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Zero Trust Network Access
The importance of Zero Trust Network Access (ZTNA) solutions for Corporate Networks

The corporate network is described as trusted on a traditional approach. However, due to the **rise of remote work** and the **increased use of cloud-based applications**, the network perimeter has become more difficult to define. Users are not only accessing the applications through the corporate network but also from **any location outside** the company. It is crucial to understand how to increase network access security in this new paradigm.

44%
Growth in the remote work over the **last 5 years** [1]

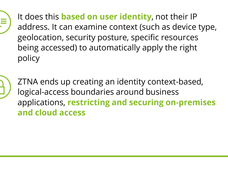
94%
Of all enterprises use cloud services [2]

Sources: [1] NorthOne, [2] CloudAwards

What is the difference between the **Traditional perimeter security** and **Zero trust security** approach?

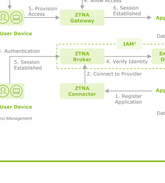
Traditional perimeter security

This type of architecture was designed considering that users are **in the office or site** and all applications are at the **datacenter**. The corporate network is considered a **trusted** network and external connections are **untrusted**.



Zero trust security

Zero Trust Security applies the principle of **never trust**, always verify, by eliminating implicit trust and continuously validating the **identity of the user**, whether inside or outside the security perimeters.



The traditional perimeter is no longer the best practice recommended to fulfil network security requirements of the organizations. As cloud becomes the new datacenter and users continue to work from different locations, **identity needs to become the new perimeter**, by refusing access to any device or process that fails to offer an identity with the correct permissions

What is ZTNA?

ZTNA is one of the SASE (Secure Access Service Edge) architecture components, and aims to replace the traditional network access model with user/application **identity-centric** software-defined perimeters

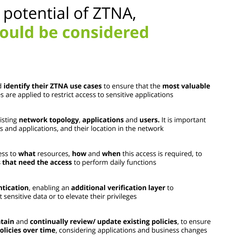
How does it work?

Whenever a user, device, or app tries to access a corporate resource, ZTNA verifies that they are a trusted entity, following the Zero Trust principle **never trust, always verify**

It does this **based on user identity**, not their IP address. It can examine context (such as device type, geolocation, security posture, specific resources being accessed) to automatically apply the right policy

ZTNA ends up creating an identity context-based, logical-access boundaries around business applications, **restricting and securing on-premises and cloud access**

Simplified architecture

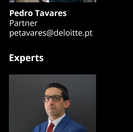


As organizations continue their Zero Trust Security journey, it is expected that more companies will change from their traditional VPN to ZTNA solutions. Gartner predicts that **"By 2023, 60% of enterprises will phase out most of their remote access VPNs in favor of ZTNA."**

What are the main differences between VPN and ZTNA?

Virtual Private Network (VPN)

VPN allows remote users to **connect to the company network** to access internal applications/ services, creating a secure tunnel between the **user** and the **network**

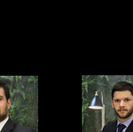


VPN Features

- The **user connects to the corporate network** using internet or MPLS connections
- The user **has visibility** over unnecessary corporate services and applications
- The company has **partial visibility** of the user activity (e.g., only the up/ downtime)
- The VPN concentrator is **visible from the Internet** (more exposed to cyberattacks)
- User experience can be degraded by low **latency** or **inefficiency** of communication

Zero Trust Network Access (ZTNA)

ZTNA allows remote users to **connect to specific internal applications/ services**, creating a secure tunnel between the **user** and the **application**



ZTNA Features

- The **user connects to an application/ service** through the internet
- Ensures user **least privileged access** and **visibility** to corporate applications
- The company can have **full visibility** of the user activity (e.g., which application is used)
- Applications/ services are **protected** and **invisible** from the Internet
- Better user experience when using ZTNA due to the **proximity of cloud processing**

To ensure that organizations take the full potential of ZTNA, there are a set **of best practices that should be considered** when implementing the solution

Identify ZTNA use cases & prioritize critical assets
Before the implementation, organizations should **identify their ZTNA use cases** to ensure that the **most valuable business assets are protected first**, and policies are applied to restrict access to sensitive applications

Ensure full visibility over existing architecture
Ensure that there is a **clear visibility** over the existing **network topology**, **applications** and **users**. It is important to understand who are the users, existing devices and applications, and their location in the network

Apply the principle of least-privileged
Determine **who** in the organization requires access to **what** resources, **how** and **when** this access is required, to ensure that access is **only granted to resources that need the access** to perform daily functions

Enable user Multifactor Authentication (MFA)
Verify the user identity with **Multi-factor Authentication**, enabling an **additional verification layer** to authenticate users attempting to access the most sensitive data or to elevate their privileges

Update/ review policies regularly
Ensure that there are processes in place to **maintain** and **continually review/ update existing policies**, to ensure that they regularly **improve** and **refine access policies over time**, considering applications and business changes

How can Deloitte help?

Our team combines technology and engineering expertise with business strategic skills that allow us to be a unique partner for the whole IT and OT transformation journey

- Trust-worthy advisor for **every step of Zero Trust Network Access solution**, with a proven methodology from vendor assessment to design until implementation
- **Unique technology and engineering offerings**, with a proven track record in network and security transformation programs
- Multidisciplinary specialized teams, which combine the **high technical expertise** with **business and strategic consulting teams**

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