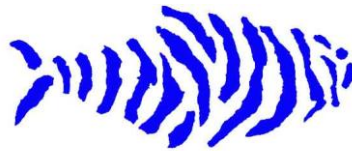


Keynote Address, September 12, 2012



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[Start of recorded material]

Male Voice: Ladies and gentlemen, please welcome Senior Vice President and General Manager, Intel Software and Services Group, and Chairman of McAfee, Renee James. [Applause]

Renee James: Good morning, and welcome to day two of IDF. I want to thank TMTS. We're going to talk about them and meet them a little bit later. I feel a little bit like a rock star myself because I get to be the opening act for Apple's next announcement which is following me at 10:00, so I appreciate you all attending this morning. Some of you know there were some comments about HTML5 yesterday by Facebook. So we have a little bit of work to do on that front, as well.

This is our developer conference. So this morning's focus is very much on the future trends that are affecting you as developers. We live in an era of ubiquitous computing or pervasive computing, whichever term you want to use. And it's something we've been working on at Intel for over two decades.

As early as 1994, we predicted a world where PCs and devices would all compute, connect, communicate, and, of course, it's happened. We have billions of connected PCs and other compute devices, billions of phones. Now we have cars, TVs, and the emerging Internet of Things, all connected, all computing.

Computing is everywhere. It's all around us. It's in the cloud. It's in every device and everything we do. So today, this morning, we're going to look to the future, and we're going to talk about what some of the key technology drivers are for developers going forward.

First we'll talk about mobile clients, then we'll talk about the datacenter, and then finally, of course, security.

This should be the most fantastic time to be a developer in our industry. So much innovation, so much change, so much opportunity. But with that opportunity has come some unintended consequences for developers, such as the sheer amount of work required to develop for all these new platforms. Over the past few years, we've seen in client compute the environment just expand: new OS platforms, new programming languages, new usage models. And we now have different client software environments for different platforms.

Each of us, as users, want all of our apps, all of our data available anywhere regardless of the hardware manufacturer, regardless of the software platform, regardless of what store we bought that from. But as developers, you know that that is not an easy boundary to cross over. So a few weeks ago, we talked to some of you to get your ideas about what's going on in the compute landscape today. And here's what you had to say.

[Video begins]

Male Voice: The idea of putting passion to work is torture. Your day begins when you wake up with the idea because you can't get back to sleep. And so I try to get it down on something before it fades into something else I've seen before.

Male Voice: Today, if you want to publish applications, the environment has gotten to be kind of almost a minefield of different vendors, different requirements, different platforms that offer different services and in some cases require a different development environment.

Male Voice: Marketing an app is getting harder and harder and harder every day. And that's just because there's so much noise. There are something like a half of a billion apps or something out there right now. It's a remarkably huge number. And so standing out in that crowd is hard.

Male Voice: It's becoming harder and harder for new technologies to rise above the noise and really actually solidify themselves as something that the general public uses.

Male Voice: Some people are very business-oriented, and some people are very creative. Yet, to be a successful software company, you have to have both. It is a lot like Picasso having to paint and then organize a file cabinet.

Male Voice: If you're the new guy on the block, you can't live entirely on passion because it just doesn't carry the weight it used to. You have to be able to also do the business side of it, and you're not probably going to do that alone.

[Video ends]

Renee James: As you just heard, all of the developers that we've been talking to have finite resources. And in the current development environment, they have to make tradeoffs about what they're going to do around their business imperatives.

The first one is innovation. And, of course, everybody wants to innovate. Nobody gets up in the morning in technology and says, "I don't want to do something new." But the more you invest in a single product on any given platform or a single operating environment, the less resources you have available for porting and getting into another environment or store.

The second tradeoff that you heard about in the video is market participation. How many opportunities can you really effectively participate in? Every time you port, you have to test of go through the process again, fix bugs, market, and start over. And if you decide to just focus on one environment or one ecosystem exclusively, that becomes your single point of failure. Because if your app or service doesn't do well in that environment, you're

probably stuck with your last imperative, which is around profitability.

It's very, very hard for developers to make money, despite all of this opportunity, all of these platforms, new environments, all the apps that we read about, and the proliferation of app stores. We can look at some data we just saw in a recent developers' survey where a third of the apps on all platforms generate less than \$500 a month. And developers can't live on that.

Another 14 percent of the apps generated between \$500 and \$1,000 per month. And this is across all platforms. This isn't just on phones. This isn't just on tablets. This isn't just on PCs or ultrabooks. This is across all client platforms. Only 13 percent of all those applications make over \$1,000 a month. That means 63 percent of all apps are generating less than \$5,000 a month. That's not enough for a healthy developer ecosystem, especially with all the opportunity in mobile software.

The other mention in the video that you heard about is marketing costs. And I'm sure many of you who are developers know that the marketing costs are even higher than they've ever been before. On average, it's 50 percent of the production cost of an application is the marketing cost. And it's harder and harder to break through the noise, because there's more applications, there's so many more consumers. How do you get noticed? And marketing expense is continuing to increase, because only a quarter of users that buy any

app are still using it after three months. So you have to continually capture their attention or get new users.

So the question that we pose, and the effort that we want to undertake with developers on our platforms, is what if the world could work differently? What if a single app worked across multiple ecosystems and multiple environments? What if you could really write once and run it on all of these platforms? What would that world look like?

I'm going to introduce Peter Biddle, the General Manager of Cloud Services at Intel, to show us a glimpse of what that world could look like. Hi.

Peter Biddle: Hey.

Renee James: Good morning.

Peter Biddle: Nice seeing you.

Renee James: Nice seeing you, too. [Applause] Are you going to show us the future?

Peter Biddle: Yeah. We really want to look at how we can create services and software that help developers help users – make users happy. So the demo we have is a sample application that's called Digital Mementos. And it is a multi-platform, multi-device software

experience clustered around location, which is part of what we got when Telmap became part of the Intel family a year ago.

Renee James: Right.

Peter Biddle: We got a bunch of great location capabilities. So we have a brand new ultrabook. It has multiple sensors, including GPS –

Renee James: Fabulous.

Peter Biddle: – which means that, among other things, a combination of that and our location service means no more printing a map while you're in the car and then crumpling it up, because we can look at how we can help solve that problem. So we have an ultrabook, and an iPad, and an Android phone.

Renee James: Okay. Want to show us?

Peter Biddle: Sure. So what we have here is the Digital Mementos application. As I said, it's a sample app. It uses our services, plus obviously it's part of Windows 8. And we have a trip that we're going to take in San Francisco. And this is all live, so if it crashes, I want to remind people that real demos crash; fake demos do not crash.

Renee James: [Laughs] Thank you, Peter.

Peter Biddle: Yes. Because why would you put a crash into a flash demo? You wouldn't. So we have a set of things we can look at before we start the trip, so these are all different places we could go to – Blue Bottle Café, very good coffee, went there this morning. But then we also built a trip. So we're in the middle of this trip right now. This is the different places we've looked at. One of the places we could go is Alcatraz – which I expect to be going to if the demo fails. And you'll notice that map drew a little bit slowly there for a second. The reason it did that is because that's actually using our mapping service, right? So it drew it live, absolutely. And then that's something that will be accessible to all developers at a near future date. So let's take a look at where we actually are right now. One of the things we enable is the notion of geo linking or geo embedding, as well as geo fencing. So you can take pictures of the places you went, and then you can associate them with a point of interest, or a POI. And then you can actually share those with other people.

Renee James: On any platform?

Peter Biddle: On any platform, as it turns out. So let's look at that. So I'll go in my app. I share. It says it's been successfully shared on Facebook. We'll go over to the [icon]. So we have here, this is a Facebook page. There's a great picture of me. Thank you, demo team. And we clicked on the link there. We're now actually in your page on your iPad. And we're looking at another HTML5 app. You'll notice it's not the same as what we do on the Ultrabook. That's because we don't want it to be identical.

Renee James: But I didn't have to download this. I just got this.

Peter Biddle: It just was the magic of software.

Renee James: Fabulous.

Peter Biddle: Yeah. So you can interact with my trip. One of the things you can do is you know that I walked from Union Square past the cable car, turn around to get down here every morning. You can leave me a geo message. So a geo message is linked to a specific place as part of my trip. And we do what's called geo fencing. So geo fencing says, "Link this message to this specific location, and deliver it to Peter." You're doing this through the magic of software. "Deliver it to Peter when he goes near that location."

Renee James: On whatever device Peter happens to have on him.

Peter Biddle: On whatever device Peter happens to have at that time. So we happen to have here an Android phone. I've got to hold it up straight. So it says you have one new geo message. We're pretending for a second that I'm walking through the cable car turnaround. I click right here. It says messages nearby. I click on messages nearby, and then I'll read this. It says, "Hey, do not forget to bring chocolates from Ghirardelli." Ghirardelli happens to be right by there, so of course I had to remember to bring chocolates

from Ghirardelli. Which is why, ta da, through the magic of software, I have chocolates from Ghirardelli to give to you.

Renee James: Thank you, Peter. So tell us what we just saw.

Peter Biddle: So we started on Ultrabook. We think an Ultrabook is a phenomenal, first-class location citizen, and a great place to think about where you're going to go. But clearly it's not going to be the thing necessarily that is your experience, right? So we created a trip, we built a trip out, and then we did a little bit of the trip on the Ultrabook. Then I shared the trip with you on your iPad.

Renee James: And I didn't have to download a special app or anything.

Peter Biddle: Nope. And through the magic of services, it knows it's you on the iPad, me on the Ultrabook, and then me again on the Android phone. You then leave a message for me. I have it on the phone. I see it when I walk to that location. I remember to get you chocolates. You get chocolates. The demo didn't crash. We're all good.

Renee James: Thank you, Peter.

Peter Biddle: Thank you.

Renee James: We'll come back to the cloud services that were the backbone of this demonstration later in the presentation. But what this demo

does embrace is a concept that we called transparent computing. And transparent computing is really about allowing experiences to seamlessly cross across different platforms, both architectures and operating system platform boundaries. It makes extensive use of technologies like HTML5 – which we're going to talk a lot more about in a second – and in house cloud services. It represents for us the direction that we believe we need to go as an industry. And it's the next step really beyond ubiquitous computing. This concept of transparent computing is not new. It's something that has been worked on since the late '90s really at MIT, and most recently at Tsinghua University in Beijing, by a professor named – I'm not going to say his first name, but Professor [Zhang]. And we have been working with him throughout the entire time. And really it's based on the assumption that ubiquitous computing foundation's available. And it is now. And that's a powerful mobile appliance, along with high speed mobile networks, wireless networks, and a broad enough proliferation of cloud services and data center resources everywhere to do some of these things that we would only dream about a decade ago. Transparent computing is the core of how users view the experiences in compute today. It's about enabling what they want to do. They don't care about the operating system. And sadly, and as much as we would not like it to be true, they don't always care about the hardware architecture underlying their experience. What they care about is the task they're trying to perform, or the information that they're trying to get to. What they want is that their iPad and the apps that they download will work on their Galaxy phone and on their Ultrabook. So enabling those users

is really the core of the approach that we're advocating, versus where we've been today, which is hard technology boundaries. So where do we go from here? We need three things. We need a programming environment that crosses across platforms and architectures and the boundaries. We need a flexible and secure cloud infrastructure. And we need a more robust security architecture from client to the data center. So let's start the discussion – I'll go through each one of these – talking about the programming environment, and hear first from some developers.

[Video begins]

Male Voice: I, myself, am a musician who wasn't quite good enough to make it on the road. I really wanted to help other artists advance their careers, build a fan base, and make money from their art. Using [unintelligible], artists can share all of their music, their photos, their videos, their concert tickets, and their merch store with their fans directly on their mobile devices. Developing for multiple platforms means essentially doing the project over again from scratch for each platform. It's incredibly frustrating to have something that works on one platform that you're really stoked about, and then turn to another platform and it either isn't technically feasible, or it's going to cost you a ton of time and money to figure out how to get it there. And some fan is going to say, "Well, why can't I do this? I did it on my iPhone. Why can't I do it in HTML5?" In a perfect world, a user's experience on one

platform would indistinguishable from another. You code it once, and then you pull it everywhere.

[Video ends]

Renee James: So HTML5 is designed to be a cross-platform technology. And while I know there's a lot of differing opinions, some of which were voiced yesterday, we all agree it's been very overhyped. And like most new technologies early on, it has some struggles. We believe, Intel now, that it's emerging as a credible solution for several of the technical challenges that we outlined around the vision for transparent computing. Additionally – and you're going to hear a lot more from this today and in the near future from us, and as we talk to you about our new developer programs – we've done substantial work, and we'll continue to do even more work – on the performance, as there have been a lot of early performance limitations around HTML5, and some of the challenges that we think Facebook may have struggled with. While we have a lot of work to do, we don't think it's done. We want to make sure that it accelerates, that it's adopted, and some of the performance work continues to progress. But our position is clear. We believe it's a real solution for where users want to go, and where we believe users are going to demand that we go as an industry. We're committed to making sure that HTML5 remains open, cross-platform, and has the right performance, as I said. And we want to make sure it doesn't go the way that other promised languages have gone. So, of course, I probably don't need to tell you this, but I'll say it because we always

talked about it. It will run best on Intel. And the emerging performance capabilities of HTML5 are really evolving to the point where full media integration – which has been another one of the limitations much discussed – such as video, 3D, audio, full interactive capabilities, are really being able to just now be done. We're seeing full interactive applications being developed, like electronic textbooks using just HTML5. So what I want to share with you next is an application developed in China. It's an application that is used to teach children to speak Chinese if they don't natively speak it, and I want to introduce Paul and Bridget. Good morning, Paul and Bridget. Paul and Bridget, thank you for joining us. Neither one of these two wonderful children spoke any Chinese a week ago. Why don't you tell us what you've learned.

[Speaking Chinese]

Renee James: Good work. Show us how you did that.

Bridget: Okay, so we've been learning all about China and Chinese through this new electronic textbook. And so, everything's on here. Let's start out with writing. So, this is the character for Jong. And so, it also shows you . . .

Renee James: You should say it, too.

Bridget: Jong. So, it also shows you the stroke order on how to properly write the character.

Renee James: Okay, I'm going to watch carefully. I understand that it must be in the right order.

Bridget: Yes. Do you want to give it a try?

Renee James: Okay, I'll get this right. I need to go like that, right? Yeah, no?

Bridget: Do you want to try again? [Laughter]

Renee James: I think I need a week. No, it's okay, darn.

Bridget: Okay.

Renee James: Thanks, Bridget.

Bridget: You're welcome. So, you can also learn more Chinese words that associate with the character Jong. Jong guo. Jong chan. Jong wen. And so, at the beginning of the demo, Paul and I were talking about the Expo 2010. And so, Expo 2010 was held at Shanghai a couple years ago. So, here's a video from that event.

[Video plays]

Renee James: This is full HD video just running in the HTML5, and Paul's going to tell me about it.

Paul: All right.

Renee James: Go ahead, Paul.

Paul: Well, as well as this, we'll see what I remember from the vocabulary exercise. We're going to match these correctly here with . . .

Renee James: I think I got a smiley – a negative face on my writing. You're doing better.

Paul: All right, I'm going to check that.

Renee James: So, full interactivity.

Paul: Full interactivity. You can do exercises. Also, we've been learning about Chinese culture and Chinese ancient history. How many people do you think lived in China in 1636?

Renee James: 1636, I don't know, 50 million?

Paul: Well, it turns out it's actually around 400 million people living in China. We can see this in the map exercise. But for the globe today, when we're learning about China, we have these icons that indicate 100 million people. As you can see, here's the United States, and there's three icons representing the 300 million people living in the United States today. But when we turn to China, you can see there

are 13 icons representing the 1.3 billion people living in China today.

Renee James: And this is a full-3D image that you can interact with in the application.

Paul: Well, thank you very much.

Renee James: Thank you both for learning Chinese for us, and we appreciate you doing that. Thanks. Bridget and Paul did a better job than I did, I think, in learning that.

So, everything you just saw was done in HTML5, and that really was to demonstrate that you can handle all media types very interactively. And we believe HTML5 now is ready for and capable of delivering robust applications. The interest is growing with developers. We have continued to do surveys of developers to find out where things are going, and 40 percent of those surveyed said that they are already using HTML5 in some way in their development, and the other 40 percent of the survey developers said they planned to use it. We believe that HTML5 as the application programming language is what can deliver a seamless and consistent environment across the different platforms – across PCs, tablets, telephones, and into the car.

So, I want to return to our band, TMTS, that was up here earlier, and I want to ask Scott Reitherman of the band, our leader of the

band, to join me on the stage, along with the MobBase cofounder Alan Khalfin. Hi, Scott. Good talk this morning.

Scott Reitherman: Thanks a lot.

Renee James: Thanks. Hi Alan. Okay, TMTS is using technology from MobBase to build an HTML5 app for their band and get their name and selves out there promoted, so why don't you guys show us what you're doing? Thanks.

Alan Khalfin: So, my cofounder and I, we're both musicians, and we set out to solve a problem that we faced – how to engage fans in a way that creates the deep and lasting connections that builds live audiences and enables musicians to profit from their works? Well, that was back in 2007, and we've built a number of tools to musicians since then, and then something amazing happened. Apple launches app store and created a revolutionary new way for artists to engage with fans on mobile devices. We quickly saw how powerful this was for artists and set out to build a way they can create their own mobile apps in an easy fashion and an inexpensive fashion.

Renee James: So, you built an app?

Alan Khalfin: We built not an app, but an app-building platform that they could use to build their own apps without needing to know how to code?

Renee James: In the app store? Did you list it in the app store?

Alan Khalfin: So, we first launched it for IOS, and put it in the app store, then we launched it for Android, and a couple of months ago we launched at HTML5 version of the MobBase app.

Renee James: Why'd you do that?

Alan Khalfin: This allows artists to build just one app that connects with fans on all smartphones and tablets, and it takes away the pains of submitting apps to specific app stores, and dealing with the restrictions that they may have, or the requirements, and all that stuff that just slows down the process and prevents more people from engaging in content.

Renee James: Okay, you want to show us what it does?

Alan Khalfin: Absolutely. So, MobBase apps are built using an easy to use web-based dashboard that lets artists add, manage, and update content in real-time. So first, after you create a free account and login, you come to your home screen page. As I said, you don't need to know how to program to build an app, because most musicians have no idea how to do that. So, the first thing you'll do is, you'll select a layout for your app. After you do that, you'll upload a background image for your home screen. Then you'll decide what features you want to include and where they will go in the app, and that's as simple as dragging and dropping a feature. You could have music, videos, photos, tweets, and a lot more.

Renee James: I see a very [assigning] app up there.

Alan Khalfin: Yes, this is the management committee member app, for Intel.

Renee James: Where we're going to submit our song?

Alan Khalfin: This is, yeah, a 30-piece all-star band of the Intel executives for you to enjoy. After you drag and drop your features, you can upload images to the home screen buttons so that your app can have a unique look and feel. We don't want this to feel like cookie-cutter or template apps, and this is really how you would achieve that. So, this is what the app interface looks like for the MCM app. Once you've decided on your interface, you can then add content. So, you can go to the discography tab and you could add your album data, your purchase links, your music, your lyrics. You can then go and add photos, videos, and Twitter accounts, so that people can follow you and you can communicate with them, and you can actually add the Twitter accounts of every Intel exec, if you like.

Once you've added all your content and you're ready to launch, you'll hit update or submit, and you'll go to the checklist page. And this will tell you if your app is ready to go, if you've cleared all the problem areas. This app is ready to go, so we will launch it. And in a couple of hours, the app will be available for fans to enjoy using HTML5. It's really that simple.

Renee James: Wow, okay. So, even Scott can do it?

Alan Khalfin: Even Scott can do it.

Renee James: Scott, as leader of a band, you want to share what you've created?

Scott Reitherman: Sure, yeah. So, this is the TMTS app that we developed with MobBase a few years ago, actually. When we started – I'll start playing a song from within this app – when we started, mobile wasn't really a part of the equation, and then more and more it's exactly how we should be connecting with our fans and aggregating all of our different social media in one place. So, we can do photo, we can do video, we can see what I'm saying on Twitter, you can read about our blog. Everything is contained under one roof, essentially, and with the HTML5, it just gives us more and more accessibility for people to reach the music.

Renee James: And to hear you. Thanks, Scott.

Scott Reitherman: Thanks a lot.

Renee James: Thanks for playing for us this morning. Thanks, Alan. I really wanted to see the MCM walking out there.

We have just seen a couple of different demos of different ways that we can engage HTML5, can really help bring down some of the cost for developers and really start to move us on the path to

moving experiences across different devices. On the Intel platforms, we've done several things to ensure that we have full platform performance, and I want to show you a very simple – you know how we love these – side by side performance demos, and just give you an idea of how much improvement we can get on the Intel platform. It's called River Trail, and on the left side you'll see just a regular, no performance improvement. On the right side is the performance-improved HTML5. And this is just a pure HTML5 app.

And what we've done here is – at the heart of this are the parallel extensions for JavaScript. And we've been collaborating with Mozilla on this and doing – based on our long-term work that we have been doing with them and our performance work that we always do, all of this will be available simply through the browser. You don't have to do anything. It's available today actually as a Firefox plug-in for Intel platforms.

What you're going to hear from us beyond small demos like this is several other tools that we'll be announcing for HTML5. And that'll be more throughout this next few quarters and into next year we'll be running [the] programs and other things. And I'll show you where you can go for those resources at the end.

So we've talked about the client and the application environment. But transparent computing obviously relies on the cloud to provide the developer and the application transparent services that move

across platforms and ecosystem boundaries. So let's hear from some of the developers.

[Video begins]

Jim Brady: Technology has done wondrous things in the last 10, 15 years. At the same time, technology is a tease, because it's always showing us what's just ahead and around the corner. And that's very frustrating. I'm Jim Brady, I run Earthcomber, and we develop multiple kinds of applications, mainly stuff that tries to look for new audiences using media in different ways. So we're kind of running a little mini cloud service all the time. Most of what happens on Earthcomber has a backend.

Cloud-based services right now are kind of wimpy. They do the basics, you know, share a file. They're not as live as they could be. They need a little more electricity running through them. People don't really need a lot of parking places in the sky. And that's where I think a lot of people tend to think of cloud as just a place to put stuff. I would just encourage any cloud service to really be out there as a real live thing, making as much action-oriented data happen as possible.

[Video ends]

Renee James: Peter hinted at this when we talked during his presentation that Intel is working on an integrated set of cloud services for developers that

we would host that would give some of the core elements required to really realize our vision around transparent computing. Some of them would be location services, like Peter demonstrated this morning; digital storefronts, federated identity attestation, some of the things that are required to know who's where on which device, sensor and context APIs for our platforms, and, of course, business analytics and business intelligence.

We will continue to roll these things out over the course of the year, so you should look for more from us on that. And as I said, these will be predominantly developer services, backend services for developers as they create application.

So the third element of transparent computing is security. And security is clearly one of the areas where a tremendous amount of innovation is going to need to happen for this vision to become a reality. Security on the client side has a lot of evolutionary work that needs to happen, especially as we think about where mobile devices are going and how people are using those devices as they go in and out of work and at home. And so I want to start, since we're on cloud right now, talking about security in the cloud, and then we'll come back and talk about where we're going on the other end of it.

For the cloud, as we migrate resources across these different datacenters and different environments, as we move applications and workloads, we have to do it in a secure way. And one of the

ways that you can do that on our platforms, on Intel's servers, is using Trusted Execution, or TXT. TXT allows data operations to occur isolated in their own execution environment from the rest of the system and safe from malware.

So what I'd like to do is invite our partner from EMC, Mark Leshar, to talk to you about how they're using TXT for security in their products. Good morning, Mark. [Applause]

Mark Leshar: Good morning, Renee.

Renee James: [Unintelligible]. Thanks for joining us.

Mark Leshar: Absolutely.

Renee James: A cloud demo?

Mark Leshar: Not a demo, but we're going to walk through secure cloud.

Renee James: Okay. Fabulous. Tell us how you're using TXT.

Mark Leshar: Absolutely. We're EMC, and we're here with our partners Intel, RSA, and HITRUST to actually demonstrate secure cloud computing.

Renee James: Okay.

Mark Leshar: Specifically, we're focusing on demonstrating active migration workload capability really to try and meet the requirements for active datacenters and for cloud bursting capability.

Renee James: Okay.

Mark Leshar: Actually let's talk about what we do today. In a traditional datacenter environment, in order to really do application migration or workload migration, what we'll tend to do is we'll build out to local private environments, you know, very traditional SAN storage environments, in between the two sites. We'll interconnect them with some form of replication technology to replicate data from site A to site B.

In order to effect a migration, what we'll do is we'll actually stop the application on the host itself at site A, move data, copy the data over to site B, move the workload over to site B, and then have to restart the applications. This is a complex and disruptive process that involves plenty of downtime.

Renee James: Yeah.

Mark Leshar: Now, in a secure demonstration or a secure datacenter that we're demonstrating downstairs, what we actually have is an active environment that supports active workload migration. So the first step is validating the secure boot process.

Renee James: The first step is having an Intel server with TXT.

Mark Leshner: Absolutely. So what first happens is Intel TXT, or Trusted Execution Technology, validates the server as it boots and allows us to create secure pools of servers. In fact, you quickly saw that our one server was not validated. At the storage and SAN infrastructure level, what we have is VPLEX storage appliances. What VPLEX does is it allows us to virtualize data across the datacenter so the data can actually be active and accessible simultaneously at both locations.

Now, as I look to do a migration, I'll actually start migrating application workloads non-disruptively from location one to location two. Now, this process is being managed as it occurs by the HITRUST policy engine. Now, what HITRUST does is it actively enforces and validates that those workloads are allowed to move from site A to site B.

Lastly, let's take a look at what happens when a workload is not allowed to move. So workload B tried to move over to the most, the non-trusted host at site two. It failed. HITRUST made sure that that did not occur.

Now, underneath the infrastructure here, what we have is we have events and tools that are being used to look at compliance in the environment. So the RSA Archer compliance tool is actually collecting hundreds of data points, including trusted technology

data [commanded] of HITRUST and coming out of the servers, and allows us to aggregate that into a compliance dashboard.

So this gives us the foundation for hardware trust with virtual storage, with security, control, and enforcement, bringing that together for the virtual cloud.

Renee James: Fabulous.

Mark Leshar: Absolutely.

Renee James: Thank you for sharing that with us.

Mark Leshar: Thank you.

Renee James: Appreciate it. [Applause] We all know that server demos are difficult, so I appreciate Mark helping us out with the illustration. In transparent computing, the security of the device is going to be largely around identity management. In addition to device management and application and software security, which we've been working on for a while, we have a lot of work to do in the area of identity and how we protect people – not only their data, but who they are at transactions, as they move these experiences across these different devices.

Identity and attestation we believe will become key underpinnings for all mobile transparent computing across different platforms and

the cloud. Underneath it all, we're going to have to have a very robust set of hardware features, which we plan to have, to secure that information. It's going to be even more critical especially as we think about mobile devices and we think about identity and attestation that we're able to truly secure and know that it is as safe and as known good as possible.

So to help me discuss the future of security, I'd like to invite Mike DeCesare, the co-President of McAfee out. Hi, Mike.

Mike DeCesare: Hey there. [Applause]

Renee James: Welcome.

Mike DeCesare: Good to see you.

Renee James: We've been talking about transparent computing, and now we're at the big ending, which is a lot of hard work that we need to do in security. But before I'll let you talk about that, last year when we were here was our first IDF with you. We talked a lot about the new things that we were going to be doing in hardware-assisted security. And so I think it would be great if you gave the audience an update on what we've done in the last year, and then we'll start talking about where we're going in the future.

Mike DeCesare: Sounds great. I think what many people forget is that McAfee was the world's largest dedicated security company before the

acquisition by Intel. We enjoyed a winning position in seven of the 10 Gartner Magic Quadrants in security. And we're still all those things, but under Intel we're much, much more.

As you know, we have 240 engineers focused –

Renee James: Yes, I do know!

Mike DeCesare: ...because you funded it. Engineers solely on the value proposition of hardware-assisted security. Just to put that in perspective for the audience, that's bigger than the entire R&D organization of most security companies that are out there. And we're really proud of the work that this team has done in the first year. The first thing that we've come out with is called Deep Defender. And Deep Defender really helps IT organizations solve one of the biggest challenges they face today, these targeted threats. You can't pick up a paper without reading about Stuxnet, Flame, and most recently Shamoon. These are all examples of very technically sophisticated pieces of malware. In many cases, they leverage encryption inside their products. There's version control, showing they've gone through a QA process. And they really go directly after certain targeted information inside organizations. The Deep Defender product is designed to leverage the functionality on the Intel chip set, and give the security product much better visibility than it's had in the past around rootkits. And this just helps the security product detect those things in a much better way.

Renee James: So that's a product that we're shipping.

Mike DeCesare: That is a product that is shipping currently, correct. The second thing that we've come out with is ePO Deep Command. And this leverages the vPro product set from Intel. And it allows IT organizations to be able to tackle a couple of big things around power savings, and then very close to home for us is really around the speed. Our encryption product, as an example, runs many times faster than it did a year ago because it now leverages the graphics processor on that machine. So these are just a couple examples of what we've been able to accomplish, and there's much more to come.

Renee James: Fabulous. Thank you for updating us. So we've clicked forward here a bit, and we're thinking about the future of where client security needs to go – any app, anywhere, on any device, in that kind of a world. And we think about social media as one of the big forces behind what users are doing today. So what I understand is you're going to share something with us around that right now, and then we'll keep going forward.

Mike DeCesare: Absolutely. Social media is probably the best example of how ubiquitous computing can get in a cloud based environment. I think the thing that people have to realize though, is that whether you're a corporation or whether you're a consumer, you're putting information up into the cloud, and you have a little bit less visibility and control of that information in certain respects. You know, ten

percent of the world's population at this point is on Facebook. So what we're going to show you today here is an example of how the security companies can pull together and have those customers get more control of their information. Should we take a look?

Renee James: Right. This is part of this ongoing work that we're going to have to do around identity and online and what people are doing with their data.

Mike DeCesare: Absolutely.

Renee James: So Diana?

Diana: Right. So as everybody knows, it's very easy to share your photos on Facebook, but it's not so easy to control what your friends do with them once they get them. I mean they can pretty much print them, copy them, edit them, distribute them. You really have no control once you shared them. So today we'd like to show you an alternative. This is the McAfee Social Protection App. And what it lets you do is it lets you share your photos as usual through Facebook. But the people you shared them with, all they can do is look at those photos. They can't print them or do a screen capture. They can look at them. So you know you can share them and they can see them, but you've got control over what happens to them. So let's actually take a look at that in action. I've got a few photos here that have been shared with me.

Now this one was shared with me actually just the usual way, not using the social protection app. So as you see here, I can actually just copy this image and quickly grab it, and basically do whatever I want with it. I actually know this kid, and I'm tempted here to put a couple devil horns on him and send it out as a warning to potential babysitters. And unfortunately, since they just shared it with me the regular way, I could actually do that. I'll save some time and not do that right now, but it would be pretty straightforward. But the other picture that we have here has actually been saved using the social protection app. And this one, if I try to click on it, you can see you get kind of a hint here because the watermark comes up. And if I try to copy this one, you can see what happens. This is all I get. So I can see the picture, but I'm not able to copy it. I can't do a print screen on it or a screen capture. This is all I see. And that's because I used the social protection app to save this picture. So the social protection app is a really nice way to let you share your pictures but still control what happens with them. And it's available in a public beta right now on Windows 7, Firefox, and Internet Explorer, and it will be coming to more browsers and OSes shortly. So it's the McAfee Social Protection App. You know, share your photos, but do it safely.

Renee James:

So that's a beta. I know you have a lot of other things going on. I know that's a beta, but there will be more there. As we talk about the future and where we're going with security and the client, it's not just the client as we've been talking about transparent computing, right? It's from the client across the cloud, the network,

and into the data center. So why don't you give us an update of what McAfee's doing, if you can, quickly, on all of those different areas.

Mike DeCesare: Sure, absolutely. As you mentioned earlier, transparent computing offers a lot of promise of this connected world. And as you mentioned, the users ideally are masked from the complexity that might sit behind the surface. But there is complexity there, and we all understand that there's servers and PCs and smartphones and tablets, and they all have different operating systems. And our goal as a security organization, as a security industry, is to try and make sure that we protect all of that information regardless of the medium that it might be on. McAfee and Intel together are really solving this in two very distinctly different ways. The first is around hardware assisted security. And it's basically the concept of trying to give the security products better visibility to what's going on in the machines that it's securing, and getting the security product effectively to a higher ground, where it has more visibility, and can offer a better and strong security posture as a result.

Renee James: And that's something we've been talking about since you joined us.

Mike DeCesare: It is, indeed, and there's a lot of activity in place, and many, many things that you'll see come out over the years around that area.

Renee James: That's right. We have a lot of new announcements of new products next year.

Mike DeCesare: Correct. The second strategy though is really around the concept of security connected. And if you look at traditional IT, most organizations, they put up a firewall. They put security on their endpoints. They put security on mobile devices. There's database security in the data centers. And really what you're doing is putting a whole bunch of walls up, and you're hoping that one of those walls stops the bad guys from getting in. Well, the reality is that architecture leaves cracks in the seams, so seams in the architecture. And the bad guys, the sophisticated malware has gotten very good at exploiting those, getting in in a very undetected way –

Renee James: In between the different security products.

Mike DeCesare: In between the different security products. So security connected is the whole concept of the security that's on your endpoint, talking to the security that's on your mobile devices, talking to the security that's in your data center, and talking to the security that sits out on the perimeter of your network, all exchanging information in very real time, and providing the organization the ability to fend against that.

Renee James: And that's something that McAfee's been working on for a long time, and I don't think we've talked about it a lot. But it's becoming more and more important, as we think about transparent computing, to not just secure the specific instance, but to be able to secure across all those different platforms.

Mike DeCesare: We think it's very, very critical for the evolution of security.

Renee James: And you have products in all those areas, I know.

Mike DeCesare: And we have products in all those areas.

Renee James: All right, thanks, Mike.

Mike DeCesare: Thanks, Renee. I appreciate it.

Renee James: I look forward to the announcements. McAfee's big user conference is coming up here in another six weeks, and so they'll be making a lot of new product announcements and new updates at that venue. We have been talking this morning about transparent computing and developers. And developers, of course, as we all know, need more than a vision. They actually need help. So I'd like to listen to a few developers and talk about what we're going to do to help.

[Video begins]

Chris Skaggs: When you're just starting out, it's usually because you're driven by a passion, or you have this big idea that you know is going to be the best app ever made. You think that you're Kevin Costner, and if you build it, they're going to love it. They're all gonna come. They're going to be tearing your door down. But the truth is, if you build it, they don't care. My name's Chris Skaggs. I'm the founder of Code Monkeys and Soma Games. When you're starting out with a new

app, for one thing you're into a whole new world where you don't know how any of the rules work, you don't know any of the people. How do we build this business? How do we survive? How do I make a living at it? The reality is that technology is not the biggest problem. Frankly, it's in the distribution. Knowing the folks who are really moving the distribution bar forward, knowing the folks who are willing to open up and share kind of what they're seeing as best practices and where are things going, whether it's the performance evaluators or marketing statistics, the rising tide lifts all boats and that sort of thing. Having the community is what makes it really valuable. That's going to make the difference between having your best app that no one in the world ever sees, and letting the world really understand the coolness that you've created.

[Video ends]

Renee James: So today we're announcing the International Developer Zone. There's a lot of activity out there about it. What it is is a global program for developers that creates a central repository of not only all the development tools and STKs and all the things you have come to know and love about us for the past 20 plus years, but it also works with you from development through distribution, including marketing programs, other online opportunities to promote the work that you're doing, both with Intel and out in the community. The Developer Zone is going to be organized. And for those of you that have been with us for a long time, thank you. The develop program has continued to grow. And one of the big pieces

of feedback we got from all of you, it was a little bit difficult to navigate the breadth of information that we have across all of the different platforms, the different technology areas that you hear about in the tracks, and, of course, find the experts that you've been using, both online and those that come out and train. So we've organized around three centers. One is around helping you enhance the user experience on whatever platform you're on. The other area is around opportunities to grow your business, and then cross-platform development in whichever order you want them or need them. What you'll find in the developer zone, so it'll be a lot easier for you to find when we have new announcements, when we have new tools posted, when we run public betas. We're going to be doing an increasing amount of work where we allow you to participate in betas and early access programs, a lot more rapid development around services, and we're going to offer all of that through the Intel developer zone.

We will continue to provide direct distribution support for your applications and services through AppUp, and those of you that know about it, fabulous. If you don't, AppUp is the opportunity to distribute through a digital storefront across 45 countries, around Intel platforms. We support Windows and Tizen and HTML5, both native and other apps.

In addition to all of that, we will be revitalizing the software business network, which we've used to pair you up with other Intel distributors and Intel hardware partners for exclusive offers and

bundles. As we see more and more solutions in our industry, we want to make sure our developers are able to connect with people building on Intel platforms. And other additional marketing programs and that kind of thing are all going to be in the same place.

And in Q4, we will have a specific program launched on HTML5. That program will help you write applications across multiple environments. We'll be doing training, we'll have SDKs, there will be tools. We will be working on how you run across IOS, Android, Windows, Linux, and Tizen. So, please stay tuned and go to the developer's center for that.

Finally, today is just the start of our discussion on transparent computing. In the era of ubiquitous computing, we had that industry vision for a decade, and now that's become a reality. And just like when we first predicted there was going to be a billion connected computers – I still remember it, it sounded so farfetched at that point in time decades ago – transparent computing seems pretty far away from where we stand today, but we have always believed that the future of computing is what we make it. And we believe that the developers, our developers around our platform, can embrace a new paradigm for computing, a paradigm that users want us to go solve. And we look forward to being your partner for the next era of computing, and delivering it transparently. Thank you.

Male Voice: Ladies and gentlemen, the technical sessions will begin at 10:30.

[End of recorded material]