

ASI Presents Supermicro IOT to 5G

0:04

Good morning, everybody. This is Kent Tibbils with ASI, well welcome everyone to the second week of our Technology Summit.

0:13

And for actually, our four days, so our core set of sessions and presentations, which today we're joined by Super Micro and we have John Ferguson, who's the Director of Embedded IOT and five G who's going to be running through a presentation for us.

0:31

Before we get started with John, I just wanted to make a couple of quick announcements.

0:37

We're going to go through the presentation today and just like the presentations last week if you guys have questions there's the question box on your goto Webinar menu board that you can just click on that and you can go ahead and type your question. And then at the end we'll be sure to ask John the questions as they come in.

0:58

So as we go through the presentation, if you got a question, go ahead and type it in, and we'll be sure to get that answered. Answer to John.

1:07

Also, for today, we have prize that we'll be giving away for the attendees and attend the seminar session today.

1:15

We're giving away something that everybody can use these days, with kind of our do everything from home environment, We've got A raising and lowering automated desk, so it does, so you can raise or lower for standing with a chair and in addition to that, we're going to be giving away 10 additional, \$50 American Express cards. So we've got a bunch of stuff we're going to giveaway today for hanging in with us on week two of our technology summit.

1:48

So with all of that said, I'm gonna go ahead and turn everything over to John.

1:53

John, take it away.

1:58

So hey hi guys. It's nice to be joining you here today for the ASI Technology Summit. My name is John Ferguson. I'm Director of the Embedded IOT and five G.

2:10

located here at supermicro headquarters in San Jose, with me here in the conference room is Tony Chen. Tony, want to introduce yourself. Hi, everyone. My name is Tony Chen and the System Product Manager called Simple Michael, also, based in San Jose, California.

2:26

And I don't know if Jeff is online yet, but, Tony, you want to introduce yourself.

2:32

Excuse me, Mike, do you want to introduce yourself?

2:36

Yes. My name is Mike, I am the senior sales manager responsible for ASI.

2:44

Yeah, thanks, Mike.

2:46

Yeah, so we'll get started here in a minute, but I just wanted to introduce myself. I come from a long background of channel.

2:55

In fact, I started my career back in Bell Micro with Brian Clark at Art Bias, and Theresa Sousa are still some of my best friends today.

3:07

And then, I also wanted to just add that I worked at ASI back from 2008 to about 2010, so I've got a special place in my heart brain, scientist, special place, for the Channel one.

3:20

I understand the channel's needs, and look forward to this presentation and look forward to your input and questions at the end here. So with that, we'll kind of get started.

3:32

I just kinda wanna give an overview of what Supermicro looks like today and where we're at.

3:39

As we said, we're founded here in Silicon Valley and in fact, we're a couple of exits down the freeway from your corporate headquarters in Fremont. So we're very close neighbors here.

3:51

In fact, we look forward to, after all the cope with restrictions are over. We look forward to have it.

3:58

You guys visit our campus here in San Jose, we've got some great tools that are very usable for partners and customers that demo rooms.

4:07

We've got some technical ventures where we can do evaluations of qualifications, and we can get into some of that stuff as we go through this, but I look forward to inviting you to join us here on site in San Jose when that's appropriate.

4:24

Just kinda run through this real quick.

4:25

We've finished our fiscal year here last month at the end of the day. We finished up at around three point three billion.

4:34

We have global operations in around, about 100 different countries.

4:40

We'll go through some of that.

4:41

And what the importance of that is as we get through some of this presentation.

4:47

one of the things I wanted to add, which is really important, is that we are now about two million square feet of manufacturing space globally, And about a million square feet of that is right here in San Jose.

5:01

And we are, we have manufacturing here, and we also have engineering here.

5:05

In fact, we have about 1800 engineers on staff here in San Jose that develop products and also support any bio, software, hardware issues that happen to come up. And they are a pretty smart group of people.

5:23

one of, the biggest part of Supermicro success has always been, our engineering are first to market in our technology.

5:32

Just kinda give you an idea of the scope.

5:34

Supermicro, we did about 102 million server and storage nodes in FY 20, which ranked in the top five server vendors for IDC.

5:45

And again, we pride ourselves to be, first to market with the new technology.

5:49

We need the enterprise around the data center in Cloud AI.

5:56

We've got a long history of some real technical advance.

6:06

That went wrong way. one of the other things that I'd like to point out about super my course, we have, our slogan is, Better, Faster, and Greener.

6:16

one of the real focuses of our corporation and our CEO is that we remain one of the greenest, um, vendors in our space.

6:28

We look at hardware in a 12 year longevity life cycle.

6:33

We look at re loading all of the technical op updates in every three years.

6:41

So, R, hardware and software, cycling can result in about 38% in CapEx, over the life cycle of that 12 years.

6:52

We claim one of the lowest power review requirements in the server market.

7:03

Very important, I don't think there's a customer today that is concerned about power usage, so it's, it's always a great tool for us when you can out your, your equipment is just the best in the industry for power consumption.

7:17

This is just a quick slide.

7:19

We recently won number one, green compute. We, with partnering with preferred networks, we developed a supercomputer that has 48 nodes at this seven.

7:32

You rack space and it is number one in the world with regard to power efficiency.

7:40

So, we're very proud of this. In fact, we've won this award a few times.

7:47

Again, another focus of our company.

7:52

Just kind of a quick slide about why Supermicro are the advantages of working together with Supermicro, with partners System Architecture. The first bullet point there we are our approach to hardware is a building block approach.

8:08

We use common components for motherboards, for add on cards across all of our hardware platforms, which gives us some real advantages of cost, and agility when we develop products.

8:24

So this building block technology allows you to develop on platforms and give you exactly what you need as many options as required for all IO or workloads, essential hardware workloads.

8:42

We are worldwide support. We will get into some of the worldwide support and what that means to us.

8:46

But we also are covering some of the emerging technologies, and merchants, emerging requirements today that are created by what's going on in the world today would cope at 19.

8:58

And our businesses are happy to change how they support customer and customer experiences, and will talk about some of those things as we get through here.

9:10

This is a quick slide on Supermicro, global services, and the one thing that I wanted to highlight here is that we have four levels of service that we offer, or global service, and support even, down to 0 to two hour response time.

9:29

So, for any mission critical customers that you may have, we have a service level agreement across the globe that can fit different business requirements.

9:40

Some of these things are very critical today, and we are leading edge of support in any of those mission critical kind of business assets.

9:51

Just getting into some of the Supermicro hardware.

9:54

I know there's a lot of stuff on this page, but I just wanted to point out that Supermicro has one of the broadest portfolio of hardware in the industry.

10:06

We offer everything on the top line from blade, from high density, compute and storage of blades to rack Mount through our node server. Some of what were famous for our Twin and Big Twin our architectures.

10:20

And also, some of our GPU servers are some of the densest in the industry.

10:25

And along the bottom, there is that Edge computing portfolio that we'll kind of get into as we move through this storage this presentation deck.

10:34

one thing that I do want to highlight on this slide is in the at the top of the slide here, we've got some NEB's compliance.

10:45

Hardware, so these are depths three.

10:49

So there's a rugged servers.

10:52

These are short Depp's servers there, in the case of Hyper V, it's front loading.

10:59

So it's a two, U, two socket short depth, and it's also ... compliant. So it's heat temperature, and also drop it Vibration. All the rest of the characteristics that are required, from level three.

11:14

And then the other server that is noted in Level three is the Ultra three, which is the product it's currently available in, in the sky, in the Skylake.

11:26

Family of processors today. So I just wanted to point out that there are other products in SNP. Level three.

11:34

Category of servers.

11:38

Just a quick, little roadmap of our hardware in the Embedded product family.

11:45

one of the things I'd like to point out here on this slide deck is, if you notice over on the right side, I just wanted to make sure we highlight, is theirs.

11:53

We have the AMD line of Epic about 8000 products available. This just highlights a couple of them, but I just wanted to just make sure that you knew that we were offering a wide range of AMP solutions today.

12:09

This slide deck goes across the top, in panel products.

12:13

Products that are very quiet, go into a wide range of options in opposite environments, where you have to be quiet, have a quiet box, Compact box, the next line down.

12:28

Those can have, could tolerate a little wider range of temperature requirements, because they are their fan. Cool.

12:36

So there's just so then these also go across from CPUs, starting from the atom based, all the way up to the latest Intel Xeon scalable processor.

12:51

So the idea here is, just there, there is a a supermicro solution across whatever workload requirements your customers may have.

13:02

And as we get through this presentation, I'll show you how that's going really help us here.

13:10

This is another slide I just, we just talked about, the next compliant product that Supermicro has. On the right hand side here is the ... Ultra.

13:19

two, which are the, the Ultra E is launching right now and will be. We're shipping prototypes of it right now.

13:26

In the box on top is the Ultra two, which is the other short debt product that we currently offer, that's on ..., Great Depression.

13:34

We also have some GPU servers that are validated in Level three, So, if any of your customers are looking for ... requirements, we have a wide portfolio of products offer them.

13:48

Also wanted to just point out on this slide, we'll talk about a little later in the slide deck because we have an outdoor edge tested environment.

13:55

It's a micro data center or outside environments and we'll get into a little bit more of that as we go through this.

14:04

Um, this is a slide that I'd like to talk about because for the, for the sole reason that it highlights all of the sectors and the business verticals where supermicro and our partners are able to support.

14:22

We have products and we have current installations in energy and power but I'll show you a few more of those as we go through those. We have some industrial IOT.

14:33

We have intelligent retail options.

14:36

We're heavily invested in some of the network functions around overran and some of the five G and the new five G products that are coming around. Open environments, we also have solutions for oil and gas outside.

14:50

We also have solutions for transportation.

14:53

So the takeaway from this slide is, when you're talking with customers, any of your customers that are covering any of these protocols, you can always know that there's something to talk about as a solution for micro abuse case.

15:10

Get into, we've talked about partners a little bit, but first of all, we're going to talk about is our partners that we've partnered with on what supermicro calls the intelligent retail edge.

15:22

There, we can do, we can manage all of these retail requirements, but we need to do that with partners. Supermicro hardware, we have software partners.

15:32

In this case with Node Wever, Net Foundries.

15:35

Node Weaver is an orchestration edge infrastructure manager.

15:39

What it does is it takes the hardware that we're installing and all of these different verticals and it allows a single pane of glass and remote management, an orchestration from anywhere in the world.

15:54

So you can manage 10,711 scores from a single pane of glass.

16:01

And you can do all of the All of the AP updates, all of the bios updates all of the security updates and all of the management from a single source.

16:12

And then the other partner that we talk about on the next coming products is net Foundry and net foundry's software defined product that is also secure products.

16:26

So, it, it is the product that keeps all these edge products here. So we'll talk about that a little bit.

16:38

This is that retail application use case that I was just gonna highlight here.

16:44

There's, if your customers are working in retail or any of the other kind of restaurant management or retail stores, or gas stations or convenience stores, they're trying to address autonomous checkout.

17:02

They're working on loss prevention, access, and protection, safety protections. They're also talking about product safety.

17:11

So they're monitoring temperatures, and controlling and notifying something one when things are wrong.

17:17

So there's a lot of different things that are going on in today's retail stores that we can address with these autonomous solutions that we have.

17:31

This, this is a slide the way that we approach these use cases in the retail space this week.

17:38

We talk about it in a matter of small, medium, and large.

17:43

So what it does is it, it meets the customer requirements for whatever it is that they're trying to accomplish.

17:51

And then it scales up from a simple start in where they're just doing simple, autonomous checkout to where they may be using video to do inference. And looking at facial recognition and other kinds of things.

18:05

And from that, scope from top to bottom supermicro has a solution.

18:12

And the real takeaway from this, again, is when you're in front of your customers, and you're having these discussions about, Oh, way they want to implement some of these IOT and edge solutions of today.

18:25

That Supermicro with our partners, we have a solution that covers any of these applications.

18:31

So, when you get into these conversations, please bring us in, so that we can, uh, talk about how we can meet these requirements.

18:42

Um, moving the next one, software partner that I want to talk about is the data.

18:48

And the data is like the retail space. The data is more focused on industrial.

18:55

We hear a lot about industrial core today, and Jeff is going to talk about some of this in his presentation today, But Use Cases for Smart Factories for Smart Work spaces: smart cities, renewable, energy, oil, and gas.

19:09

So data is the management quarter in it, and this software also operates from a single pane of glass.

19:16

And can manage all of the requirements across multiple nodes.

19:23

Or all of the hardware updates, system and security, and scaling that needs to go on, you can do it from a single class, gives you an ease of use for your entire ecosystem.

19:39

So beta.

19:40

Again, this goes back to that small, medium, large scenario.

19:45

We're no matter what your customers are trying to achieve or they're just trying to do simple machine control.

19:51

Maybe just a conveyor belt control up to where, again, where we're doing video inference, Shane.

20:00

Add on cards with GPUs and FPGAs, where you're doing some more complex video and inferential kind of projects.

20:09

The idea here is that we have a solution from workloads all the way up to whatever requirements your shave.

20:23

Just kinda it goes, I just wanted to point this out.

20:25

We offer these software stacks within this hardware, the supermicro hardware platforms.

20:34

A lot of different licensing agreements and packages. So we have one year, two year, three year packages. So there's a lot of different options for your customer.

20:45

This is one of the, I wanted to just kinda highlight this.

20:48

This is an actual use case, where we've got supermicro, hardware managing a wind farm and a solar farm.

20:59

So as you can imagine, it's not easy to access these remote environments.

21:03

But when you take, you installed the data on these products in the field.

21:10

You can manage multiple nodes, up to thousands of nodes from a single pane of glass and do all of the predictive maintenance, all of the managing of the windmill or the wind farm that you need to do just from a single pane.

21:24

And again, just to highlight some of the capabilities so that when you're out there with your customers, you can bring us into these conversations to show you what what we can do and how we can work together.

21:39

This is just another one of those examples were, what?

21:43

This is an industrial application that shows that we can control a bit shade.

21:51

That also has enough IO capabilities, from the supermicro box, that we can control printers, barcode readers.

21:59

We also have the capabilities for multiple screen types of PGA HDMI and multiple USB outputs, as well as gigabit Ethernet in several different versions to the, to the data center.

22:16

But, industrial control.

22:18

So, you're talking to customers there, looking to adapt IOT and edge platforms for industrial applications. We've got some really compelling solutions.

22:31

This is another slide that talks about industrial. And this one highlights the health care market.

22:38

And the one thing that I wanted the biggest takeaway from this slide, too, is that all of the Supermicro hardware that we're talking about today is all been validated on one of the cloud providers.

22:51

So, anytime that you have a customer that's leveraging Azure, or Google Cloud, or AWS, bring us in, because we have a kit and a solution that fits into those customer profiles of using Cloud technologies.

23:08

Again, this is another a great illustration of where Supermicro Hardware goes into these different health care management kiosks and different healthcare devices, and again, all of these can be managed through the Yeah.

23:27

Good tools likes it data and like waiver.

23:35

Just a couple of slides left, and we'll let Jeff talk about some of the other solutions that supermicro is building on today.

23:43

But I wanted to make sure that we let you guys know that supermicro has some capabilities and solutions for outdoor environments.

23:52

So this box that's on this slide here is a outdoors meant to be produced for outdoor environments. Both cold, wet weather.

24:02

This is an IP 65 rated cabinet.

24:06

It's got a couple of options for workload requirements as far as compute environment scope.

24:13

This picture down the bottoms or a three or a 300 to 304 box, which is got some options for or hype full lake, FPGAs, and GPUs and then also our rack mountable tonight.

24:33

This just talks about a lot of the Telco environments. Today we have some solutions.

24:39

So if you're talking to some of the telco providers that are getting into the five G marketplace, supermicro has a couple of solutions for 50 youth part of the ecosystem for, for telco.

24:55

And again, in harsh environments.

24:57

So if you're out there talking to customers, they happened to be talking about the installation on cell towers, sell environments, especially around five G, supermicro is heavily invested, and we have some really terrific stories.

25:14

Tell.

25:16

And some use cases about Do you, ram environments?

25:24

This is the, think this is one of the last slides we have, but this is again, just another slide about extreme conditions of the requirements trauma from virtual networks on the edge. Front end.

25:34

Foundational co-operation we have with Orion at Tip, but some of the other industry consortiums that are setting the standards and the different hardware requirements for five G.

25:55

Just a quick slide that talks about a VIP table, this is 65.

26:00

So 65 was rated for dust proof for the crooks outside and also for 65 goes for water.

26:09

This will take direct jets of water outside suits the ratings.

26:16

Requirements for telco.

26:19

List IP 65, which is how this is rude.

26:25

We'll kind of go through some of these real quick before we get into chess, but I just wanted to highlight a couple of things we've got along with our partners.

26:34

Like ASI, we've got a lot of markets that we can cover in concert, smart education, warehousing, manufacturing, Smart cities.

26:43

Some of the autonomous cars that are coming out today.

26:46

We've got some solutions for ... retail on Transportations.

26:51

We've got some, some hardware, parent partner discussions that we could have to fit some of these customer needs.

27:03

Just kinda, on the last slide, I'll just kinda synopses before we go to Jeff, but again, we're San Jose based 25, 27 years now.

27:14

And although we're San Jose based Silicon Valley based companies with all the advantages, that brings.

27:21

We also have the million square feet of manufacturing in Taiwan, so we can take advantage of the scale that provides us by being able to manufacture Asia, and again, an engineering focused customer focused company.

27:41

We're working around building blocks approach, which optimizes our hardware too, the specific use cases, whatever requirements, workloads, as well as your customers may need.

27:54

Again, we work in this environment, that's our company philosophy, strict cluster.

27:59

Better, Faster, and Greener.

28:02

Global Support, Mission: Critical. Customers. We've got an answer.

28:06

Your Customer's requirements.

28:09

Customer British Business Strategies are changing today and that that creates a lot of opportunities For us. There's a lot of challenges going on.

28:17

People, in restaurants and retail, how they go to market and how they create the customer experiences.

28:23

It's creating some opportunities for us around Edge computing and IOT.

28:28

So again, the solutions I want to highlight, again, we've got some solutions that will lend itself to any of these verticals We've talked about.

28:37

Please bring us in on this conversation, so that we can start partnering together too, achieve some of these customer requirements that we're looking at today.

28:48

So with that, I'll go ahead and if we can turn over control to Jeff Sharkey, I'll let him introduce himself and take over the presentation.

29:00

Thanks you guys. At ASI, appreciate your support over the years.

29:04

You're a great partner, and a valued partner for us, and appreciate it very much.

29:11

Go ahead and learn a lot more.

29:14

While we're switching over, actually, had a couple questions related to your topic.

29:22

So let me ask those really quick while we're getting these screens switched over when you're talking about extreme environment environments that your products work in. Does that also include seawater or just water?

29:37

It does include seawater also.

29:39

So we actually have a project where we're working on a waiver farm, where Waives generate power.

29:47

And so we're, we've got these deployed in those environments, routes seawater and ocean air. So, yes, it does include both.

29:57

And one of the question, kind of around the warranty had mentioned about the extended warranties and abilities to our response times. Are we talking about on-site warranties or what are we talking about at the warranty area?

30:12

Yes.

30:12

So depending upon the level of service that you add on, you can go from depo all the way up to on site.

30:21

So depending on the customer requirements, we can, they will come out on site at the highest level, within 0 to 2 hours, too, to do any mission critical kind of updates. Then we also have a depot level of service work.

30:37

They can, we can diagnose remotely and send out replacement parts.

30:45

So depending on the customer requirements needs, we've got four levels of service that we can talk about, if you've got some of those customers, bring them to us, and let us give you some detail about the different use case for service level.

31:00

Great. I know there's some more questions coming in, and we'll go ahead and hold these until the end. I want to get started with Jeff's presentation. And we want to get introduced to everybody so that you can kind of continue.

31:14

But for those of you that sent in a question, don't worry.

31:17

We'll have an opportunity for supermicro crew at the end.

31:22

So keep sending in the questions, and we'll, we'll get those asked and answered.

31:27

Right now, I want to go ahead and turn everything over to Jeff and John, you're off the hook for now so you can mute your turn. And, Jeff, please take it away.

31:37

All right, great. First off, can everyone see my screen?

31:41

Hopefully I've got see.

31:45

We can see this intelligent, intelligent edge.

31:49

OK, perfect, perfect. So welcome everyone. My name is Jeff Shar, Director within the five G and IOT Solution space.

32:00

And really my overall responsibility, I have two hats.

32:04

I wear a market development half for supermicro, meaning that we can build up the additional markets, you know, market verticals, outside our normal realm.

32:15

I also do biz dev working with, primarily software partners and enabling partners that, you know, again, you'll hear me say this a few times in this presentation, Texas Village, kind of setting up the strategies and partnerships.

32:33

And also, you know, a little bit about product knowledge.

32:36

I've been in this industry for about 38 years, I wish I was, uh, just kind of getting out of college, and I've been doing this a long time. So, kind of strategies on where the market's going.

32:47

Working with our executive team on building new products.

32:50

and, and working, I did write a bunch of certs Supermicro, Um, to kind of go through what I'm going to talk about since I'm a solution level guy.

33:01

I'm not going to have a lot supermicro SKUs and boxes.

33:06

But I wanted to kind of set the stage of where the market is going.

33:11

And the market, I'll define what that market is, but communications markets, IOT based markets, I know IOT is a widely used term, so I'm gonna kinda use. The term, is really edge, because that's what it's all about.

33:23

It's and it's delivering services at the edge, but we knew, We do know that five G is coming. It's actually here in a lot of cities. It's not all high.

33:34

So we know that the wireless networks are emerging, that we also know that they're delivering higher speed, and greater value of services to the end customers. And they're doing that also with white Box technology, so I'm an old Nortel guy, so you know, we're always proprietary switching.

33:54

You know, it was all very proprietary in nature from the Silicon level on up, in the new world. It's all about open architectures.

34:04

It's about white box or gray box with some minor customization that these are all being driven by the service providers, the end customers, and enterprise customers, because they see value in non proprietary hardware.

34:19

We also see a lot of different service provider market, It's also at the consumer market, a merging of common elements and also a merging of their divisions as well.

34:33

Operational teams, working with the infrastructure teams are now coming together as one organization in the telco space. You have cable internet, you know, the top three level services and wireless and wireline are all now becoming one company.

34:48

And they're doing that for a few key reasons.

34:50

one is as common element effects, I can combine as many functions on the one element as I can, and that element is going to be open architecture, both from a hardware and software perspective.

35:02

And, with all these investments that, that all these companies are making to this more intelligent space.

35:09

They need good services. They've gotta have the ability for some type of return on investment, whether it's top line or bottom line savings, they gotta have an roi.

35:19

The service providers are getting more and more into managed services environment, because of five G, and the ability to offer a wireless based infrastructure to the end user is a powerful environment.

35:31

Then, of course, co-location, companies that are building data centers at the Edge, you know, people are even buying shopping centers, shopping malls, old models, have been bankrupted converting into the data center, so it's crazy.

35:44

What's driving all of this?

35:46

Well, there is a transformation going on, and there's some new requirements and standards that are hitting the industry, and it's called Industry four.

35:55

And what industry for oh, is this basically the next step in the evolution cycle?

36:01

What we've seen since the late 18 hundreds from boilers and steam.

36:05

Machines, great technologies at the time, then, into, you know, the World War II effort and more mechanical and assembly line processes.

36:16

More engine and turbine technologies just continue an amount of technology.

36:22

But the manufacturing technology has to change, And then, in the seventies, eighties, all the way in the early two thousands, it's more about those robots, as robotics, the PCB lines, thing, more and more, self contained, self manage them, where we're at now.

36:38

There's what we call the intelligence industry, meaning that, everything that is non connected, yesterday, will be connected.

36:47

And also, that data and that device, will also become, more and more intelligent in nature, self-sufficient, self healing, doing artificial intelligence and environment.

36:58

So that's really the transition place into Ford Otto.

37:02

And one of the key things with ..., especially from a telecoms perspective, is that wireless five G based technology that they can use to connect all this.

37:13

With that said, I'll kinda go a little bit deeper of why edge is so important, and the way we manage those edge devices is so important.

37:23

From a super micro perspective, in that software defined environment, we're focused on, I think John mentioned this earlier, no industrial applications, robotics that control plane from the device to the compute.

37:37

Solar farms wind panels waveforms power plants, offshore logistics, retail, and of course manufacturing, as I said.

37:48

All having some key characteristics, it's gotta be software defined, meaning that it's gonna run on a specific piece of software that's virtualize.

37:58

It will also use artificial intelligence, which I'll go in a little bit more detail with. And vision based systems, computer vision.

38:06

Camera systems are becoming more and more prevalent in all of these industries to do robotics and automatic autonomous applications.

38:15

Latency, meaning lot of these activities have to be real-time.

38:19

They also have to be secure as you're connecting to the network, everything's going to be secure, and also, it's providing additional safety aspects, no hazardous areas, and how can I support our workers from not getting injured?

38:38

I love this slide.

38:39

I know it's kind of busy, but the transformation model is kinda built up in the two areas, and that's the value in what we're delivering.

38:49

I stole this slide from an ISP.

38:53

But it seems to resonate with all of our customer base and the market itself.

38:58

So if you think of moving to more of an intelligent, connected environment from a sensor, it could be a no temperature monitor, or it could be a pressure sensor.

39:10

What I do with that information and how it's done is really around this value prop report auto.

39:16

So you're bringing more of the digital and physical assets together for sensors.

39:21

They're becoming more connected, they're becoming more intelligent.

39:26

The internal groups within companies have to be combined at the hip, meaning that the IT group and the OT group have to work together to deliver all of these new services and more thought conductivity.

39:41

No, you need speed, You need amount of data.

39:45

Because, you know, of course, you can have thousands, not literally millions of sensors being added to the network, but those sensors are also providing more conductivity packet flow that's going to occur. So, you have bigger bolder networks.

40:01

Then, for the delivery, what we're focused on are, as John said, common platforms, a building block approach.

40:08

Uh, partnerships that village that we're trying to do, or control and asset monitoring, managing.

40:15

High availability systems at the edge, containers, virtual machines.

40:22

All of which, kinda take this, this whole market, this revolution.

40:27

So with that said, if you think of intelligence, and you think of the analytics that are running those intelligence, it comes all the way from the sensor.

40:36

You're getting certain sensor readings, all the way through your gateway, through your maybe remote compute device through an edge device that's also communicating up into a cloud.

40:48

Those clouds are doing data models, analytical models.

40:52

It's learning, It's training, all of that stuff all in one complete network, were before, if you ever walk, you know, maybe it's still factory. nothing's connected, Everything is single oriented, they put it on a machine, and it goes forward.

41:06

So, here, everything is: connected everything, is talking to one another, which is a tremendous amount of data, and compute processing.

41:14

Um, from an AI perspective, there's really seven key patterns of AI.

41:21

There is recognition, I'm going to see something, and I'm going to recognize it.

41:26

There's also a type of interaction, you know, the Alexa I used as a good use case. I can talk to my computer and it'll talk back.

41:34

It understands and computes what I'm actually understanding. Hopefully in those cases.

41:39

It's doing predictive analytics and it's doing decision making based on input.

41:44

It's doing something based on goals, and it's also driving a robotic year or a ton on the sphere, so all being like the true human.

41:54

But all in a computer AI sensibility. And by the way, all this is pretty much being done both in a cloud environment and at the edge.

42:04

With that said, we want to have a common platform to drive all of these types of AI patterns into a common workflow, whether, you know, workplace safety. I'm talking on the cell phone on a construction site.

42:16

I want to no, ensure that he doesn't do that Again. I'm doing analytics. It could be a traffic signal. It could be a smart city.

42:25

All of these seven patterns of AI is fairly ..., the same in all of those market verticals. And we want to create a common workflow to have that input going output.

42:37

John presented this one already, along with our edge to cloud, that Super Mike routes focus on all of this, especially on industrial port auto, is that edge to cloud mentality.

42:49

Meaning that based on the, the latency of that application that's running, I will be closer to, you know, where that applications need to be on the factory floor.

43:01

It could be on a wind turbine, It could actually be in the radio tower itself.

43:06

Whether it's a micro tower or a macro tower, I can put micro data centers there as well, using that, that wireless technology.

43:17

You're round robin times are much shorter and central offices, you know, in the telco space, you have a lot of law, central offices there. These are the switching centers that as they're removing all that archaic and an old proprietary gear.

43:32

They're putting in, you know, compute and server technology.

43:36

And data center based technology to serve everyone within that central office. And then, of course, regional and remote cloud environments.

43:44

Um, one key thing is, with them, over the past year, we've been selected as one of the, um, Excuse me. Sorry, I've got a window pop up.

44:00

We've been selected from IDC as one of the top systems, server technology companies in the world.

44:07

This was driven by a customer survey, was very customer driven, and these are because of our breadth and depth, the hardware products that we have, and also, our ability to deliver in multiple market segments, And also, our ecosystem are our village of folks that we're working closely with.

44:30

Um, we are also, with our ecosystem of partners, we have the ability to manage remote devices.

44:40

As John said, the management layers and the hypervisor layers are all critical to our success because they have to be self dealing, self managing and self-aware to run correctly, and a good example of that is, um, by the way, can everyone see my screen?

45:06

Yes. You can see your screen yet, or we can talk a little windows saying, Move this window away, be shared, and I can.

45:15

Anyway, I'll keep I'll keep chugging.

45:19

um, a good example of the, of remoteness. So think of a retail store, and that retail store could be a fast food.

45:27

It could be a McDonald's Wendy's.

45:29

It could be a 7 11 or a gas station, or a brick and mortar store, Macy's Home Depot, but they all have, are moving towards more intelligent environments.

45:39

And again, this goes back to artificial intelligence, What can I use from a compute infrastructure in these environments?

45:47

So interactive kiosks, you know, autonomy's, walk, and walk out without showing a credit card, or going through talking to anybody.

45:57

All of these things require a type of computer vision, or analytics sensor based systems.

46:04

And if you think about walking into a fast food or gas station, they're not going to have a humongous data center in the back.

46:12

So supermicro and our partners are really focused on kind of a t-shirt size environment that can go from big systems, to medium systems, to small systems.

46:25

Supporting that environment.

46:27

That could be in a storeroom, it could be in a freezer system that could be in different areas. So we have to build our common platforms around those devices. So Node Lever Net boundary, great partners are on there.

46:40

John talked about it We have another great partner that you'll hear more and more about from Supermicro, and that's called TT Tech.

46:47

They're based out of Austria and There are more on the control side of the house.

46:53

These are from the compute infrastructure to a sensor, or a PLC type device.

47:01

And the key aspect of TT tech is there a server called nerve.

47:07

It's a software system That provides real-time communications to PLCs.

47:12

Those are your control plane attributes moving a robotic arm, moving A, looking at a sensor, and communicating to that sensor, albeit virtual machines so they can manage it.

47:23

It's an HA, high availability.

47:26

So when you are building cars or building airplanes, you're building, you know, belt buckle, it doesn't matter.

47:32

You now have the ability to add intelligence in that poll Cycle of production.

47:38

And the great thing about TT tech is you can take Well let me back up.

47:43

The biggest obstacle that we're seeing in this market, in the Industrial market is Going from Old to new.

47:50

That means they have really archaic operating machines operating systems. And even the machines themselves can be fairly old, you know, 20, 30, 40, 50 years.

48:01

How do I make, you know, a binary machine? How do I make a dumb machine into a binary machine?

48:08

So having those sensors out there is a struggle.

48:11

And using supermicro along with our services team, it really does help moving from that legacy old brownfield into more intelligence systems and teach ether and of course, Node Weaver and some of our other partners as well.

48:31

And lastly, I wanted to talk a little bit about healthcare's, another vertical that we're focused on.

48:37

Um, so, think of ..., we have the ability to know, using AI and computer vision to ensure people are wearing their masks elements.

48:47

Using infrared cameras, and temperature guides, to open and shut things like turnstiles. We can actually use computer vision to see areas that may have not been cleaned properly, that there's bacteria. There's areas that were not picked up through either mopping or wiped downs.

49:08

Then, you know, based on workplace safety.

49:11

Even with code that is doing zoning techniques, you know that it's six foot in certain manufacturing areas that could be greater because of the safety of person.

49:22

So using all of these use cases, we have the ability to work with a variety of partners and applications that are delivering that.

49:30

And again, Supermicro, I think John did a great job on showing this, but for industrial, for auto, the key takeaway is, we do have a village. We do have a great ecosystem.

49:41

We are differentiating ourselves with that's the software partners, middleware partners. We have the ability to go from brownfield to the latest environment and also deploy greenfield based systems.

49:55

We're heavily involved in industry.

49:58

That's the key for us, is being part of the sandboxes during these proof of concepts of new technology, and with our partnerships, again, with Intel and Nvidia, and a slew of other silicon providers, they also bring us into their strategy and they're building their go to market attributes.

50:19

So, with that said, I can open it up for questions.

50:25

OK, great, if you guys have any questions, go ahead and send them in through the question box, and we'll get those answered.

50:36

I will say, just upfront that a few of the questions being asked, I'm going to be totally honest, are quite technical on. I'm not sure that I can even ask them in the proper manner.

50:47

So, if I get a question like that, and I don't ask the team, don't worry, we will send all the questions to the Supermicro crew, and there'll be able to get an answer back to you one off, so there'll be able to have that discussion with you guys directly. Also wanted to let everybody know that we did record this webinar, so we'll be providing you with the recording to the webinar, after everything is done.

51:16

So you'll get a chance to have that as well.

51:18

So, if you have anybody else at your company or any other colleague that you wanted to share the webinar with, You can go ahead and do that as well.

51:26

So, a couple of questions that I know we have a lot different people on, from Supermicro. To help answer this, I don't know who actually the right person to do, necessarily direct the questions to. But let me start off with the first one, kind of regarding overall supply and issues related to coded and embargoes between the US and China. Any disruption to your guys' supply chain based on any of these external factors?

52:01

Yeah, so I don't know if you can hear me or not, but I can I can take that.

52:06

We can hear you.

52:08

OK, great, yes, So, yeah, there have been some global supply chain issues around some of our industry products.

52:18

Supermicro in the early going committed two stocking and taking a stocking position, especially with some of these component level things that we knew that there could be some constraints.

52:35

So we ended up with \$100 million worth of inventory here that has proven to be pretty consequential because we have not run into any shortages and we've been able to conduct our production lines here with very little disruption.

52:55

And we've gone through some record quarters of production here, with no disruption to the supply chain, And that being said, we were working.

53:06

We're still continuing to monitor where we see constraints in the supply chain, especially with related to China and trying to supply.

53:15

So, we will continue to make sure that we're making the right investments in the right place to secure the supply chain.

53:24

It's a really valid question to ask, And especially around these, the products that we're talking about today.

53:30

All of the products that we're talking about today on there, the roadmap there, these are without exception, these are all readily available there off the shelf kind of products. Most of the products on this that we showed you today, you can order these and get them within two weeks.

53:48

They also are, because of our capabilities for manufacturing, they're scalable.

53:56

You could, or you could come to us and order 10000 of these for a quarter. And in most circumstances, we would be able to accommodate that because of our scale.

54:05

So off the shelf products and our ability to scale and especially with the new assets, we've just come online for us in in Taiwan and really given us some real advantages of meeting the market needs.

54:19

Right.

54:20

So a question is regarding the products that you guys were talking about today, and I know most of what you were discussing with kind of the IOT marketplace, but are these products, are they only available as turnkey solution bins? Or can you also get them as building blocks?

54:41

Yes. So I can, I can answer that, Maybe Tony can jump into, but any of these products that we show that we highlighted today, anything that's on our roadmap, And I would encourage everybody to go to our website.

54:55

You haven't gone to our website, just supermicro dot com. You can pull up any of our products, and you can, with a couple of clicks, you can look at all of the options available on any of our products.

55:07

And then the first thing that you'll notice, there's a very wide variety of options. You can use the amount of IO, the different input, you have the different storage blocks, and how many storage blocks you want, or how many you don't want.

55:24

It's completely configurable. So all these products are highly configurable, almost to the point where they look like they're ODM products, but they're really just our optimized building block products.

55:38

And I will add to that also that we just launched on our website, our IOT landing page, and I will send out to everybody so that they have this. I think it's important to note that we have an IOT landing.

55:55

Aye.

55:56

IOT landing page, if you go to that landing page, there is all kinds of collateral there. There's all kinds of use case information.

56:05

There's videos, with all of the use cases from T systems through a lot of the other wins that we've had in use cases that we've got.

56:15

So, there's a lot of content, a lot of information on there that's very usable, so I'll make sure that everybody has the link to that IOT landing page of supermicro dot com. Tony, you have anything you want to add to that?

56:29

Yeah. I think, you know, John has mentioned that, we have so many products already available as of this out, that, you know, our partner and I can, you know, grab and use and proposed to your customer and.

56:42

And, you know, in the presentation that you have heard about the terms, you know, booting Brock Solution many times. And, you know, let's say, is, you know, you don't see anything that may see your customer need.

56:54

Or, you want to add more networking or something Nashville or, you know, more USB port, or, you know, more video output. We can always, you know, change a different ...

57:05

within the same form factor to create a tailor made solution for your end customer. So, you know, if you have any customer that has different needs than you do and you don't find it on our website, do through, there is no, and we can definitely send you a perfect solution.

57:21

So let me kind of expand on that a little bit a little bit.

57:24

Is that the same case for the data center products for the server class products that have the same configuration capability and then what about the system integrator?

57:35

If they just want to purchase the, the server building block, do they have the ability to do the upgrades on their side, as well? Or they a work through your, your Web tool that you guys create?

57:51

Yeah, So just real quickly, Yeah, so are our building block a strategy applies to our entire line, our data center product, to our of the multiple node, the blade servers. They're all very highly configurable.

58:07

And to answer the second part of that question, you can from supermicro source and motherboards, chassis, all of the different IO configurations from riser cards to network cards in any any kind of package that you want.

58:28

So, you can just buy a chassis if you want.

58:31

And then you can buy a motherboard.

58:33

And you can buy an IO card and you can buy, you know, a GPU. So, there, you do have the option to buy bare bones.

58:43

So, we have whatever your needs may be that it's pretty, pretty easy. But, it's very accommodating.

58:53

So, John, you were, you talked a lot in your presentation and Jeff, also, about some of the software partners that Supermicro has joined with on the IOT and those products that you guys were discussing, what are the operating systems involved with those?

59:10

Are they are Windows based Linux based?

59:14

Yeah. I can, I know not. So usually, it's all the above.

59:19

So all of our systems will have the ability to support different versions of Linux from into Red Hat Soap, for whatever, the operating systems, all the way up into the hypervisor. ...

59:35

you know, whether I'm using v.m-ware or Kubernetes for containers, Docker for containers, it's really everything.

59:43

We have to have the ability to support it, because most of those customers have something that's specific to their use case.

59:53

On the infrastructure, let me kinda highlight one key area where we're seeing the evolution path is is taking existing operating systems.

1:00:03

Let's say in Microsoft Windows for a specific use case would want to be virtualized, meaning that they would take that and virtualize it and run that application on a Windows separately from everything else. And, a, separate four.

1:00:20

Um, so, that's the reason we've selected some of our key software providers like Node Weaver likes the data is another good example, Titi Tech is they provide that middleware infrastructure that make all that happen.

1:00:34

Taking existing operating systems, taking existing applications and moving into more of a virtualized container space.

1:00:43

So to circle back to the original question and answer, yes, we have to support many, many types of operating systems that can run on an X 86 and also use additional silicon hardware accelerators like FPGAs, Software packages and also GPU for training learning and also inference and techniques so we have to support a lot of those as well.

1:01:09

I have, I think that did, thank you very much.

1:01:12

I have a couple other questions in here. But like I mentioned, early on there, they're more technical than what I think I can justify and asking.

1:01:21

So what I'm gonna do is take those questions and send them directly to the Supermicro team, so you guys can have a one-off discussion, kind of what can happen with a technical question.

1:01:33

Is that usually leads to another technical question, and probably better to have that discussion directly with you, guys. And I don't want to mess up the question. So, we do have a few more here that I'll send to you guys.

1:01:46

Setting that aside, it went on, go ahead, and, uh, wrap up our presentation here today.

1:01:52

Any questions that you guys are submitting, we will get over to Supermicro, and someone can follow up with you directly, or someone from ASI will follow up with you directly on an answer.

1:02:04

So don't worry, Didn't get enough time here to get your question answered, we still have them all captured, and we can get them over to Supermicro, to have that answered for you.

1:02:15

So before we close, and I give John and Jeff a chance. Just kinda give some closing statements here. I'm going to also thank everybody for joining us today and remind you guys that tomorrow is our final day for the ASI Tech Summit. We have the Western digital presentation at 11 o'clock, so same time as the presentation today. We have three prizes that Western Digital is offering to give up, but also, you know, don't forget we have the grand prize, which is a notebook that will be giving away as well. So make sure that you join us tomorrow so that you can be included in a raffle drawing for a chance to win that notebook. So, with that said, John, Jeff, I'll start with John. Any closing comments? Anything you want to say to the group before before we close out?

1:03:06

Yeah, no, I just wanted to thank everybody for joining us today. You know ASI is a great partner for us, we do a tremendous amount of business with you guys today and it's it's always a pleasure to work with the ASI team.

1:03:21

With that, I'll turn it over to Jeff. Go ahead, Jeff.

1:03:23

Yes, same thing.

1:03:26

Really look forward to continue our, our journey with ASI and, and again, we're from a supermicro perspective, it didn't come out No, we are focused on solutions. We are focused on more infrastructure.

1:03:41

Not just you know, great engineered boxes and computes and AI machines and also the overall solution. So definitely tap into our resources.

1:03:53

We've invested a lot of money over the past 2 to 3 years in this environment, both with talent and the lab infrastructure and hardware infrastructure.

1:04:03

So, definitely looking forward to working with you all.

1:04:08

Last, thanks, Jeff. And go ahead, I'm sorry.

1:04:11

Bet yeah, sorry, and then just a special thanks to Kant and Shelley for setting this all up but we appreciate your support.

1:04:20

Thanks, John. Yeah.

1:04:22

And I did also want to mention that, you know, I've known Supermicro for many, many years. Decades. So I don't want to date how old I am.

1:04:32

But there was a lot in the presentation that I didn't know that super Micro was engaged in and a lot of solution there, that you guys have. that was really very new to me.

1:04:43

So, I appreciate you guys coming on, and kinda sharing and expanding into some of the different markets and different areas that you're working in, I think, very, very valuable for our customers, so I really appreciate you guys doing that.

1:04:58

So, with that said, we're going to go ahead and close the presentation. We'll see everybody back, again tomorrow at 11 o'clock, or Western Digital on our final day of the Site texts on that.

1:05:10

And, again, recording of that session will go out to you guys As soon as the system processes it, so everybody can add the recording.

1:05:19

With that said, thanks everyone, for joining us, And we will see you guys all tomorrow! Thanks!