

Making servers reliable and portable with EPIC.LAN, Intel® and Broadberry

EPIC.LAN needed faster and more resilient servers compact enough to fit in the back of a car. Intel partner Broadberry was up to the technology challenge

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Executive Summary

EPIC.LAN describes itself as “an independent community UK LAN Party,” running gaming events that range from 32 players up to 750. The company also works closely with gaming industry organisations, such as EGX and ESL UK, providing a range of supporting technical services from equipment hire and networking to custom software development.

The challenge in hosting large-scale LAN party events, like 2022’s EPIC36 gathering in Kettering, is setting up a robust but temporary network infrastructure. That network also needs to be reliable, low latency, and capable of supporting an array of different devices and connections. For every event, EPIC.LAN transports its own servers to the venue and this need for portability shapes the type of hardware the company relies on.

Not only does EPIC.LAN need fast CPUs and lots of RAM, but servers need to be compact enough to fit in the back of a van. Working with Intel® Platinum partner Broadberry (a specialist in highly-customisable servers), EPIC.LAN recently upgraded its server technology to provide greater computing resources for its gaming events today and into the future.

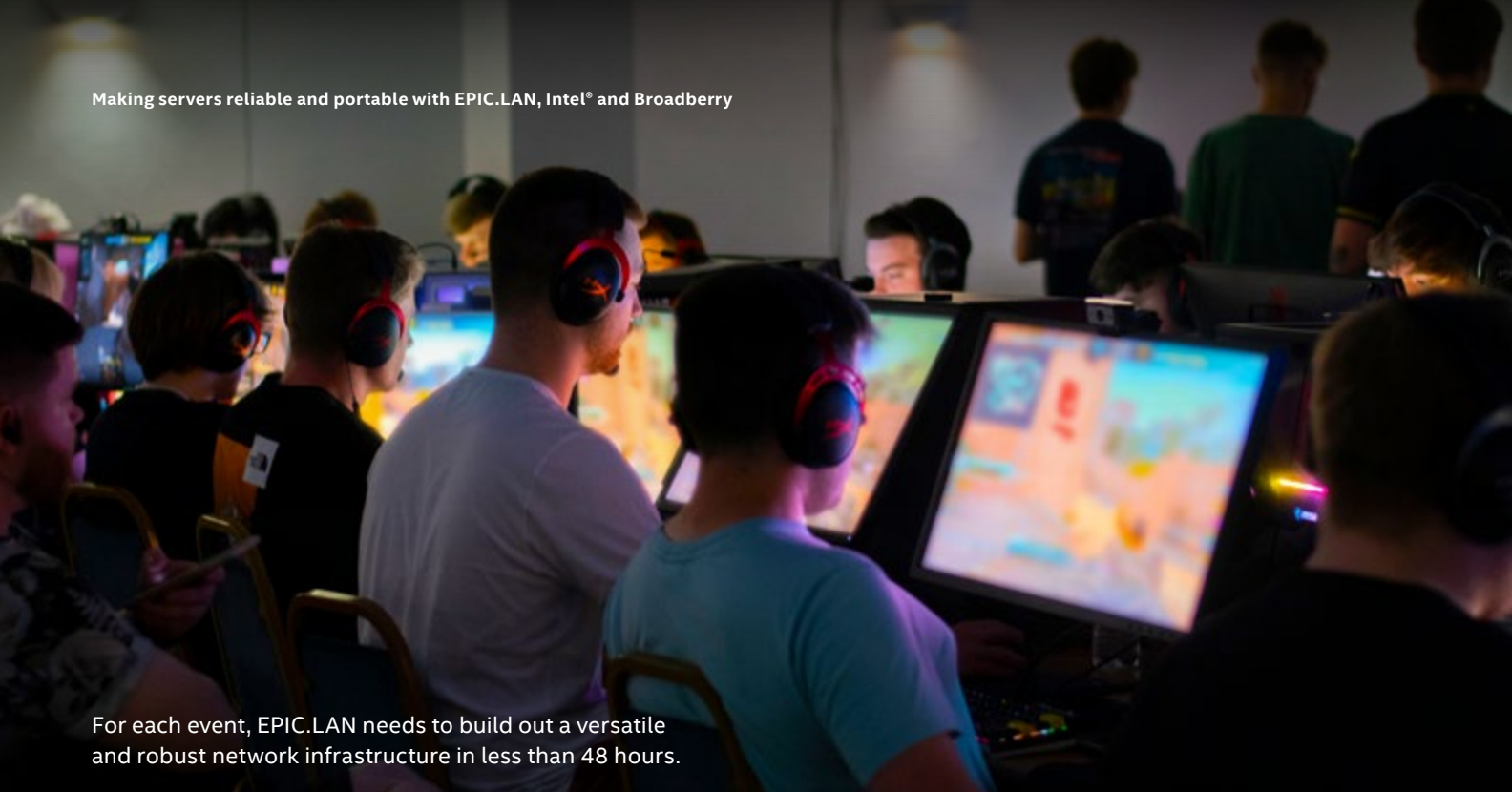
Building a temporary and low-latency network

At EPIC.LAN’s EPIC36 gaming event in Kettering (powered by Intel), hundreds of gamers gathered to play their favourite games. At one end of the scale, participants could compete in esports tournaments based around fan favourites CS:GO, StarCraft 2 and Valorant. At the other, gamers could get involved in more casual multiplayer sessions, playing titles like Golf With Your Friends and Fall Guys in a friendly, supersized LAN party.

It’s a far cry from most internet gaming, which is typically a solo affair with distant virtual friends. “People come to our events to meet people and socialise,” says Jon Winkle, Founder and Managing Director at EPIC.LAN. “The ability to win money [in our esports competitions] is kind of incidental. It’s about social contact and we’ve got a really welcoming, open and friendly community that’s built up organically over a long period of time. At the moment, we’re busier than we’ve ever been.”

Table of Contents

Executive Summary	1
Building a temporary and low-latency network	1
A server that fits in the back of a car.....	3
Boosting computing performance with Intel® Xeon®	4



For each event, EPIC.LAN needs to build out a versatile and robust network infrastructure in less than 48 hours.

The popularity of EPIC.LAN's events, which can cater for 350-750 players depending on the location/venue, means that they need a robust and versatile server infrastructure. For while the company has a limited number of PCs for hire, its LAN parties operate on a Bring Your Own Computer (BYOC) policy. Jon Winkle explains how this works:

"People from across the country bring along their computers and plug into the network that we build for the event. They're a mixture of casual gamers through to more

serious competitive players who are playing in our esports tournaments for money. Our current size events are about 750 players. But there are over one thousand things that people plug in during the course of an event weekend that we don't know about."

This setup poses several challenges for EPIC.LAN and its on-site tournament network. "Unlike a normal office environment," Winkle adds, "where everything's controlled and a corporate IT team has bought every PC, we have to build out a network in less than 48 hours that can accommodate whatever people bring and plug into it. This might be a parent's PC that they built in the 90s, through to consoles, through to wireless devices like mobile phones, through to top-end gaming PCs. We don't know what people are going to turn up with until they get there."

"Crucially, the longer we have for setup, the more expensive the event costs. So, we have to do that pretty quickly, keeping everything super portable and quick to deploy. As we don't have permanent data centers in any of these venues, it all has to come in the back of a van, get wheeled off and plugged in. We can't scrimp on the quality of the network either. On the esports side of things, we're talking games where milliseconds can make a difference between a win or a loss. It could mean thousands of pounds-worth of prize money if one of the teams loses because the ping jumps up in the middle of a game."

As the size and popularity of its events increased, EPIC.LAN reached a point where it was maxing out the CPU and the RAM capabilities of its existing short depth servers. These portable systems, says Dan Oxborrow, Development

The benefits of an Intel® Platinum Partnership

Intel Platinum Provider Status affords Broadberry early access to the latest Intel technologies, helping the company stay ahead of the market while giving its customers better advice and keeping them abreast of the latest computing trends.

"Partnering with Intel allows us to put our customers directly in contact with Intel engineers for complex projects, where they can help to build a solution around the customers specific requirements. Working directly with the manufacturer of the solution is a massive benefit to the customer as nobody understands the underlying technology better than them. This means the customer always gets the very best solution for the application, instead of settling for a generic mass-market solution from another vendor."



Manager at EPIC.LAN, need to run everything from the firewall and the router to the tournament game servers used at EPIC.LAN's events.

"Every interaction that people take across the Internet and the network all runs through two racks of servers," Oxborrow explains. "But they were dated. We refreshed the SSDs a few years ago, but that was all we could do to our old hardware. We got to the point where we couldn't keep squeezing a bit more life out of them."

A server that fits in the back of a car

While increasing processing power and memory were obvious necessities when thinking about server upgrades, EPIC.LAN's key requirement was size.

"Our biggest challenge," says Dan Oxborrow, "was to have a rack and a set of servers that we could either put in our bigger EPIC.LAN van and transport somewhere, or throw in the back of a car and transport it as well. We've used full-depth rack servers in the past, but they were huge and there was no easy way to transport them but on a truck. To stay more mobile, we needed short-depth servers and Broadberry was one of the only hardware providers we could find that offered them."

Founded in 1989, Broadberry Data Systems Limited specialises in the sale, supply, and support of highly customisable industrial server and storage solutions. One of the company's key advantages is that it has held Intel® Platinum Provider Status for over 20 years. This highest level of partnership means that Broadberry has access to Intel's

labs for testing custom configurations for its customers, plus it has access to Intel engineers and supported pricing for server configurations.

"EPIC.LAN found us online and contacted us by submitting an enquiry for a system they had configured [on the website] using our web-based system configurator," says Graham Hemson, Marketing lead, Broadberry Data Systems.

"They needed a short depth server that would allow them to incorporate more racks, so we worked to ensure that the system they had configured would best address their requirements. [We have] a range of highly customisable short depth servers that are frequently used as appliance servers, or simply to reduce footprint and maximise server density where space is at a premium."

Not only did Broadberry's suggested solution offer improvements in processor power and RAM, it fitted in with the equipment that EPIC.LAN already had. This was just as important as the size requirements, as it avoided the inconvenience of re-racking and rebuilding everything physically from scratch.

"We were chatting to the sales team [at Broadberry] about exactly what we needed," says Jon Winkle, "and they were very helpful. Not only in trying to steer us toward alternatives that would fit, but they also helped us to navigate the state of components at that time as well. For example, swapping to a different motherboard to make the system a little bit quicker. Having that two way communication process was nice, and all-too rare these days."

Boosting computing performance with Intel® Xeon®

Ultimately, EPIC.LAN upgraded to a Broadberry CyberServe Xeon SP2-104S powered by an Intel® Xeon® Silver 4208 processor. The eight core, 2.10GHz CPU is ideal for running the company's virtual infrastructure. EPIC.LAN opted for the CyberServe system because it's a dual socket short depth design, supporting up to 512GB of RAM. While the initial configuration only uses one CPU, the ability to add a second processor (and the massive memory support) gives EPIC.LAN the ability to significantly boost their computing performance and resourcing in the future.

"All of the virtual machines we run work for a certain number of people," says Dan Oxborrow. "As our events grow, there will be more people on the network and we will have to start giving more resources to those virtual machines to allow them to cope. [The new machines] will allow us to improve our offerings and our capabilities within our events.

"So, we'll also be able to spin up some new [virtual machines], allowing us to to monitor everything across an event and then diagnose or fix things before people even realise there's a problem. That's something we've not been able to do before, because we've been limited on our resources."

The increased resources available will not only enable EPIC.LAN to grow its events business, but extend the services it offers to clients. As Jon Winkle explains: "We operate a tech services agency that's got a big focus on the networking side of things for esports events - the boring bit that nobody else wants to do because it's not shiny and flashy, with LEDs and pyro. Then we have things like a dedicated tournament platform and we run game server hosting for esports tournaments and leagues as well. We do equipment hire, crew sourcing, broadcast production, PC rentals, the lot."



"We want to keep growing what we can offer and improving it for both our gaming community and the B2B clients we support. Intel is helping us to do that."
Jon Winkle
Founder and Managing Director, EPIC.LAN





The increased resources provided by the CyberServe Xeon SP2-104S will enable EPIC.LAN to grow its events business.

The new servers will also be more reliable, giving EPIC.LAN the ability to start using proper redundancy and failover as well with its systems. This will ensure that whatever the event, and wherever the location, the infrastructure will keep running smoothly. As Dan Oxborrow is keen to point out, this is only the beginning of EPIC.LAN's upgrade cycle.

"The next big thing for us from a production point of view will be to start speeding up everything from a network point of view. So, on the AV production side of things, everything is moving towards running over the network and NDI rather than using SDI/HDMI. To do that we need to start looking at things like 10 Gig network cards and the network to support that underneath."

"The new servers are the first investment we've been able to make in our infrastructure for a long time," says Jon Winkle. "As we go to support more client events, we get asked for the same things we put into our own events - more monitoring and more resilience. So, we want to keep growing what we can offer and improving it for both our gaming community and the B2B clients we support. Intel is helping us to do that."

Learn More

You may find the following resources useful:

- [Broadberry Data Systems](#)
- [Intel Xeon Scalable Processors](#)

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