

AMD Opteron™ processor launch
New York
April 22, 2003

[Opening Video]

DR. HECTOR RUIZ: Thank you. On behalf of everyone at AMD, I want to welcome you to the historic Altman Building, and to New York City. More importantly, I want to welcome you to the future of computing. Mark this date on your calendar because with today's announcement, you are being given a view into the future. Not just the future of AMD, not just the future of microprocessors, but what we believe is the future of computing. The future of what qualifies as technology, or to be more specific, innovation itself. You see, we in the technology industry have done a lot of impressive things in the past few decades. Some of them have been very good; some of them not so good. There are times, especially when the economy gets tight, that our industry has introduced, for the lack of a better phrase, technology for technology's sake. Technology is bigger and faster, but something is missing. What is missing is the customer. It is time for all of us in the technology industry to change our ways, to adopt a policy that no new technology without real customer input or real customer benefits should be tackled. This is our mantra at AMD. We call it customer centric innovation, and it drives everything we do.

You see, we believe that our customers are smart. They know what they need to be more productive. They know what they need to be more competitive, to be more successful; and all we have to do is listen. As you saw in the opening video, the simple act of listening is at the center of AMD's customer centric approach. All that listening is what brings us here this morning to introduce you to a new class of computing that leaves no one behind. Starting today, business customers can continue to leverage their 32-bit installed base and they migrate seamlessly to the power and security of 64-bit computing.

Why is 64-bit computing so important? Because it is inevitable. The volume of data created in the world today doubles every year; and the ability to exploit it grows more difficult every day that goes by. Whether with CRM solutions or real-time online gaming, customers need access to 64-bit computing power. The transition to pervasive 64-bit computing is really not a question of if, but when. That's all over the enterprise as the first point of adoption. They have used 64-bit technology for a very long time, yet the need for more pervasive 64-bit computing in the enterprise remains unsolved.

With shrinking budgets, IT decision makers need to be more careful about what they change. Change must be anticipated, expected, and embraced. But the cost of change should be minimized. New technology must not introduce new barriers—it should knock them down. Remove the barriers between 32-bit and 64-bit computing and you are opening the doors to a totally new wave of computing. You smooth out the wrinkles in your IT investment strategy, you simplify business decisions.

This is the promise that we make; and to deliver on that promise, we have developed the AMD Opteron™ processor - a path to the future of computing. This morning, a few of our customers and partners who are implementing AMD Opteron advanced solutions are going to join me here on stage. We will listen as they tell us about their own successes. We will see how the AMD Opteron processor is enhancing such applications as large databases, ERP, CRM applications, and even the digital content for the next Hollywood blockbuster. We will hear how the Microsoft community is importing the AMD processor, and we will see which OEMs are developing solutions based on our new X-86 64-bit architecture.

We're so pumped up today, and as we remove the barriers between 32-bit and 64-bit computing, we are opening the doors to new innovation. The AMD Opteron processor promises to be our breakout performance. So what does that mean?

[Breakout Performance Video]
Bob Costas enters stage...

RUIZ: Bob, we thank you. We appreciate you coming out this morning and joining us. I know that in your role as anchor for the Olympics and covering sports over the years, you witness a lot of history first hand. Are there any breakout performances that have been particularly memorable, in your opinion?

BOB COSTAS: Well, I was talking about this to some of the AMD people, not necessarily confined to the Olympics or to sports. But I think the first time I saw Julius Irving, Dr. J., in the old ABA, the moves that Michael Jordan and others made that, subsequently, he was inventing at that time. Others may have taken it to a different level, but he was the first to use that kind of creativity at that level in basketball. The first season of Saturday Night Live back in 1975 on NBC, where a group of young kids who were television mavericks broke through and changed the way television comedy was presented. The first time we saw the Beatles on Ed Sullivan. We saw Richard Pryor take where George Carlin took comedy and turn it into social commentary as well. Or Billy Jean King, not just performing at a high level, but breaking barriers for women and changing peoples' understanding of what women could do in terms of sports.

RUIZ: That's great. I know you are a rock and roll fan. I know that you have enjoyed music in the past. One of the breakout performers that we saw in the video was the Les Paul marriage of technology and music. Now, I'd like to present to you, since you are such a big fan, the Les Paul exclusive guitar made with the AMD Opteron colors.

COSTAS: And who knew that Les had AMD in mind way back when? Who would have thought?

RUIZ: Amazing, isn't it? Well, Bob, I know you are going to enjoy this. One of the exciting things is, we are auctioning a guitar just like this on eBay as we speak and all of the proceeds of this auction—and I would encourage you all to participate—

are going to benefit the Mr. Holland's Opus Foundation, which I think is a very worthwhile cause.

COSTAS: Great. It absolutely is.

RUIZ: So Bob, I hope you will enjoy this.

COSTAS: I will not inflict this upon any of you, but thank you all very much. Thank you, Hector. Thanks a lot.

RUIZ: You know, Bob mentioned that it is sometimes difficult to recognize that what you are witnessing is a breakout performance. Often, it is not until later in the context of history that we realize the significance of the event. Those of us here today are lucky because what we are about to see will leave no doubt that for the technology industry, the AMD Opteron processor is a breakout performance. We are here today as a result of a lot of hard work by thousands of AMDers, determination, great research, and a vision. It's the vision of what computing should be, what it can be, and what now it is. To talk more about that vision, I would like to introduce a visionary in his own right. Please welcome the Founder and the Chairman of the Board of AMD, Mr. Jerry Sanders.

JERRY SANDERS: Thank you so much. This is great. Wow. Since AMD's founding in 1969, our vision has been to provide building blocks of ever increasing complexity to reduce the cost, improve the performance, and shorten the time to market for OEMs of computation and communications equipment. The microprocessor is the ultimate building block. Its evolution has defined the computation industry. We have progressed incredibly from the first microprocessor, a simple four-bit computing device employing about 2,000 transistors to today's announcement: 100 million transistors. The AMD Opteron processor we are formally launching today contains 100 million transistors. It has 100 million transistors on 130 nanometer technology on a die of only 193 square millimeters in size, which is smaller than your smallest fingernail. Employing our state-of-the-art silicon on insulator process, and featuring an integrated memory controller and our industry leading HyperTransport™ technology, the 64-bit AMD Opteron processor is the technological tour-de-force. 100 million transistors, an awesome number. Yet as we will be seeing, never in the long history of Microsoft compatible processors will so few do so much for so many.

For it is not so much what AMD Opteron is but what it does that merits our excitement. It will bring PC industry economics to even the most popular servers. You see, I believe in something I call true innovation, where the definition of true innovation is very simply making the greatest possible technology available to the widest possible audience. I believe that the best technologies on Earth are of limited use if they are only available to an affluent few. We in the technology arena have a responsibility to bring the awesome power of technology to as many people around the world as we can reach. It has been AMD's focus in the PC arena, and it is what we intend to do in the server space as of today.

So what is it about the AMD Opteron processor that allows us to deliver innovation to the enterprise? In a word, AMD64. AMD64 is the next evolution of the industry standard x86 platform. It is the x86-64 instruction set, and it's the differentiated added value in our AMD Athlon™ 64 processor family, which we are launching in September, and our AMD Opteron processor family, which we are here to launch today. For customers, AMD64 provides a seamless, simplified migration path to 64-bit compatible computing, which is compatible without compromise. 32-bits for no additional cost. Best-in-class 32-bit performance today, 64-bits when you are ready. With AMD64, we are launching a 64-bit technology that will let the customer and not the supplier decide just when and how 64-bit power will be implemented. AMD64 is designed to span across enterprise servers, workstations, desktops, and even mobile devices. It has the potential to create the largest architectural footprint in the computer industry, bar none. For the industry, AMD64 will spur further innovation by providing software developers a new landscape for development. Ladies and gentlemen, AMD64 is true innovation. AMD64 is the present and future of the x86 platform. The future of computing is 64-bits. AMD is the link to the future. Thank you.

Now, I'm not the only one who sees AMD64 and 64-bit computing as a path to the future. To give you a glimpse of the world this powerful new technology will enable, we have invited a handful of well-respected visionaries to spend a few moments describing what we can expect from a universe of pervasive 64-bit computing. For the next few minutes, Dr. Robert Ballard, a scientist and explorer who discovered the Titanic; Craig Venter, who lead the Human Genome project; and virtual reality pioneer, Jaron Lanier, tell us about how 64-bit computing enables them to learn more about the planet we live on and even create entirely new worlds.

[Visionary Video]

RUIZ: The future that Dr. Ballard, Mr. Venter, and Mr. Lanier envisioned is here today. To tell us how AMD is delivering through innovation with the AMD Opteron processor, please welcome Senior Vice President of AMD's Server Business Segment, Marty Seyer.

MARTY SEYER: Thank you, Hector. I feel very honored to be here this morning. It is a big day for AMD. It's also a very important day for our industry. So far, we have seen and heard a lot about the future of computing. The future is all well and good, but what about today? Today's technology decision makers, whether they are enterprise CIOs or small business leaders, have to make very tough investment decisions in one of the most hostile business environments in recent history. If you listen to them, they will tell you that they need a few simple things. For example, "Help me use IT to make a difference in my business. Let me do more with less. Less cost, less disruption. Why do I have to pay a premium for the next generation of performance?" What they are saying is, "Help me to get the most out of today's technology and prepare me for the future." In short, they say, "We need your help simplifying our business."

Today, we launch the AMD Opteron processor for servers and workstations to do just that. Beginning today, we are making available the AMD Opteron processor models 240, 242, and 244, the absolute highest performing 32-bit two-way server and workstation processor in the market. That will also deliver industry leading 64-bit price performance. That is what AMD means by breakout performance. Later this quarter, we will roll out the 800 series of AMD Opteron processors for up to eight way capable servers. Also the 100 series, for one way capable servers and workstations. As of today, hardware solutions are available from such technology leaders as Arima, MSI, New Isis, among many others, that are providing these solutions.

Also, I am very pleased to announce the validated server program. It's an industry partnership that will deliver complete server solutions based on the AMD Opteron processor later this quarter; and would allow a very fast time to market for our partners. That's just one more way that AMD puts customers first, ensuring stability and compatibility. Already the industry is recognizing that the AMD Opteron processor is changing the playing field. IDC has historically tracked server market categories, referred to as IA technology, a reference to an architecture that is solid but is simply running out of steam. Well, I am happy to report that in the next quarterly forecast, IDC will reference x86-32 and x86-64 to reflect the new playing field, a playing field that now includes the AMD Opteron processor.

You know, this is just the beginning of a great trend. With today's launch, AMD makes one simple promise. We promise the AMD Opteron will simplify business. Simplify business by removing all the barriers to 64-bit computing. By protecting the huge investments that IT departments have made in their hardware, their software, and their IT staff, and by being flexible. The AMD Opteron processor is exactly what our customers are asking for; and it's what we're here to deliver. A new class of computing for businesses that is compatible, reliable, and secure.

We're not the first company to introduce the 64-bit processor, as you know. We are the first and the only company to introduce a 64-bit processor that excels at running over 10,000 32-bit applications. This is significant. Quite simply, AMD is giving small, medium, and enterprise customers a 64-bit processor using industry standard technology that permits simultaneous 32-bit and 64-bit computing for the first time. 64-bit computing is no longer a dilemma, it is an opportunity. And it is no longer beyond anyone's reach. That's because the AMD processor will change the way we think about servers. It will drive industry standard volume economics and enterprise computing, something that no other company can deliver.

Relative to Itanium, the 800 series of AMD Opteron will deliver an order of magnitude improvement for four and eight-way price performance. Unlike today's 4P servers, the AMD Opteron processor 800 series pricing will actually enable 4P, high performing, 64-bit computers priced below \$10,000; and begin a fundamental transformation of server economics. This is truly breakout performance, especially for the 64-bit world.

With regard to the 64-bit competition, watch out. Even the paranoid may not survive. But listening to your customer, it's not just about cost. It's also about overall system performance. Let me address that. The AMD Opteron processor will power the world's highest performing two-way and four-way servers. As a matter of fact, if you had the chance to see the *Wall Street Journal* ad this morning, the headline reads, "We did it!" You may have noticed an ad for RackSaver, who is one of the leading providers of super computing clusters. In that ad, RackSaver declared that, according to independent testing, its Quatrix 64-server processors achieve the absolute highest TPCC score ever for an x86 4P server. It also had the dollars per transaction cost lower than any other server in the market place. This is absolutely significant. The AMD Opteron has just enabled companies to cut their cost per transaction by almost as much as 50 percent. This kind of breakout performance is music to the ears of all the IT organizations around the globe.

That's the 32-bit statement, but now I want to let you in on the secret that we at AMD have been keeping. That is that the AMD Opteron processor outperforms other processors, not just 32-bit but also 64-bit platforms based on independent benchmarks and tests. For example, if you look at the chart here, SPECweb[®]99 ssl. It is a benchmark that measures secure web server performance. As you can see, on a 2P server based on the AMD Opteron, it outperforms the highest published results from both Xeon and Itanium. What about in a purely 32-bit environment, as shown here with the SPECint[®] Rate2000, the AMD Opteron beats the highest published results from Xeon by 37 percent and from Itanium by an astounding 72 percent. The AMD Opteron processor provides unparalleled performance across both 32-bit and 64-bit platforms. If you are looking for performance, this is as good as it gets.

Speaking of leadership, Computer Associates (CA) is a leader in system enterprise management software providing business critical technology that shapes the way business is conducted around the world. CA's client base runs every type of application imaginable on a variety of platforms. One thing that they have in common is their desire to lower the total cost of ownership. This is what CA discovered when it tested the 32-bit and 64-bit computing on AMD Opteron processors.

[Computer Associates Video]

SEYER: As we just saw for the enterprise, there is no better choice than the AMD Opteron processor. Effective immediately, the industry has changed forever. It's obvious that the industry is responding to AMD's commitment to our customers. By the end of this year, AMD will sell more AMD 64-based platforms than our competitor has sold since launching its 64-bit platform years ago. Why? Because AMD gives customers exactly what they ask for. Why will the AMD Opteron processor succeed? Simply put, we did it right.

When is this breakout performance available for you? Today. AMD Opteron processors are available today to simplify your business. They deliver the absolute best 2P and 4P performance; and now customers can run both 32-bit as well as 64-

bit applications on the same platform with industry leading performance. As this event confirms here, we've earned widespread industry support for the AMD Opteron processor. Today, 64-bit computing is available to everyone. There are no more barriers. AMD has just set new standards for price performance, and we have reduced the cost of computing significantly.

New applications are also imminent. We have positively disrupted the 32-bit world and enabled 64-bit computing. I am very pleased to tell you that with the AMD Opteron processor, we have changed everything. Thank you very much.

RUIZ: Thank you, Marty. It is true that the AMD Opteron processor already enjoys widespread industry support that cuts across many different types of industries, including the entertainment industry. The digital images that directors like George Lucas create are as life-like as any actor. Filmmakers know that if you can visualize it in your mind, it can be visualized on screen. Here today to share with us how 64-bit computing has changed the way that films are made is the Pre- Visualization Supervisor of *Star Wars-Episode III*, from JAK Films. Please welcome Dan Gregoire.

DAN GREGOIRE: Thank you. Pre-visualization is the art of visual story telling, and it's my department's responsibility to make sure that George Lucas' ideas get translated so that he knows whether or not his ideas are actually working in a digital sense, in a movie sense. He can take the movies that we create for him early in the process and use them to maintain a higher level of creative control over the entire production process. That way, there are no questions about what he really wants in the end. So today, I am here to talk to you about why JAK Films is committed to using AMD's 64-bit AMD Opteron processors in the production of *Star Wars-Episode III*.

First of all, the back-end. Servers in one view, rack mount, render nodes. We created over 4,000 shots for *Star Wars-Episode II*, and we intend to do a lot more for *Episode III*. That's a lot of data to move around and we are confident that with AMD's 64-bit AMD Opteron [processor-based] systems, their scalability will keep up with our production process. The 1U rack mount servers, with their eight gigabytes of addressable RAM will enable us to handle much larger files much faster than we ever have been able to do before. Of course, the same is true on the desktop. I actually have a quick demo over here for you, if you could move the monitor. I just want to show you this shot for context. It's a shot that we created for the *Episode II* DVD. It's a little digital R2D2 here behind our main characters, and a lot of extra digital elements behind here. What's really important is 32-bit Maya running in the background. Now, this is a 64-bit workstation provided by Boxx Technologies, with an NVIDIA FX2000 card, fully functional on the 64-bit platform. It's completely lit, shaded, textured, and running absolutely seamlessly. That's what is so beautiful about AMD's 64-bit architecture. You can take advantage of the software that takes advantage of 64-bit without having to throw away all of your other 32-bit apps. This is an absolute boon for the effects industry and it's very important for us.

Not only for the effects industry, but also for the film industry. As you know, George Lucas is an incredible champion of digital cinema. He is a leader in the field. AMD's 64-bit architecture finally provides a platform that can deliver cinema quality HD content not only at the theaters but also to people's homes. Today with me, I have an HD reel of *Episode II*, which I believe for the first time is being publicly played on an AMD [processor-based] 64-bit workstation. Can you please roll that?

[*Star Wars: Episode II* Video]

GREGOIRE: Thank you. Thank you, very much. Hector, thank you.

RUIZ: Thank you, Dan. Wow, I wanted to stay there and watch it. It was exciting. Thank you for being with us, Dan. That was great. We've just seen how some truly amazing things can be done when the barriers to 64-bit computing are eliminated. Let's see how Europe's leading computer company plans to help destroy some of those barriers for their data intensive customers. Fujitsu Siemens is partnering with AMD to develop a new line of 64-bit workstations, and we'll hear on this next video tape from Mr. Peter Esser, Executive Vice President of Fujitsu Siemens Computers.

[Fujitsu Siemens Video]

RUIZ: Obviously, we are very excited and proud that Fujitsu Siemens has signed on to produce AMD Opteron-based systems for the next generation of graphics workstations. I mentioned earlier that the 64-bit future is being driven by the rapid proliferation of data. Therefore, it will not be a surprise to you to find out that one of the most important beneficiaries of 64-bit processing power are the developers at IBM, and specifically the developers. And from IBM, I would like to ask you to help me give a warm welcome to the DB2 Director of Database Technology at IBM Canada, Mr. Bob Picciano.

BOB PICCIANO: Thank you. Well, I am honored to be here today. At IBM, we believe in partnering to help bring real solutions to the market place that add customer value, real business value. We also take great pride in being leaders in delivering technology that helps accelerate the time to value for the customers, lowering TCO, helping them get up and running more quickly. We saw DB2 on AMD Opteron as a compelling platform in helping solve the demanding information management challenges of today's marketplace. That's the reason we were the first database on the 64-bit platform. It is absolutely compelling for the reasons that you've been hearing about this morning. Today, I am pleased to make a few more announcements that I believe will help extend DB2's leadership with both technology and our place in the market.

At the beginning of the year, we started our AMD Opteron beta program for DB2 on Linux. Over the past several months, we've had several customers and partners working with us on this advanced technology to get in a position to deploy it for market. Today, I am pleased to announce that we are really opening this up to the

open market, to the general public, and we are making this beta available on the DB2 website for download from the public. I am also very pleased at DB2 being the first database on 64-bit AMD Opteron for Windows®. We are going to be giving a demo of this technology. We are going to be showcasing it right over here in this very building today. So we are very excited about that. Finally, to demonstrate our commitment to the platform, we will make DB2 generally available for AMD Opteron over the next few months.

Now, we just released that our customers will be able to deploy the world's fastest, most scalable database for their mission critical applications on the AMD Opteron. This combination is a very compelling combination that allows you to scale between one or ten-way nodes, or a hundred nodes, or even thousands of nodes with DB2, to help drive information infrastructure. As Hector mentioned, we are the market place leader in data management software. Last year, IDC declared that DB2 was the leading database for the Linux marketplace, with over 56 percent market share on Linux. A part of that leadership program is a partnership program that does validation.

On behalf of IBM, I give to you for this very important and compelling launch, I've taken the liberty of actually running the certification program for AMD. I put my resources on this to get everything ready. With this certificate, I am officially declaring that DB2 on Linux on AMD Opteron is ready for business.

RUIZ: Alright! Thank you. That's real stuff. Thank you, Bob. On behalf of all of us at AMD, I am honored to accept this validation certificate. We are excited about creating a new future together. You know, our new technology is only as good as the software that employs it. I am happy to report that the software community literally cannot wait to get their hands on AMD Opteron and experience firsthand what 32-bit compatibility with 64-bit capability means. Here are a few highlights:

[Video]

RUIZ: Microsoft, IBM, DB2, SuSE, Red Hat, Oracle—some pretty impressive names with some pretty impressive things to say about AMD Opteron. It appears that we are off to a very good start with the ISV community. Here to say a little bit more about Oracle's interest in the AMD Opteron is the Vice President of Enterprise Platforms Division at Oracle Corporation, Mr. Brom Mahbod.

BROM MAHBOD: Good morning, and it's great to be here today. Today, 32-bit x86 architecture and RISC processors are the de facto standard in the industry. Customers are demanding more and more power from their database servers, and so they are actually pushing the drive through for more capabilities. Oracle is number one in technology and databases. Its leadership in 64-bit computing that was there several years ago on 264, and the exciting flexible architecture that AMD has proposed with its 32-bit/64-bit computing is the wave of the future.

Customers do not want to spend a lot of money up front on their computing infrastructure. They want to pay as they grow, provide incremental growth without any up front cost. Oracle in combination with AMD is a solution to this.

What the Oracle technology offers is a scalable architecture to Oracle clusters. With this clustering technology, you get liability. If one server dies, other servers take up that work. This is truly symmetric clustering technology based on sure disk architecture. It is secure. Oracle database is the only database that has got 15 security certifications, independent security evaluations. It is flexible. You can easily move Oracle based applications from 32-bit to 64-bit when you are ready, and it's very high performance. You have already seen excellent performance on 32-bit and we are seeing an improved performance on 64-bit. Also, when you look at the entire Oracle offerings, Oracle Enterprise Applications and so on, what we have is a combination of very complex software, some 32-bit and some 64-bit, and this is the ideal platform, to grow from 32-bit to 64-bit with a mixture of those applications. Also, the investments of our customers are not lost when they are ready to go to full 64-bit computing. Thank you very much.

RUIZ: Thank you. In our visionary video, we heard from three luminaries who look at our role in a very different way. From exploring the vast depths of the sea to investigating the universe of our genetic code, another company that uses high performance computing power to map the world we live in more accurately is Veritas. I would like to show you another video that will give you a bit more insight into this impressive company.

[Veritas Video]

RUIZ: As a leader in high performance computing and super computing, IBM is a company dedicated to delivering comprehensive solutions to their world class list of customers. To share with us how Opteron based platforms fit into the strategy, please join me in welcoming one of the top executives in IBM Systems Group, IBM's Vice President of E-Services, Mark Shearer.

MARK SHEARER: Good morning. It is my pleasure to be participating in today's event. This morning, we've heard about breakout performances. Now, what I'd like to do is share IBM's perspective about the impact that AMD's technology will have on this high performance computing solution space. We are really excited to see the AMD Opteron transition from the development phase and into the world of scientific and technical computing. Today, many of our high performance computing customers are increasingly looking for new solutions to build affordable, compute intensive, scale-out clusters. This evolution has created a demand for innovative technologies that ensure the investment protection, and enables our customers to optimize their existing infrastructures while managing their tight IT budgets.

We believe that the AMD Opteron provides customers with a natural evolutionary path from today's industry standard 32-bit environments, empowering them to gracefully migrate their 32-bit systems into the 64-bit world. Now, IBM believes

that the AMD Opteron offers compelling performance at an affordable price. This is a key benefit for customers that are engaged in demanding application areas like oil exploration and digital rendering that we saw earlier. With its 32-bit and 64-bit compatibility and price performance, we believe the AMD Opteron offers a significant innovation that customers have requested for high performance computing applications.

So, why is this innovation so important to IBM? Well, IBM ranks number one in worldwide revenue for high performance computing. According to industry rankings, IBM is also number one in super computing. The comprehensive IBM super computing offerings are utilized in a wide variety of applications, in scientific applications, in business applications. And some of these applications include environmental prediction, nuclear stockpile stewardship, product design from large aircraft to cell phones, medical simulations, genomic research, and drug design. IBM is committed to delivering industry-leading solutions that address this broad spectrum of customer demands. Today, we are responding to our customers in this space who have been asking us for an IBM solution based on the type of technology that the AMD Opteron represents. This is why IBM has decided to support today's event, announcing our intention to deliver an AMD Opteron-based server platform.

Now, our support for the AMD Opteron also reinforces IBM's commitment to provide customers with the most comprehensive, flexible solutions in the market. Today, we are also announcing that we are going to make AMD Opteron technology available in our super computing on-demand facility. So IBM plans to enable customers to build their own scale-out clustered systems; and will also provide access in the future to huge super computer clusters on demand, where clients pay for the processing power based on how much capacity they need and for how long they need it. We congratulate AMD on this exciting announcement, and we look forward to seeing this technology available. Thanks very much.

RUIZ: Thank you very much. We appreciate it. I would like to introduce someone right now who certainly recognizes the importance of pervasive computing, from a company who has almost single handedly brought affordable computing to everyone. To help explain how 64-bit computing fits into Microsoft's strategy, please welcome Senior Vice President of the Windows Edition of Microsoft, Mr. Brian Valentine.

BRIAN VALENTINE: Thank you. I have been a product guy in this industry for 20 years, and these are the weeks you live for. Not only do we have AMD announcing their AMD Opteron processor this week, we are also launching Windows Server 2003, which is the next generation Windows Server platform force that has 64-bit computing natively built into the platform for the first time in the server, and also in the workstation release we will be doing. Before I get started, when we started working on this project many years ago with AMD—we've been there from the beginning with this project—they came to us and they said, "Gee, we'd like to do something new." I said, "Well, that's interesting. What do you want to do?" They said, "We'd like to do a 64-bit processor." I said, "Well, that's kind of interesting.

What else?" They said, "Well, we'd like it to be 32-bit compatible." We said, "Whoa, that would be pretty interesting." And they said, "We'd like it at a price performance level that makes it pervasive and can be used in any workload in the industry in a very cheap way." We said, "Oh, that's very interesting." So we've been working together with AMD since the beginning on this project, and it's been an exciting project all the way through.

First of all, I'd like to congratulate Jerry, Hector, Dirk, and everybody else at AMD for delivering on what you started out to do many years ago; and I'd just like to say congratulations for that. Alright. So 64-bit computing, we think it's the wave of the future. Up until this point, 32-bit is still very pervasive but the beautiful thing about the AMD Opteron processor is it's a 32-bit processor also. So don't forget about that. We've optimized Windows Server 2003 and XP, and the future versions of Windows will be optimized still for 32-bit computing and will be optimized to run on the AMD Opteron as much as any other 32-bit processor out there. The same thing with 64-bit. Like I said, this is the first solution to the server we've done that is 64-bit compatible, 64-bit design, 64-bit code throughout the entire server. So this platform, when we ship it and launch it in two days, will be 64-bit enabled from day one. So as we go down the validation phase for the AMD Opteron processor there isn't a lot that we have to change in the platform and it isn't just about scientific computing. It isn't just about database computing. It's about making a Windows server and a Windows desktop run in 64-bit in every workload that any customer might want to run it in. That's what it's all about. And 64-bit is the wave of how we get to that pervasive high end computing model today; but also will become pervasive in just about every workload in the future as we move from 32-bit to 64-bit in the world; and the AMD Opteron is a great step to help us get there. We really like the chip.

From Server 2003, we've added a couple of new packages, SKUs, or workload scenarios. In one, we've added the Web server capability for the Web edition, and also small business edition server for Windows 2003. So we've actually expanded our server line that we'll be talking about on Thursday to really talk about how we can take the server to new workload scenarios and really optimize around some of these workloads that are important for the customer. Not just database, not just scientific computing, but all computing. Server 2003 had been by far the broadest server platform tested before we released it to manufacturing that we've ever had. We've had over 600,000 downloads. We've had over 600,000 users on this thing. We've got over 10,000 web servers that are Internet basing today running in production. We've had hundreds of customers that have been running in production, so we think it's the most tested platform we've got available today.

As far as workloads, we tested it in 64-bit scenarios in all of those workloads. So like I said, it's the first release that we've done that native from the beginning 64-bit enabled. As I said, AMD Opteron processor not only delivers great 32-bit performance but we are seeing some great 64-bit performance out of the AMD Opteron processor and the server release that we will be doing. This summer, we'll be releasing the beta version of the server, and it's our goal—of course, we don't release servers until we absolutely have the highest quality there—but it's our

goal that we will release the manufacturing, a version of Windows Server 2003 this year that supports the AMD Opteron processor; and then with that comes the additional apps and things like that that Microsoft will deliver. So as long as our testing continues in the way it's been going, we will deliver that release this year.

The other thing I'd like to talk about is not only about the performance capabilities, but the compatibility capabilities. We are seeing some great compatibility in running 32-bit applications on top of the Windows 64-bit platform. So we are also optimizing not only to run great 64-bit applications, but we are also optimizing Windows to also run 32-bit applications even better than what you can perhaps see in certain memory constraints or certain processor constrained scenarios on Windows 32. So we'll make 64-bit not only great for 64-bit applications, but we'll make it also run 32-bit applications in a great way. I'm not just talking about server applications, I'm also talking about desktop applications.

So what we are seeing is great. What we're seeing has been fantastic. The project that we worked on for years now with AMD had finally come to fruition today with the launch. I am just here to say thank you very much and we'll tell you a lot more about Windows Server in two days. I'm kind of restricted on what I can say before the launch, but it will be a great message; and I am proud to be here with AMD today to talk about this. So Hector, thank you.

RUIZ: We appreciate it very much. This morning, we've heard from a lot of people representing various interests, needs, and visions of the future. The one thing that binds us together is the idea that computing needs will continue to grow more complex and more demanding. They will agree that the only way to meet that need is through 64-bit computing. With our introduction of the AMD Opteron processor, we offer all these companies a way to realize their vision, as they maintain control over their precious and substantial investments in existing software applications and hardware. By opening the door between 32-bit and 64-bit computing, we promise customers and partners that we will simplify the business. I want to thank all of you for coming this morning; and I would like to offer special thanks to all of our partners and customers, whom I'd like to ask to come up to the stage here. Brian, Bob, everybody, if you would come up here and join me. Gary, please come up. All of you have helped make this possible, and we want to thank you.

As we wind things down this morning, let me just say that this is not the end, this is the beginning. The beginning of the new era of computing. You will see the next installment in a few months as we bring the same promise of 64-bit to the consumer when we introduce the AMD Athlon 64. Now, let me open the last door, which is right here to my right. It's the lobby into our partner pavilion. I invite you to stop by and see how our AMD Opteron processor is ushering a new class of computers. Thank you.