

## netPulz Virtual Private LAN vs. Traditional MPLS WAN



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LAN**

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## Business Problem

Traditional WAN's are complex and every router that is added to the network makes it more so. Complexity adds risk as well, from failure of components to human error creating additional vulnerabilities. This is particularly true when considering the use of proxy servers, QoS configurations, dynamic routing or redundant links. Additionally, traditional WAN's, especially those using MPLS, are expensive and service providers are slow to provision them. Gartner estimates that enterprises will need 28% more bandwidth compounded annually for each year through 2017. Paying for that additional bandwidth will be an added burden for IT departments.

## Telecom Today

As many as 50% of all companies use the Internet in place of traditional WAN's for at least part of their network. Using the Internet backbone is clearly much less expensive than MPLS, and it can be provisioned much more quickly. In fact, the cost of transporting bits with the ordinary Internet backbone is 30x to 100x less expensive than MPLS.

While it is true that the Internet is a best-effort service, and MPLS services support end-to-end QoS, the investment in the infrastructure supporting the Internet means that the outages and congestion that occurred in the past are disappearing. Bandwidth is abundant, and given its low cost, Internet services can be purchased from multiple vendors simultaneously and in such large quantities that reliability issues almost vanish.

Considering the abundant Internet bandwidth, and the fact that VPN's are often seen as secure as dedicated circuits, using the Internet as a WAN becomes a viable alternative to traditional MPLS WAN's.

## Solution

### netPulz Appliance

- 1-U Miniserver
- Traffic is Encrypted
- Traffic is Audited
- Remotely Managed

When paired with the Internet, the netPulz Transparent Network Appliance, ([www.netPulz.com](http://www.netPulz.com)) from Advans IT Services, Inc., ("Advans", [www.AdvansIT.com](http://www.AdvansIT.com)), makes for a compelling package to create a Wide-Area Network without the need for traditional network gear. The netPulz appliance is a 1-U miniserver that Advans ships preconfigured to the sites you want to connect. All that is required is that the netPulz appliance be racked and stacked.

The netPulz appliance may be connected at any level of the network infrastructure inside the LAN. Advans remotely manages the

appliances as a service, which includes 24x7 monitoring for a modest support fee. A virtual appliance is also available and they are generally used to make hybrid cloud infrastructures and/or virtual private clouds within a public cloud. Having a virtual private cloud within a public cloud, allows companies to manage their own routing within the cloud, providing for an additional layer of security while still enjoying the low cost of public clouds.

Advans' netPulz technology uses software to create a secure, encrypted tunnel across the Internet backbone, (or any telecom circuit), that will automatically prevent packet collisions between the LAN's without requiring any changes to your current hardware configuration or address space. The ability to preserve the address space makes this feature ideal for backup and recovery and disaster recovery solutions, as well as cloud migrations.

The netPulz appliance, when used with multiple circuits, has the capability for fail-over and load balancing between them. One strategy is to use circuits provided by two different service providers, virtually eliminating the possibility that service will be lost on both circuits simultaneously. Bandwidth can also be added incrementally as needed. With abundant bandwidth, QoS and application performance issues, even with the Internet backbone, are essentially eliminated and WAN optimizers are not necessary.

Additionally, Citrix and dedicated VPN's are no longer needed because all applications run natively in a netPulz Virtual Private LAN ("VPLAN"). netPulz is the only technology that can create a VPLAN using the ordinary Internet backbone. As a result, any application hosted in a corporate datacenter or cloud may be accessed over the Internet, regardless of location, as if the user were part of the LAN.

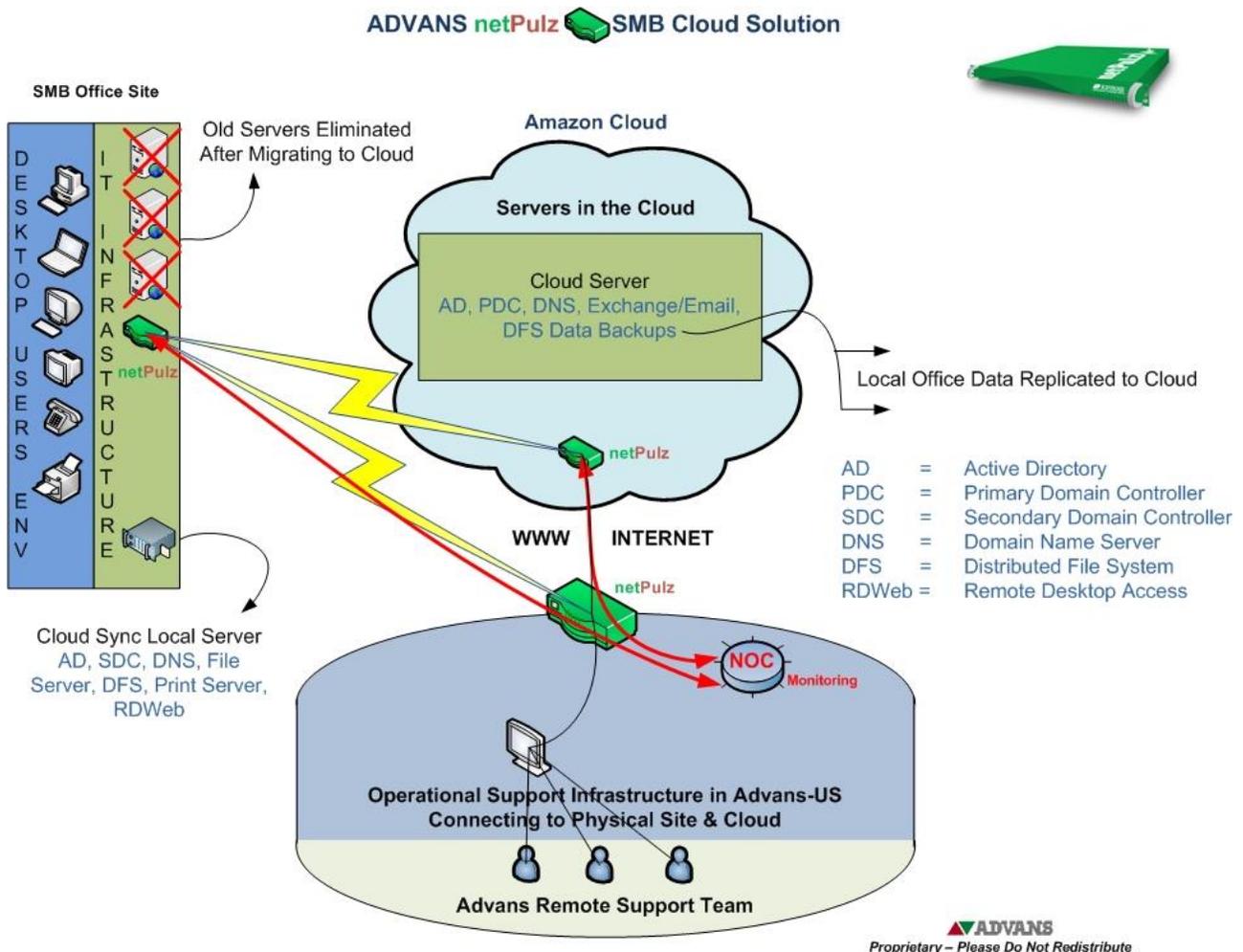
Use of netPulz appliance means that there is no need to build and maintain a traditional WAN between sites. A netPulz appliance elastically manages the available bandwidth without the need for a network engineer to configure or support them. Simply select an ISP to provide ordinary Internet access with the desired bandwidth, and the netPulz appliances optimize whatever bandwidth is available to securely connect sites and clouds.

Using netPulz does not require reconfiguring any routers, firewalls or any part of the existing network infrastructure. The appliances are simply added to the existing network infrastructure and given access to whatever parts of the network that needs to be connected to another site(s). Once accessible to the Internet, the netPulz appliance establishes encrypted connection to all its other programmed devices

with nothing to add, reconfigure, disable or remove in the existing network.

## Example

An example of how site-to-site connectivity is achieved with a netPulz VLAN is shown in the diagram below. Here, Advans connected a customer's LAN to a public cloud. Advans then migrated the customer's servers, applications and data to a virtual private cloud within a public cloud created by a netPulz virtual appliance.



Advans' customer was then able to eliminate physical servers in its LAN. Doing so removes the need for buying servers and network gear and maintain them. Additionally, the use of a cloud provides for simple offsite backups and disaster recovery solutions. Disaster recovery occurs at the network level, so that in the event of a disaster, when the primary site is unavailable, traffic is automatically rerouted to the disaster recovery site without manual intervention.

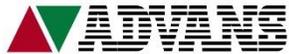
## Conclusion

The need for bandwidth grows constantly and represents a significant expense for organizations. Being able to transmit bits for 30x to 100x times less cost of MPLS, by using the Internet, results in an enormous savings. With bandwidth demand growing, organizations can quickly provision additional bandwidth and add it incrementally with netPulz yielding while driving down telecom costs.

Having the ability to deliver complex routing, as in a WAN, but with the low cost similar to using a VPN, applications can be delivered in whatever manner is most advantageous to an organization. Lastly transferring CapEx costs to OpEx with a managed service delivers even more savings with greater flexibility, without sacrificing application performance.

## References

1. "5 Minute WAN: Rapid WAN Deployment with netPulz", Advans IT Services, Inc., white paper, <http://www.netPulz.com>
2. "University of Massachusetts Deploys the Advans netPulz Transparent Network Appliance for Data Warehouse Upgrades", Advans IT Services, Inc., white paper, [http://www.advansit.com/pdfs/UMass\\_Summit\\_Upgrade-Advans\\_netPulz\\_Virtual\\_WAN.pdf](http://www.advansit.com/pdfs/UMass_Summit_Upgrade-Advans_netPulz_Virtual_WAN.pdf)
3. "Advans Global Operations Center", Advans IT Services, Inc., blog, <http://advansit.wordpress.com/2014/08/21/advans-global-operations-center/>
4. "The 2014 State of the WAN Report", Ashton, Metzler & Associates, <http://www.webtorials.com/main/resource/papers/webtorials/2014-WAN-SotM/WAN-2014-SotM.pdf>
5. "Internet as WAN – MPLS: Dead WAN Walking?" Jessica Scarpati, Tech Target Network Evolution, June 2014.



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