Oracle Communications Failsafe SD-WAN

Failsafe Software Defined Wide Area Network (SD-WAN) offers increased network capacity, improved traffic reliability, and delivers a higher quality of experience while lowering costs. Failsafe SD-WAN also enables a secure and consolidated communications infrastructure which delivers application and service deployment flexibility, without sacrificing availability or performance. With the explosive growth in real time applications, distributed workforces and cloud computing, a company's productivity and customer responsiveness have never been more dependent on the WAN infrastructure. Because of this, organizations are turning their focus to their wide areas Networks (WANs) and cloud access networks, knowing that having enough bandwidth to support the increased demand and predictable reliability to ensure continuous application availability are keys to their success.

The cloud is rapidly changing demands on enterprise IT legacy resources. The traditional WAN deployment of the last decade - MPLS circuits and enabling devices, often augmented by separate WAN-Op and firewall equipment - no longer offer enterprise IT the necessary requirements for cost savings, flexibility, bandwidth, manageability and streamlined cloud connectivity. Failsafe SD-WAN offers organizations the unique combination of availability, performance and reliability, yielding a highly resilient remote site with platinum application Quality of Experience

NETWORK OPPORTUNITY AND PROMISE

Failsafe SD-WAN is engineered for maximum business impact in an enterprise network. This is achieved by creating failsafe WANs that offer superior application reliability, while unlocking the benefits of network resiliency and scalable bandwidth. The Failsafe SD-WAN are built on a flexible portfolio that provides key network services including SD-WAN, WAN-OP routing and firewall. The Oracle Communications Failsafe SD-WAN transforms a traditional WAN into a network that is easy and fast to

Key Features

- Easy to use Centralized Orchestration
- Load balance across aggregated bandwidth
- Seamless interoperability between expensive MPLS connections and inexpensive commodity Internet
- Highly scalable for branch office deployments or cloud connections

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deploy, offers increased applications reliability, security and performance while leveraging affordable broadband links that are transformed into an enterprise-class infrastructure. It does this by understanding a company's applications and priorities while adapting automatically to changing conditions and demands. The Oracle Communications Failsafe SD-WAN supports various link types, such as MPLS and broadband Internet, and works well with common services such as WAN optimization. Customers have great flexibility in determining how the SD-WAN is deployed including at the physical edge, the virtual edge, or in the cloud:

- Physical appliances offer an easy to acquire and deploy WAN-edge option that support the features, performance and scale to meet the needs of sites that range in size from large data centers to small office/home offices.
- Companies that want to standardize on commoditized hardware can use the Talari Virtual Appliance VT800, an on-premises software-only appliance, which runs in VMWare vSphere and Microsoft Hyper-V.
- Organizations that need to improve the reliability and quality of their cloud access can leverage Talari Cloud Connect, which delivers easy to deploy and administer failsafe cloud access, deploy the Talari Virtual Appliance CT800, which is available for Amazon Web Services or implement the VT800, that supports Microsoft Azure. All of Talari's cloud solutions can act as gateways to IaaS locations, SaaS application, and Internet sites

All appliances run Talari's patented Adaptive Path Networking (APN) software so regardless of what type of appliance is deployed, customers can rest assured in having identical features as well as a consistent deployment and support experience, which simplifies SD-WAN, routing and firewall administration and reduces support costs.

STRONG SECURITY

IP communications are susceptible to cyber-security threats, including Denial of Service (DoS) attacks, fraud and privacy breaches that result in lost revenue and productivity, poor customer experiences, compliance violations and damages to the corporate brand. The Oracle Communications Failsafe SD-WAN protects IP-based systems and services from these threats and delivers secure real-time communications across trusted and untrusted networks alike.

The Failsafe SD-WAN incorporates Oracle's S.A.F.E. Architecture, a comprehensive vision focusing on Secure networks, advanced Analytics, Flexible deployments and Extensible platforms. The FailSafe SD-WAN

Key Benefits

- Increased resiliency and reliability
- Superior Quality of Experience
- Maintain high network availability
- Continuous uptime for mission critical applications
- Reduce WAN legacy costs
- Fast, Simple Deployment
- Built-in Security protecting IT infrastructure, services, and applications
- Increase Bandwidth performance

architecture ensures the availability of services, systems and applications across disparate networks. It uses dedicated resources to ensure that data in transit cannot be interpreted or compromised. Data sent across public links is encrypted using either 128-bit or 256-bit AES encryption. A stateful zone-based firewall offers packet filtering services and data segmentation using VRF (virtual routing and forwarding) enabling a single appliance to securely host multiple customer or department networks. The Failsafe SD-WAN is also capable of transparently forwarding all internet taffic to the Zscaler™ secure cloud gateway, and running NGFW services by Palo Alto Networks

FAST DEPLOYMENT, EASY CENTRALIZED MANAGEMENT

IT managers frequently encounter interoperability problems when connecting on-premise systems to each other and to cloud communications services. These problems can reduce network agility and reliability, delay projects, increase costs and put investments at risk of obsolescence.

The Talari Easy Edge capabilities allow a tech-savvy central IT team to preconfigure the SD-WAN appliance, which can then be factory shipped directly to a branch or remote location. At the remote location, a non-technical individual may unbox, plug in and power up the device to get connected to the SDWAN. Also, Talari Basic View with Configuration Templates ensures that ongoing configuration and management of the appliance is a breeze.

The Network Control Node (NCN) is the Management/Orchestration point for the Failsafe SD-WAN. Beyond being the central point for SD-WAN and services configuration, the NCN establishes dynamic connections between client appliances. The NCN can be located on-premises or in the cloud with all Failsafe SD-WAN Appliances, except the T510, so that they are eligible to act as the NCN

ASSURED RELIABILITY AND INTEROPERABILITY

Impairments and failures can occur anywhere in a communications network that are difficult to detect, isolate, and repair.   The Failsafe SD-WAN includes a complete set of carrier-grade routing and survivability features that ensure business continuity in the face of network failures and impairments. The Failsafe SD-WAN is a hybrid WAN that interconnects with dedicated multiprotocol label switching (MPLS) circuits plus public Internet connections to build a WAN infrastructure. Regardless of the underlying network, the Failsafe SD-WAN monitors and tracks WAN performance for Quality of Service(QoS) that includes bandwidth reservation and real-time best path selection to create a reliable, high-performance WAN.

Related Solution

- Oracle Communications Security Shield

Related Products

- Oracle Communications Enterprise Session Border Controller
- Oracle Communications Enterprise Operations Monitor
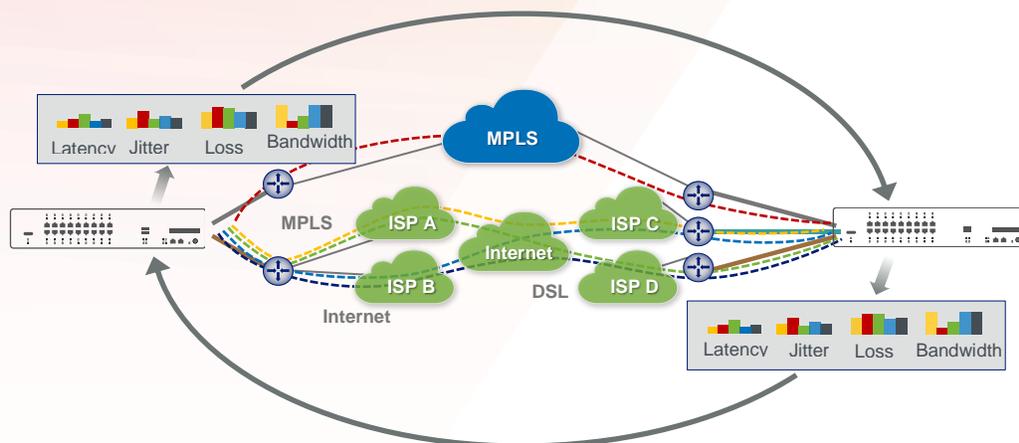
Oracle Communications Failsafe SD-WAN
connects disparate IP networks increasing capacity, reliability, and security

With support for popular Border Gateway Protocol(BGP) and Open Shortest Path First(OSPF) routing protocols, the Failsafe SD-WAN lowers costs and network complexity by eliminating the need to maintain multiple branch devices. Beyond router protocol support, services such as WAN Optimization, DHCP Server and Relay, and Network Address Translation (NAT) are also available. When combined, these capabilities further reduce the need for additional branch hardware including legacy routers or WAN Optimization Controllers. It features carrier-grade 1:1 high availability that continuously monitors the E-SBC's health and routes sessions from active to standby units with no loss in session state or impact to user experience. The E-SBC dynamically routes sessions to protect against failures anywhere in the network. It can optimize performance across multiple SIP trunk services by routing based on observed QoS and balancing loads.

BUSINESS-CLASS CLOUD MANAGEMENT AND APPLIANCES

By leveraging Talari Cloud Connect, organizations can deliver high-availability and predictable application Quality of Experience (QoE) for nearly any SaaS environment. Cloud Connect is an easy to deploy and administer solution that prevents carrier service lock-in. Talari virtual appliances allow organizations to leverage the AWS and Azure marketplaces to easily deploy an enterprise-administered cloud instance that deliver the fill suite of Oracle APN services and capabilities in popular cloud platforms

- **Talari Virtual Appliance CT800 for AWS** runs in the AWS cloud and supports up to 100 Mbps full-duplex and can be the designated network controller for a Talari WAN. The CT800 can provide secure, aggregated cloud access over broadband or Direct Connect links to ensure high quality and reliable access to IaaS, SaaS and Internet locations. AWS EC3 INSTANCE REQUIREMENTS:

Instance Type: c3.2xlarge
Number of CPUs: 2
RAM: 3.75 GB
Storage: 40 GB
Number of Network Interfaces:3

- **Talari Virtual Appliance VT800** supports up to 2 Gbps full-duplex1. It runs in a VMware vSphere virtual server, Microsoft Hyper-V hypervisor or Microsoft Azure cloud platform and provides the same SD-WAN functionality as a physical appliance.
  REQUIREMENTS:
    Processors: 64-bit, 3 GHz or better, with support for Advanced Encryption Standard - New Instructions (AESNI) (e.g., Intel Xeon 5600+)
    Operating System: 1 dedicated Ethernet port, but no more than 7 total Ethernet ports
    Dedicated Storage: 40 GB
    Dedicated Virtual CPUs: 1-4 depending on performance level
    Dedicated RAM: 2-4 GB depending on performance level

PHYSICAL APPLIANCES

The Oracle Communications Failsafe SD-WAN physical appliances include:

APPLIANCE	CAPABILITES
T5200	The T5200 is intended for data centers and large offices and supports an aggregation of WAN bandwidth up to 5 Gbps full duplex. It can act as an edge appliance or network controller for a Talari SD-WAN and WAN edge solution. Containing a combination of RJ45 and 10 Gbps short haul optical ports with fail-to-glass ability, the T5200 is ideal for locations with LAN or WAN side optical infrastructure.
T5000	The T5000 brings reliability and higher bandwidth to large data centers and call centers. It is optimized for large amounts of small packets, making it ideal for VoIP and VDI situations. The T5000 supports up to 3 Gbps full duplex of WAN bandwidth across the union of private WAN links and public Internet connections.
E1000	Designed for medium to large branch locations, the E1000 delivers WAN performance up to 2 Gbps full-duplex across multiple WAN links. The E1000 is designed to bring a

service rich appliance to support next generation WAN edge. The E1000 offers a high degree of service flexibility including being able to host 3rd party software.

E500

The E500 is a 1U rack-mountable appliance that can act as an edge appliance or network controller and is ideally suited for a medium sized data center or a large remote office. E500 supports a total of 1 Gbps full-duplex performance across multiple WAN links and is designed to bring reliability and bandwidth to regional data centers and smaller headquarters.

E100

The E100 is an edge appliance for a small- to medium-sized branch office and supports a total of up to 500 Mbps full-duplex across multiple WAN links. The E100 is designed to bring an easy to install, service rich appliance to support next generation WAN edge. The E100 offers a high degree of service flexibility including being able to host 3rd party software.

E50

The E50 is an SD-WAN solution designed for customers who require an easy-to-deploy and operate multi-service WAN Edge physical appliance to connect small branch-office locations such as retail or mobile sites. It supports a total of up to 100 Mbps full-duplex performance across multiple WAN links while delivering key edge network features including routing, firewall and WAN optimization.

PHYSICAL APPLIANCES SPECIFICATIONS

	E50	E100	E500	E1000	T5000	T5200
Location	Small Site or Home Location	Small-Medium Branch	Medium Data Center	Medium/Large Branch	Data Center Call Center	Data Center Call Center
Max Bandwidth	100 Mbps Full-Duplex	500 Mbps Full-Duplex	1 Gbps Full-Duplex	2 Gbps Full-Duplex	3 Gbps Full-Duplex	5 Gbps Full-Duplex
Control Node			✔	✔	✔	✔
High-Availability		✔	✔	✔	✔	✔
Geo Redundancy			✔	✔	✔	✔
Ports	10x10/100/1000 Mbps 2 Gen Purpose 1 mgnt, 1 Aux	6x10/100/1000 Mbps 5 Gen Purpose1 mgnt	10x10/100/1000 Mbps 9 Gen Purpose 1 mgnt	10x10/100/1000 Mbps 9 Gen Purpose 1 mgnt Opt. 2x10 Gbps or 4 x 1 Gbps daughter card	10x10/100/1000 Mbps 9 Gen Purpose, 1 mgnt	6 x 10/100/1000 Mbps 6 Gen Purpose 1 mgnt 4 Optical Ports
Fail to wire	2 pairs	2 pairs	2 pairs	2 pair standard Opt add 2 pair	4 pairs	2 pair Ethernet 2 pair Optical
Mgnt ports		Serial console Ethernet	Serial console Ethernet	Serial console Ethernet	Serial console Ethernet	Serial console Ethernet
Other ports	Ethernet Port	2 USB 2.0	2 USB 2.0	2 USB 3.0 2 USB 2.0 1 VGA	2 USB 2.0 1 VGA	2 USB 2.0 1 VGA
LCD		2x16			2x16	2x16
Mounting	Desktop(Rack mount option EIA RS-310 standard 1U)	EIA RS-310 standard 1U	EIA RS-310 standard 1U	EIA RS-310 standard 1U	EIA RS-310 standard 2U	EIA RS-310 standard 2U
Size	44mm (W) x 249mm (D) x 137.1mm (H) (1.7" x 7.3" x 5.4")	431mm (W) x 305mm (D) x 44mm (H) (16.9" x 12.0" x 1.7")	426mm (W) x 356mm (D) x 43mm (H) (16.8" x 14.0" x 1.7")	437mm (W) x 650mm (D) x 43mm (H) (17.2" x 26.5" x 1.7")	437mm (W) x 650mm (D) x 89mm (H) (17.2" x 25.6" x 3.5")	437mm (W) x 650mm (D) x 89mm (H) (17.2" x 25.6" x 3.5")
Operating temperature	0 to 45° C	0 to 40° C (32 to 104° F)	5 to 35° C (41 to 95° F)	5 to 35° C (41 to 95° F)	0 to 40° C (32 to 104° F)	0 to 40° C (32 to 104° F)
Storage temperature	-40 to 70° C (-40 to 158° F)	-20 to 70° C (-4 to 158° F)	-40 to 60° C (-40 to 140° F)	-40C-70° C (-40F-158F)	-40 to 80° C (-40 to 176° F)	-40 to 80° C (-40 to 176° F)
Relative Humidity	5% to 90% non-condensing	5% to 90% operating environment 5% to 95% storage environment	8% to 90% operating environment 5% to 95% storage environment	8% to 90% non-condensing	10% to 90% non-condensing	10% to 90% non-condensing
Power	Non-redundant power supply 36 watt power adapter 100-240 volts AC; 50- 60Hz AC input frequency	100-240V, 50-60 Hz, 3-1.5 Amp Max, 200W	600W Platinum Efficiency Power Supply; 100-240 Volts AC; 50-60Hz AC Input Frequency	Redundant hot swappable 740 watt AC power supply 100-240 volts 50-60 Hz	Redundant hot swappable 740W AC power supply 100-240 volts 50-60 Hz	Redundant hot swappable 740W AC power supply 100-240 volts 50-60 Hz