employees safely productively and with essential timeliness. Some examples of specific use cases are:

- Derivative video content from marketing campaigns
- Internal employee updates
- Corporate updates
- External customer/partner updates

Benefits of the Edge

Using open APIs and Edge solutions, Video Notifications can be greatly enhanced for use by Enterprises. We have seen in multiple campaigns how dramatically the Edge impacts video delivery, performance, click-through-rate, calls to action and message retention. Video Notifications at the Edge are delivered nowadays within an application, and the Video that is embedded can be matched with intelligent features such as location finders and chatbots. These tools are only available when Alef's Software-Defined Mobile Edge (SD-ME) is augmented with intelligent Video Notifications and delivered by integrating Alef's In-app SDK that is available for both iOS and Android.

Use Cases

With Alef's SD-ME, Video Notifications become dynamic announcements within the Enterprise. Enterprises control who gets what notification, when, what message and for how long they can see the message. With the video notification, Enterprises can add in intelligent features around chatbots, locators, messaging groups, etc. Enterprises can create a dynamic structure around notifications to alert their employees to important news, corporate updates and other announcements.

How Enterprises Can Deploy

Video Notifications at the Edge can be easily deployed for your Enterprise. Registering, deploying and managing can be done through Alef's EdgeNet Portal. You can learn more

about Video Notifications at the Edge and how to deploy the solution today by learning more in our Resources section.

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Interactive Video Messaging at the Edge (Uplink, Downlink, Sharing)

Introduction

Interactive Video Messaging, similar to Collaborative Video, is key to successful collaboration. Whether posting videos on company updates, video walkthroughs of solutions or message sharing between employees, the ability to stream uplink and downlink while being able to easily share the video is key to successful internal collaboration. Interactive Video Messaging can increase productivity, reduce employee downtime and spark ingenuity within an Enterprise's culture.

How Interactive Video Messaging is Used Today

Enterprises today have been leveraging Interactive Video Messaging for several uses ranging from employee training to customer support. Interactive Video Messaging has allowed for a fluid collaborative and interactive experience for internal and external communications. Some examples of specific use cases are:

- Interactive training
- Tutorials
- Product demos
- Employee messaging
- Video calling, conferencing and collaboration

Benefits of the Edge

By providing employees with a simple tool to share and interact with each other through video, Enterprises can greatly increase the productivity levels within their organizations. Alef's Software-Defined Mobile Edge (SD-ME) offers Enterprises tools to enable secure sharing, collaborate in their working environments, through easy-to-use content onboarding and notification systems. These tools increase the usage of video and the ingenuity within Enterprises.

Use Cases

Alef's SD-ME helps create Interactive Video Messaging for Enterprise employees. Employees leverage a frictionless Interactive Video Messaging solution that allows them to create their own walk through videos, compliance videos and sharable videos on products, solutions and other areas of interest. By creating an easy-to-use solution for employees, Enterprises enable their workforce to work collaboratively and interact with each other extensively, through video.

How Enterprises Can Deploy

Interactive Video Messaging at the Edge can be easily deployed for your Enterprise. Registering, deploying and managing can be done through Alef's EdgeNet Portal. You can learn more about Interactive Video Messaging at the Edge and how to deploy the solution today by learning more in our Resources section.

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