be.SDx

Making the net work.

Overview

be.SDx bundles network management: The easy-to-use cloud platform allows you to centrally set up, manage and control networks anywhere, anytime and without physical device access.

All components, from the router to access points, are controlled across customers and locations. Create future-proof networks by providing efficient rollouts, flexible management, and quick updates.

The result: less work, better service, new opportunities.

Product Highlights

- Automatic VPN rollout across the entire network
- Zero-Touch Provisioning for devices
- Centralized application definition and prioritization
- Proactive monitoring along with smart recommendations
- Performance optimization through Policy-Based Routing
- One-click configuration for hundreds of devices
- Rights and roles under control in a multitenant system
- Flexible pay-as-you-grow subscription model

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The way SME's have used their IT networks has not experienced large changes since IP-based communication started and has reached a peak where it has become a standard for virtually all companies and corporations.

However, it's clear that we are now beginning to experience a huge change in the IT and Telecommunications market, with the introduction of SDN, or Software-Defined Networking. This new technology is being taken onboard by SME's because their network needs have changed drastically.

Cloud services are used much more frequently for all types of tasks within SME's, requiring highly networked communication technology, large bandwidths, mobile employee connectivity, increasingly frequent changes in hardware and configuration, as well as higher control, safety and disruption requirements.

be.SDx cloud management solution solves all these new requirements, no matter the company's size or number of locations. Optimal bandwidth is ensured through the flexible bundling of Internet connections. All device types –WAN, LAN and WLAN, can be deployed at sites without field engineers via self-provisioning. VPN tunnels are established instantly. Moreover, being software-defined, the networks are totally centrally managed.
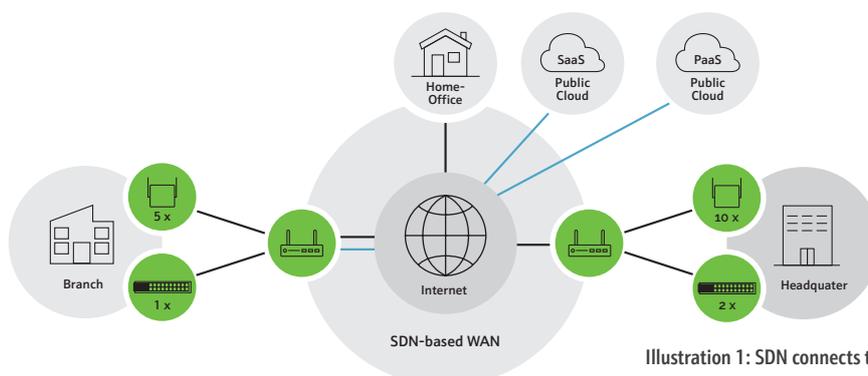

Illustration 1: SDN connects the world

Cloud Management Architecture

be.SDx architecture has been designed to bring our customers into a new environment, allowing for a complete software defined network as a service experience. Hence it is not only SD-WAN, be.SDx is any network connectivity on a software-defined basis (WAN, LAN, WLAN or voice) and the huge added value of having this available on demand. Additionally, be.SDx gives you a unique "pay-as-you-grow" format, which means that you only pay when you subscribe a device to the be.SDx service on a monthly basis.

Deployed in Germany

be.SDx service is deployed on the most secure and leading edge Microsoft Azure Datacenters in Germany. Every be.SDx device, after completing the self-provisioning process, is connected to the be.SDx cloud controller via secure SSL communication. This allows for real-time unified management and control.

Equally important, be.SDx hardware has been engineered for cloud management. This means that all devices are designed with memory and CPU resources to perform filtering, forwarding and encryption operations at the network edge, without depending on the be.SDx cloud controller.

Simple and fast

No matter how many devices and networks are deployed, you can build up and handle your whole customer-installed base on the be.SDx cloud platform. be.SDx has been designed to scale up and be consumed as you grow. It also takes special care of ensuring that your network operations are simple and fast. For this purpose, the be.SDx control panel has been designed to combine quick and guided settings, which significantly minimizes the effort and technical knowledge, while including advanced settings for those users requiring more specific configurations.

be.SDx is an evolutive service with regular feature and functionality updates. New software releases will be staged and tested in our datacenters before deploying them in the customer environment. This process reduces system maintenance to a minimum and provides be.SDx users with new features and service improvements as quickly as possible. From the user's perspective, no updates are needed as the service is consumed by means of the user's web browser.

Service Solution

be.SDx is a holistic solution for WAN, LAN and WLAN at any site, as be.SDx cloud management has been designed to release network administrators from non-efficient and time-consuming tasks. It eliminates local configurations and deployment via device consoles of access points, switches and routers. Expensive investments and complex security and monitoring appliances are unnecessary with be.SDx. In order to carry out the mentioned tasks, be.SDx embeds its own multi-carrier, layer 7 load-balancing technology, its network security module, smart monitoring and troubleshooting system and adaptive bandwidth consumption.

Optimal network performance

be.SDx allows users to achieve a better, yet customized, unified network management experience. Batch operations over a group of devices, application-oriented network design, template-based configuration and continuous and proactive maintenance suggestions guarantee optimal network performance while facilitating day-to-day operations.
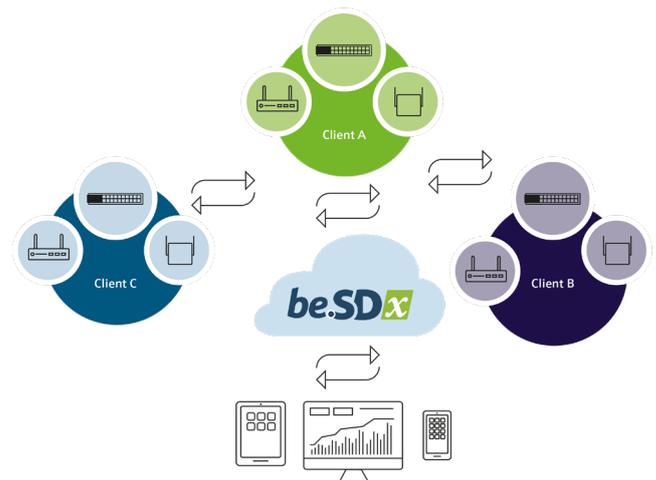

Illustration 2: Next Generation Network Management

Predictive Monitoring

One of the distinctive values of be.SDx is its monitoring capability. Each node informs the controller in real time to know if all points on the network are working correctly or not. On each customer status page, different categories of monitoring information are visually displayed on the Network Analyzer. At a quick glance, you will know if there is an unusually high amount of bandwidth consumption or if any device is overheated. Each report allows to specify the measurement category, the locations to be monitored, and the time period.
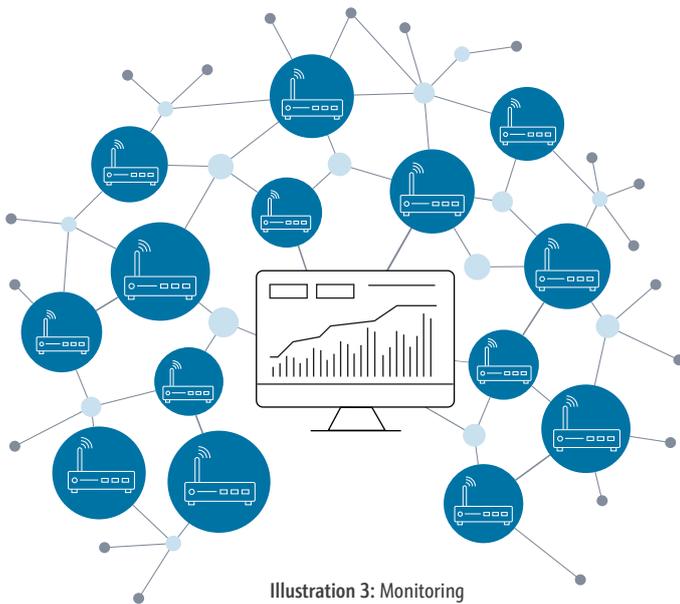

Illustration 3: Monitoring

Notifications

Although the Network Analyzer provides valuable insights into traffic and device statistics, sometimes information needs to be available before problems can even occur. To solve this issue, be.SDx features an alerting system called Notifications, which not only informs about potential problems in the network, but also provides recommendations on how to deal with them. For example, if a customer location is continuously at the bandwidth limit of their internet connection, be.SDx will suggest reevaluating the tariff rate or acquiring an additional line.

Event Trigger

Specific events trigger a notification which pops up on the user interface, where the system can also send an e-mail to one or more recipients. There is a set of pre-defined notifications to cover the most important events, such as the activation of a backup line. Any notification can be customized according to category, trigger event, threshold and grace period. This way be.SDx enables predictive monitoring and maintenance without unwanted surprises for you or your customers.

Data and control plane

be.SDx is designed to differentiate between management traffic and the user's normal business data. Only management-related information like configuration changes or statistical data will be exchanged with the be.SDx controller. All customer traffic, such as emails, shared files and video calls, will be totally independent and not visible for be.SDx.

The independence of user and management traffic has another important advantage. Should connectivity to the be.SDx datacenter fail, internal LAN and Wi-Fi user traffic will continue working as normal, and as long as the sites have WAN connectivity, it will be business as usual. This architecture avoids potential bottlenecks or chokepoints, since all packet processing is performed on-premises.

In the case that a site loses connectivity with be.SDx, configuration and other specific tasks will not be available to be sent immediately. However, all types of statistics and information generated while the connection is unavailable will be stored at site level, and once connectivity is reestablished, it will be exchanged with the central controller.

Cloud Infrastructure

be.SDx Service is located in Microsoft Azure datacenters. This enables us to offer our clients state-of-the-art datacenters at Cloud-Scale. With WAN-Edge applications that operate as distributed systems, every aspect of the physical environment creates an opportunity to drive systems for greater reliability, scalability, efficiency and sustainability.

Redundancy & Resilience	• 36 regions worldwide, with various datacenters per region • Geographically dispersed system replicated within various regions • Microservices are easily replaced in case of a failure • Geo-redundant availability of services
Monitoring	• 24/7 monitoring with 8x5 issue resolution by the next business day • Rapid escalation procedures and data sharing within Service Desk and Monitoring Service
Data Quality	• All data is encrypted at rest • Platform is periodically audited with penetration testing
Capacity	• Monitoring system can scale up/out the resources available • Unlimited amount of device registrations per client
Cloud Services Security	• Every communication is secured by SSL • Role-based access model with delegation of rights • Multifactor authentication for administrators • Configuration changes under continuous logging
Certification	• Joining efforts with Microsoft Azure, be.SDx complies with all major certifications in the industry like ISO 27001, SOC 1 Type 1 and 2, SOC 3, EBA, GDPR, HIPAA, etc.

be.SDx Security

Along with the security based on the availability, robustness and resilience of the infrastructure, we also ensure the security of the management over the network configurations in the platform, comprising both logical security and intuitive rights management.
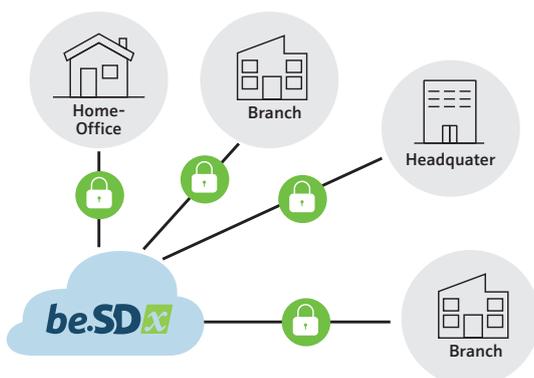

Illustration 4: Automatic VPN rollout

Distributed infrastructures are secured with industry-standard authentication and encryption. Every customer network automatically creates a VPN based on its topology, no matter how many locations and devices. Depending on the application

type, traffic will be sent through the tunnel or directly out to the internet. All passwords in the platform comply with strict policies, such as minimum length and the mandatory inclusion of letters, numbers and special characters.

The rights management inside be.SDx is based on three easy-to-understand roles: Administrator, User and Observer. Each role can be limited to one or several customers within the respective be.SDx account. Additionally, the actions of each user in the system are thoroughly logged, so a system administrator can audit and correct any erroneous changes.

Highest security standards

All user sessions are logged out by default after 30 seconds of inactivity, to avoid data loss or session misuse. The users are notified in an interactive manner, and after the time-out, are asked to log in again to the platform.

All the communications from, to and within our platform are secured using state-of-art mechanisms and signed with SSL certificates emitted by a trusted Certification Authority, ensuring compatibility with any major browser and highest security standards.