Cisco StadiumVision Mobile

Q. What is Cisco announcing today?

A. Cisco is announcing the Cisco® StadiumVision™ Mobile (SVM) solution, a first of its kind. By using the multicast capabilities of the Cisco Connected Stadium Wi-Fi network, SVM allows the delivery of live, low-delay video to be scaled to tens of thousands of mobile devices in a crowded sports and entertainment venue.

Q. How does SVM help me take advantage of the mobility trend to create new experiences and revenue?

A. We are in the middle of a mobility revolution in which the number of smartphones and tablets is proliferating. A large proportion of the people who attend an event in a sports and entertainment venue carry a mobile device. This provides a new exciting opportunity for venues, teams, and artists to deliver live video and other real-time content directly to their fans. But while the business opportunity is clear, the obstacle to exploiting this so far has been the challenge of delivering live video to a large population in a crowded venue. SVM solves this scalability problem by combining multicast over Wi-Fi with forward error correction to reliably deliver live video and real-time data to tens of thousands of mobile devices. Although the technology uses open standards, Cisco is the only company to implement and deliver this capability.

Q. What benefits does SVM offer sports and entertainment customers?

A. The Cisco StadiumVision Mobile solution enables new compelling in-venue fan experiences not previously possible and at the same time opens up new revenue streams for the team, artist, or venue.

Q. What are some examples of new fan experiences made possible by SVM?

A. Scalable distribution of live video and real-time data allow the following experiences to be made available to fans in the bowl using an application on their smartphone or tablet:

- View alternate camera angles
- On-demand replay of the most recent 30 seconds of video
- View out-of-town games that are being played at the same time
- Real-time game statistics and fantasy sports updates
- Choice of live game commentary (for example, stadium announcer, home radio broadcast, away team radio broadcast, language, and so on)
- Quizzes and trivia contests that for fairness reasons depend on all participants receiving the question or prompt at the same time
- Multiplayer games that depend on the participants' screens being updated simultaneously

Q. What are some examples of new revenue streams made possible by SVM?

A. Like TV and the Internet, if you can compel people to watch your channel or visit your website, then you have won their attention and can use that as an opportunity to advertise, promote, sell, or build relationships. SVM is an opportunity to get your content onto the screens of every mobile device in the venue and then capitalize on the eyes-on-screen in one or more of the following ways:

- Insert video commercials into the live event feed, looping replay channel, and so on

- Venuewide branded moment of exclusivity that covers small and big screens
- Promote future events
- Timed or situational promotions of food, beverage, and merchandise
- Advertisement that is targeted by demographics, for example, age, gender, previous purchases, and so on

Q. What is the purpose of the SVM Streamer?

A. StadiumVision Mobile Streamer is a primary part of the StadiumVision Mobile solution and the component that allows scalable delivery of live and playback video to tens of thousands of devices in a crowded venue. At its core sits an error correction engine that allows video to be sent as multicast packets across the Wi-Fi network, to be received and played back without artifacts or errors on the mobile device. The SVM Streamer achieves this by sitting inline in the video and data streams, which allows it to continuously calculate redundancy data. This redundancy data is then added to the stream in the form of repair packets. Finally, the original payload and repair packets are delivered using multicast to Wi-Fi-connected mobile devices.

For more information, refer to the StadiumVision Mobile Streamer datasheet posted at www.cisco.com/en/US/products/ps11274/index.html.

Q. What is the purpose of the SVM Reporter?

A. StadiumVision Mobile Reporter, a primary component of the StadiumVision Mobile solution, enables a sports or entertainment business to objectively measure and report on the quality of the fan experience they provide.

Mobile devices running an SVM client application periodically submit a set of video, Wi-Fi, and content usage metrics back to the SVM Reporter. The SVM Reporter's high-performance data collection engine is designed to keep up with client data arriving from tens of thousands of mobile devices. All client data is processed on the fly as it arrives and available for immediate viewing in a number of real-time reports and charts. All data is of a technical nature; no personal or user identification data is collected.

For more information, refer to the StadiumVision Mobile Reporter datasheet posted at www.cisco.com/en/US/products/ps11274/index.html.

Q. What server hardware is supported for SVM Streamer and Reporter?

A. Both the SVM Streamer and SVM Reporter are sold as appliances, with software and server hardware bundled together. The only supported server hardware is the hardware that comes bundled.

Q. Is SVM certified to run on VMware or any other virtualized platform?

A. No, the SVM Streamer and SVM Reporter are not certified to run virtualized. They must run natively and bare metal on the certified appliance hardware.

Q. What is the purpose of the SVM Software Development Kit?

A. StadiumVision Mobile Software Development Kit (SDK) is a set of software libraries that enable developers to quickly develop engaging fan applications for iOS and Android mobile devices and tablets. The libraries provide the necessary functionality to take advantage of the SVM Streamer services and also provide performance metrics to the SVM Reporter.

For more information, refer to the StadiumVision Mobile SDK datasheet posted at www.cisco.com/en/US/products/ps11274/index.html.

Q. Does Cisco offer an off-the-shelf SVM application for iOS and Android?

A. No, Cisco does not offer an off-the-shelf SVM client application for either iOS or Android. What Cisco offers is the SVM SDK, which allows our customers to quickly develop their own application, in partnership with their preferred application developer. We believe embedding SVM capabilities into a custom application is what most customers prefer. Many of them have already invested in a fan application and want to differentiate their application by including other non-SVM-related experiences that are unique to their team or venue.

Q. Are there any plans to support devices running RIM, Symbian, or Windows phone?

A. There are no immediate plans to support any mobile OS beyond iOS and Android, which we support today. Apple and Google completely dominate the smartphone market with iOS and Android, respectively. If this changes, we will reassess whether we need to broaden our support.

Q. How do I obtain the SVM SDK?

A. To obtain the SDK, you need to first qualify for and join the SVM developer partner program. In order to qualify, the application developer needs to have an association with an SVM venue or content owner as well as a track record of successful applications.

Q. How difficult is it to develop an application that uses the SVM SDK?

A. The SDK library is very powerful, yet the APIs accessed by the application are straightforward. As a result, very little code needs to be developed in order to build an operational application. The SDK signals an event once it has started, and capturing the channel updates and tuning to one of the video or data channels is the only other function that needs to be implemented.

Q. What is Connected Stadium Wi-Fi?

A. Cisco Connected Stadium Wi-Fi (CSW) is a high-density wireless network architecture designed for crowded stadiums, arenas, and entertainment venues. CSW uses standard Cisco wireless controllers and access points as its building blocks. It combines these with firmware that is optimized for challenging RF environments and has enhanced multicast capabilities. Among the many aspects of this design is the use of cellular principles, highly directional antennas, and tight spectrum management.

Cisco Connected Stadium Wi-Fi (CSW) is a prerequisite for SVM.

Q. What's the difference between SVM and CSW, and do they always go together?

A. CSW is the wireless IP network. SVM is an application that uses the CSW network to distribute live content to wireless devices. SVM is dependent on CSW and cannot be deployed without it. CSW, in contrast, can be deployed standalone, without SVM. A typical scenario for CSW without SVM is 3G/4G offload, a term used to describe a use case in which data traffic is moved from the cell phone network and onto the Wi-Fi network in order to free up capacity for telephony and SMS.

Q. Is SVM certified with a third-party Wi-Fi network?

A. No, currently mobile applications using the Cisco SVM Software Development Kit are only certified for use over a Cisco Connected Stadium Wi-Fi network.

However, StadiumVision Mobile is fully standards compliant, and in principle it should work across any Wi-Fi network that can provide high-density coverage, supports multicast, and enforces the appropriate quality of service (QoS) for live streaming video. Cisco's experience so far is that these are nontrivial requirements and that without first conducting testing and certification it is unlikely that an SVM deployment across a third-party Wi-Fi network will be successful.

Q. Can the Elemental L152AE-C encoder be substituted with a different encoder?

A. No, the Elemental L152AE-C encoder may not be substituted with any other encoder. Although we'd like to use a Cisco encoder, the conclusion from our testing is that none of them meet the specific requirements of SVM today. This could change in the future, and we will continue to evaluate on a periodic basis.

Q. What are the scalability considerations for SVM?

A. Because SVM uses multicast, its scalability characteristics are excellent, and the number of clients that can receive content from a single SVM Streamer is almost unlimited. Other parts of the solution do have finite scaling boundaries as outlined in the following.

The SVM Reporter's workload is proportional to the number of clients submitting performance stats and the frequency at which these stats are sent. SVM Reporter 1.2 testing on the C220 platform shows that it can easily keep up with 5000 clients submitting stats at a rate of one record per minute. This is a conservative number that we expect to be able to raise in a future release.

SVM scalability is also constrained by the amount of Wi-Fi bandwidth available for multicast traffic. The aggregate bandwidth of all active SVM video and data channels and service announcements must not exceed 5 Mbps. This is the driver behind the maximum of 4 active video and 4 active data channels scaling limit for release 1.2.

Q. Does SVM support other languages besides U.S. English?

A. Release 1.2 is not internationalized. The SVM Streamer and Reporter user interfaces and documentation are only available in U.S. English. Internationalization and non-English localization are a natural evolution for SVM, but not currently committed for any release.

It should be noted, however, that the SVM data channels are transparent, so any character set and language can be delivered to the mobile handset. Also, the SVM SDK has no language dependencies, so application developers around the world are not constrained in any way. Developers do need to be able to read English in order to benefit from the SVM SDK documentation.

Q. What partners are certified to sell and deploy SVM?

A. Enablement of the Cisco field teams and Cisco partners is being done in two phases. At the time of the SVM 1.2 launch, the focus is on enabling the Cisco SESG sales and delivery teams. These two teams will then lead sales and PDI service delivery.

Partner enablement will start ramping up in early 2013. Partners that are interested in becoming certified should send an email to askciscosports@cisco.com.

Q. What is the difference between SVM and the VideoStream feature in Cisco APs?

A. VideoStream is a feature of the Cisco Wireless LAN Controllers (WLCs) and Access Points (APs). It converts multicast packets into unicast packets and delivers them one at a time to each associated endpoint. Delivering them as unicast has the advantage that each packet can be acknowledge and hence retransmitted if needed. This makes sure of reliable delivery, but at the cost of sacrificing the bandwidth efficiencies of multicast.

The SVM approach is to add repair packets to the payload stream and use multicast to deliver both repair and payload packets all the way to the endpoint. This preserves the benefits of multicast, while still allowing the endpoint to recover from packets lost in transit.

Q. Can SVM be deployed centrally and serve fans at multiple remote sites?

A. No, SVM does not currently support a centralized multisite deployment model. Customers with multiple sites should treat each site as an autonomous SVM site, each with its own SVM Reporter and SVM Streamer.

Q. Is TAC support available for SVM?

A. Yes. TAC is in the process of being trained to provide level 1 support and will start taking SVM calls sometime in Q1 CY2013. The TAC is being backed up by the SESG escalation, engineering, and field delivery teams.

Q. Are SMARTnet and SASU offered for SVM?

A. Yes, SMARTnet® and SASU are available for both the SVM Reporter and Streamer. These two SVM products have both a hardware and a software component. The SVM SDK is purely software, and hence only SASU is applicable. SASU for the SDK follows the per-seat licensing SKUs.

Q. What is the pricing model for SVM?

A. The total price for SVM consists of a fixed price for each of SVM Streamer and Reporter and a variable price for the SVM SDK. The SVM SDK is licensed on a per-seat basis, resulting in a total price that is scaled to the size of the venue.

Seat licenses must be purchased for every seat in the venue, even if only a subset of those in attendance takes advantage of SVM service. Use the website www.worldstadiums.com to determine the seating capacity of a stadium.

Q. Is there an ordering guide for SVM?

A. SVM ordering guidelines are part of the new overall SESG ordering guide. The existing standalone ordering guides for Connected Stadium (CS), Connected Stadium Wi-Fi (CSW), and StadiumVision (SV) are also in the process of being merged into this single ordering guide. The SESG ordering guide is in the process of being posted on the SESG partner site at www.ciscoet.com.

Q. How do I create a bill of materials and associated price quote for SVM?

A. Use the new Guided Systems Selling (GSS) tool in the Cisco Commerce Workspace at www.cisco.com. GSS is a web-based tool that makes it easy to:

- Design SESG solutions, including SVM and CSW
- Generate a bill of materials
- Generate a solutions quote that includes products and services

A few other facts about GSS:

- GSS can be accessed at:
  - https://www-gsc.cisco.com/swc/cisco/ciscoAdvisor.action
- SVM support in GSS will be available around January 1, 2013
- GSS replaces the existing spreadsheet-based BoM calculator
- A GSS-generated BoM can be imported directly into the ordering tool
- GSS is available to partners and customers

Q. Does an SVM deployment require StadiumVision Director?

A. No, SVM is designed to be deployed standalone and does not depend on SVD.

However, deploying SVM and SVD alongside makes available some additional "better together" capabilities that are otherwise not available. These include:

- Streaming of live Daktronics and OES scoreboard statistics to mobile devices
- Streaming of live NFL GSIS statistics to mobile devices
- All-screens moments of exclusivity when one sponsor's brand takes over both big and small screens in the venue

Q. Is a Cisco Digital Content Manager (DCM) needed for SVM?

A. No, a DCM is not needed.

Printed in USA   C67-726437-00   01/13