

89%
...of businesses have digital transformation initiatives

80B

IoT devices by 2025



60%
...of Network Engineers spend >25% time fixing Wi-Fi

70%

...of business applications in the public or private cloud by 2021



75%
...of Security Spend focused on network perimeter. However only 27% breaches emanate from that point

Extreme Networks Smart OmniEdge[™]

Intelligent, Adaptive, Secure

The network edge has become the new battlefield for competitive differentiation. It is the point where an organization and its customers meet, where users engage, Internet of Things (IoT) devices connect, mobile transactions occur and it is the first line of defense against cyber-security attacks.

It is also the part of the network most wrought with complexity. Complexity resulting from the explosion of users and IoT devices. Complexity due to disparate wired and wireless hardware and software each operating with unique functionality and user experience. Complexity due to different architectures and deployment models—distributed, centralized, on-premise, private cloud, public cloud, etc. Complexity resulting from different connectivity types—Wi-Fi, Ethernet, Bluetooth, and IoT technologies. And complexity resulting from the fact that users and devices can, quite literally, connect from anywhere—corporate headquarters, 30,000 feet in air, the top of a lamp post, even the depths of a fish tank (Ref 1: [Hackers broke into a casino's high-roller database through a fish tank](#)).

Motivation for a Smart OmniEdge

Regardless of size, location or industry enterprises share a common goal—how best to grow their business. They look to operational efficiency, security, new customer experiences and diversified business models to allow them to keep up with and thrive in today's economic environment—a challenging feat given we are experiencing the fastest pace of industrial development in history. Businesses need to look beyond their traditional borders to innovate and grow.

Some of the key trends shaping the evolution of the Network Edge include:

- **Personalization:** For enterprises to succeed today it is imperative that they differentiate and personalize services to cater to the needs of their customers. Often the first interaction a user has is their connection to the network—a guest connecting to the hotel Wi-Fi; or a fan ordering food from their smartphone in a stadium. Being able to identify users, devices and applications, and fine tune each individual experience, is critical to creating competitive differentiation.
- **Consumerization:** Increasingly enterprise requirements are being influenced by users experience outside of the work day. There are consumer devices in the workplace, consumer applications in the workplace and consumer expectations in the workplace. To consider the future of enterprise networking, one needs to look no further than to our smartphones. In our connected life, we can download new apps quickly and easily at the touch of a button, and this experience is similar regardless of the type of device, or our location. This experience has forever changed our expectations, and users are now looking for the same experience from their corporate IT departments. Clearly, the enterprise network, especially the network edge, needs to evolve.
- **Digitization:** We face a changing society due to the massive disruption of digital transformation. Digitization is changing everything about our daily lives... how we engage, the tools we use, what we are exposed to, the choices we make. The key is to understand where the challenges and opportunities are to harness its potential.
- **Escaping the 80/20 Spending Trap:** Gartner reports that most enterprises typically spend 80% of their budgets on maintenance and only 20% on innovation¹. Enterprises will never be able to focus on what truly matters if a large portion of their employee's time is consumed by routine tasks. Increasingly enterprises are looking at advanced capabilities such as artificial intelligence (AI) and machine learning (ML) to automate the mundane tasks so that human intellect can be put to more productive use.
- **Adaptability:** The ability to adapt quickly to changing market environments is critical in today's economic environment. Many large, industry-leading companies of their time—Kodak, Blockbuster, Sears, Polaroid, Radio Shack and Toys R Us, failed to adapt quickly enough and experienced the same fate. A business can quickly fall behind if it cannot adjust to new ways of operating, or to adapt to changing customer demand for innovative products and services. It is essential that the network is not the inhibitor to growth and innovation.

¹ Gartner. Newsroom.

<https://www.gartner.com/newsroom/id/497088>.

- **Optimizing Security, Reliability, Resilience:** The mantra for today's discerning network operators and users is "I want it all and I want it now." Network operators want to maintain constant vigilance and control over their infrastructure, however one attribute cannot be at the expense of another. For example, strong security or granular visibility must not come at the expense of performance or ease of use. The net-net is in today's highly competitive environment, compromise is not an option—network operators and users want it all.

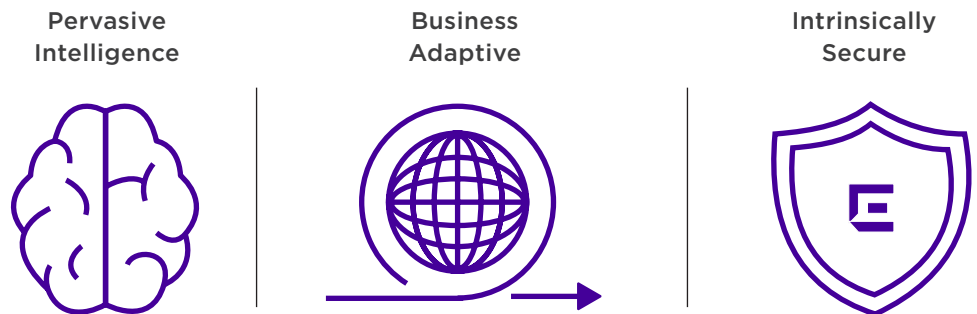
Introducing Smart OmniEdge

Extreme's strategy for the Smart OmniEdge begins with re-thinking the way edge networks are conceived, designed, delivered, deployed, and managed. Instead of thinking from the network out, our approach is from the customer in.

At the core of our strategy is delivering a **superior customer-driven experience**. Smart OmniEdge delivers a consistent customer-driven experience regardless of architecture, location or consumption model.

The three key pillars to Extreme Networks Smart OmniEdge solution are:

- Pervasive Intelligence
- Business Adaptive
- Intrinsically Secure



Transforming the Edge Experience

Figure 1: Extreme Networks Smart OmniEdge

Pervasive Intelligence

Better intelligence is paramount for Enterprises to be able to grow their business. Retailers may want better insight into the movement of shoppers—where they enter, where they move to and for how long. With this information, they can make better decisions on how best to set up a store and where staff should be located to better serve the needs of their customers. In contrast, hospitals may need better visibility into the location of medical equipment and staff to optimize their environment and workflows to improve patient outcomes.

Extreme Networks Smart OmniEdge provides the pervasive intelligence needed to better engage users and drive both business and operational transformation. Key capabilities include:

ExtremeAI for Smart OmniEdge

- Extreme leverages artificial intelligence and machine learning in its new ExtremeAI capability to deliver a better networking experience for both IT and the end user. ExtremeAI for Smart OmniEdge directs cognitive intelligence to the complex task of RF management, one of the most challenging and time consuming tasks that IT operations and support face. By automating all aspects of Wi-Fi RF management, including configuration, dynamic tuning and optimization, load balancing, troubleshooting, diagnosis and correction, the network continuously learns and adapts to the enterprise's Wi-Fi environment, proactively ensuring a best in class experience for mobile users and reducing the maintenance and troubleshooting burden on IT.



Figure 2: Benefits of ExtremeAI for Smart OmniEdge

Automation with Extreme Fabric Connect

- Extreme Networks Smart OmniEdge provides “connect anything, anywhere” simplicity for the wired and wireless edge. Our Fabric Connect technology simplifies network configuration through network service automation and the dynamic secure attachment of wired and wireless users and IoT devices. Unique in the industry, it provides one unified architecture end to end, streamlining and simplifying the network with its delivery of all network services using a single technology and enabling the creation of end to end network segments with ease and scale. In addition to Extreme Edge switches supporting Fabric technology, they also support advanced edge functionality such as uPoE, IEEE 802.1br, multi-rate and application telemetry to provide a smart, simplified, wired edge.

Pervasive APIs

- Extreme Smart OmniEdge delivers pervasive APIs that offer the data intelligence, insights and contextual information needed to personalize engagement and enable programmability of the entire infrastructure. It includes an extensive API available both on-premise and in a multi-tenant cloud (native to the platform, designed and built to deliver on an “API-first” vision) that empowers organizations with an automated, orchestrated network and services infrastructure. This API can be used to integrate third party vendors into a symbiotic network eco-system as well as dynamically program the network infrastructure and its associated policies to respond to changes in business needs

Business Adaptive

No two businesses are the same. Enterprises desire their choice of architecture and consumption model, centralized, distributed, premised-based, private cloud, public cloud, or a combination of these. Though most network vendors offer a choice, solutions are typically based on multiple, independent solutions, each with different operating systems, features and management, and do not support combinations of deployment modes, hybrid choices or single pane of glass management.

Extreme recognizes that adaptability is key to enabling Digital Transformation. Our Smart OmniEdge solution can address all your business needs, while providing investment protection through its ability to quickly adapt to changing market dynamics without the need to rip and replace the infrastructure.

Consumption Model Agnostic

- Within the consumer space, how users consume products and services has changed rapidly in recent years. Consider, for example, the music industry. In the span of less than a generation, consumers have transitioned from purchased vinyl to CDs to iPods to subscription based services, such as Spotify. For Millennials, it is difficult to imagine a time where cloud or subscription based services were not available. For them, the options are endless—they may purchase and download their favorite songs to their devices for 24/7 access, while at the same time subscribe to a monthly subscription service like Spotify. The key is choice and experience. Regardless of how they “acquire” the music, it sounds the same. Enterprise IT needs to evolve in the same manner.

- With Extreme's Smart OmniEdge, enterprises can acquire and provision edge services quickly and easily, seamlessly deploying irrespective of the consumption model (hardware, software or as-a-service). The ExtremeCloud offering can be delivered as a service or an appliance, while ensuring users a consistent experience. More-so, Smart OmniEdge's unique flexibility provides enterprises the agility required to grow and adapt quickly as their business needs change, while protecting their investment and realizing a greater ROI. If your business needs change and you require a different consumption option in the future, you can rest assure that the network can transform without a rip and replace of the infrastructure.

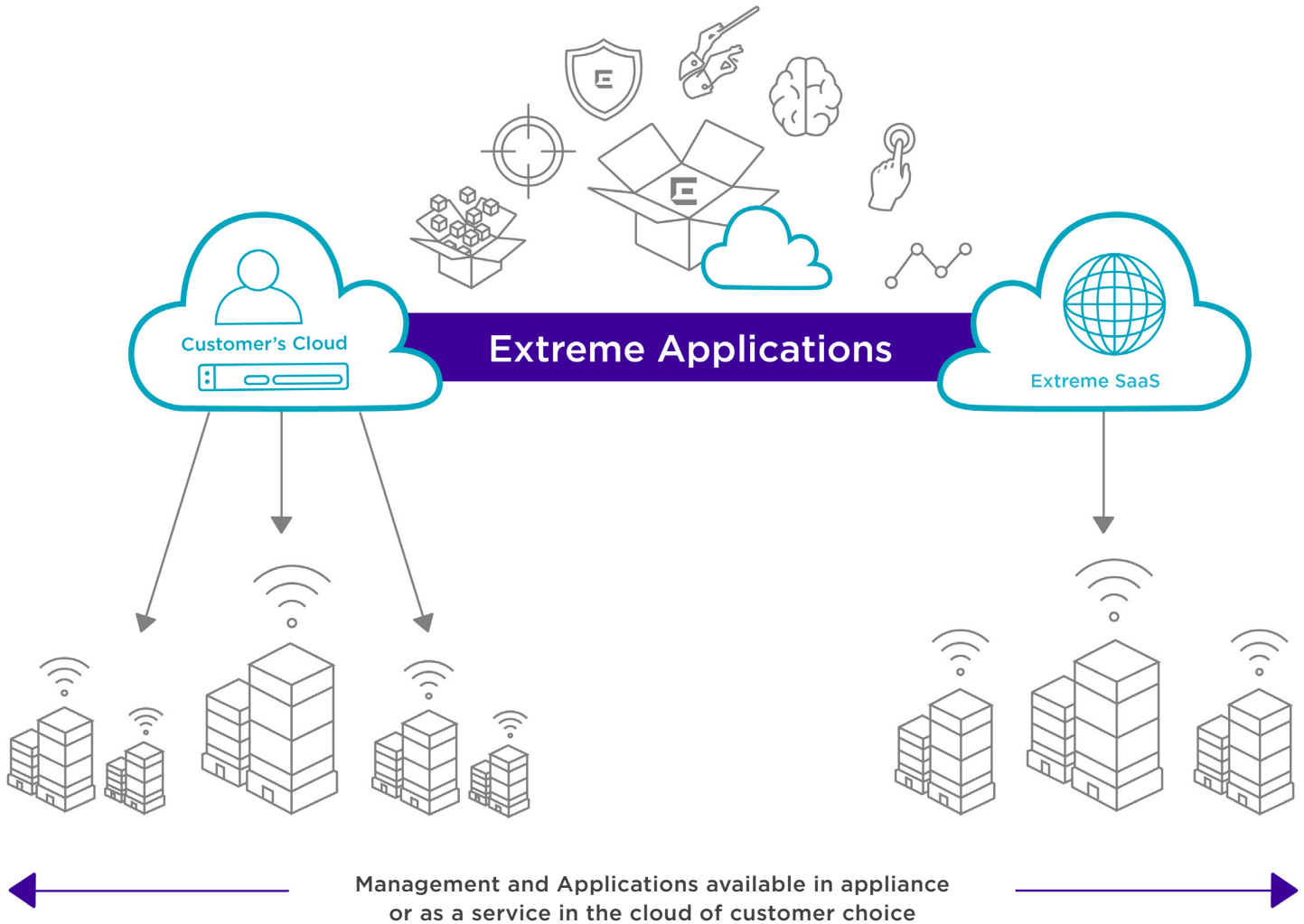


Figure 3: Smart OmniEdge offers a flexible consumption model, with a consistent user experience

Infrastructure Agnostic

Unlike solutions that lock you in to one architecture or deployment model, Smart OmniEdge can transform in lock step with your business. It offers consistent hardware, management and services across all deployments types.

Intrinsically Secure

Network and data breaches can happen to anyone at any time. Every minute of every day, small businesses, enterprises, government agencies and critical infrastructures face cyberattacks from lone-wolf hackers, disgruntled employees, organized crime networks and nations-state actors. The network edge is the first line of defense.

Extreme Networks Smart OmniEdge strengthens security across wired, wireless and IoT environments. Highlights of security capabilities include:

- Integrated and automated compliance checks, threat detection, intelligence and mitigation from the time of an IoT device onboarding until the completion of the user's session.
- Extreme unified wired and wireless and policy-based architecture orchestrates and manages the ubiquitous access of users, devices and IoT devices. For wireless IoT devices, several Extreme APs include integrated BLE/802.15.4 radios to enable on-boarding and securing of Bluetooth Low Energy (BLE) and Thread enabled IoT devices. Extreme is currently the only Enterprise WLAN vendor to support the Thread Networking Specification for Smart Building and Smart City IoT implementations.
- Extreme Defender for IoT (formerly known as Extreme Surge) simplifies IoT onboarding and security for healthcare organizations. Optimized for older wired devices with limited, if any, embedded security features, Defender for IoT applies policies to the IoT device through a unique adaptor and provides end to end isolation of groups of IoT devices quickly and easily. With healthcare tailored, easy to use workflows, Defender for IoT allows medical staff to both securely on-board and move their medical devices around the healthcare organization without IT intervention.
- Extreme fabric technology provides automatic onboarding for user and devices, and granular segmentation end to end.
- Extreme access points support strong DPI capabilities, with layer 2 and 3 stateful firewalls and layer 7 application visibility and control, allowing the inspection and control of traffic right at the access point.
- For advanced wireless security, we protect the airwaves (Wi-Fi RF) with Extreme AirDefense for Wireless Intrusion Detection and Protection.

Smart OmniEdge Framework

The framework for Smart OmniEdge is a unique set of architectural, strategic, product and service offerings that enable unprecedented intelligence, security, and adaptability for Enterprises. It comprises a secure, unified wired and wireless infrastructure, managed through a single pane of glass and complemented by a broad portfolio of applications.

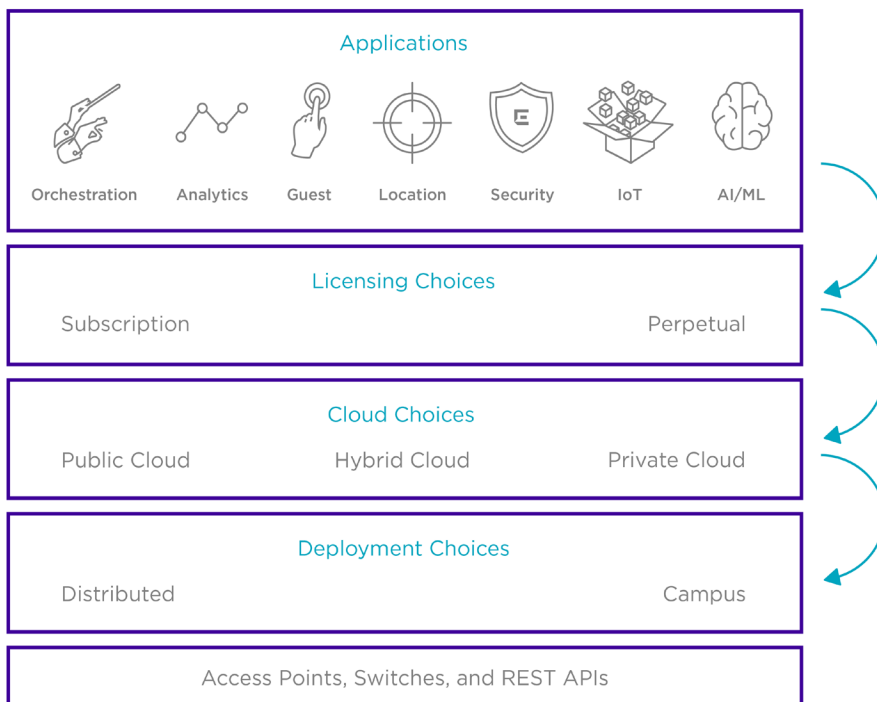


Figure 4: Smart OmniEdge framework

New technologies being introduced as part of the Extreme Networks' Smart OmniEdge launch are designed specifically to enhance the edge network experience, and include:

- **ExtremeAI for Smart OmniEdge** - Provides customers technological advances in Wi-Fi RF management that save time, effort and money, while improving the user experience.
- **ExtremeCloud Appliance** - Designed for customers who love the simplicity of ExtremeCloud™ and want an on-premise solution, ExtremeCloud Appliance delivers cloud-like simplicity, management with tightly integrated services and features on-premise deployments require, complemented with simplified licensing. ExtremeCloud Appliance is also available as a virtual machine (VM) for customers that have their own private cloud services.

- **Extreme Extended Edge Switching** – Delivers an innovative technology that collapses multiple network layers into a single logical switch, enhancing the intelligence of edge switches, while flattening the network and eliminating deployment complexity. The result is a simplified operational model that reduces costs.
- **Extreme Defender for IoT** – A comprehensive solution that simplifies onboarding and securing of wired IoT devices. Extreme Defender for IoT provides centralized visibility and management, and connects via a secured transport with the ExtremeCloud Appliance, to ensure secure access of IoT devices onto the network, analyze traffic flows and pinpoint anomalies. The solution works with Extreme FabricConnect™ or over third-party networks to protect IoT devices, and is ideal for healthcare environments.

Smart OmniEdge is complemented by Extreme Support, Services and Financing solutions.

- **Extreme Support** – Rated Number One in the industry in a Gartner peer review, Extreme’s talented and highly-trained support professionals are a 100% in-sourced team of experts in products, services, and applications².
- **Extreme Services** – Extreme Networks offers a diverse range of services and solutions, all built to maximize the effectiveness of your network to fuel business growth, and create a long-lasting partnership. Partnering with a networking expert who can offer robust services, from initial consultation to ongoing support, is your key to harnessing digital transformation. Whether your IT staff is struggling to stay up to date on emergent technologies to help grow the business, or is tasked with making the most out of limited resources, Extreme Networks offers robust, cost-effective services and solutions that will solve your network challenges. Extreme Services can help you transform your network from an IT delivery system into an ongoing generator of innovation and revenue growth.
- **Extreme Financing Solutions** – With Extreme, you can acquire your solution today and pay nothing for the first 90 days when you finance through Extreme Capital Solutions. It’s that simple. You can conserve valuable capital and meet your business needs with the 90-Day No Pay Program from Extreme Capital Solutions.

² ZK Research: “Is Your Edge Network Ready for Digital Transformation?”, 2018

Conclusions

The network edge is the new battlefield. The confluence of technology, users, devices and applications is creating an unprecedented opportunity and challenge. Done right, it can fuel innovation and business growth, done incorrectly, it can hinder your success and put your goals at risk.

The availability of Smart OmniEdge from Extreme Networks represents a breakthrough in helping you accomplish your business imperatives. It provides operational efficiency via AI/ML and automation, new customer experiences via pervasive intelligence, diversified business models with our adaptive multi-cloud solution and strong network security. Regardless of the diversity and complexity of the environment, one thing remains constant—a consistent customer-driven experience.

Smart OmniEdge truly provides a new framework for how edge networks should be designed, deployed and consumed.

Extreme Networks is ready to take on any network edge challenge. We're ready to show you how Smart OmniEdge can benefit your network—and your organization—today.

For more information, please contact Chi Corporation, your authorized Extreme Partner.



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