

Cloud Migration with netPulz



*Advans IT Services, Inc. White Paper
January 2015*

Cloud Migration / netPulz / Virtual Infrastructure / Virtual Private
Cloud

Cloud Migration with netPulz

Business Problem	3
Solution	3
Cloud Migration	4
Conclusion	7

Business Problem

A mid-sized CPA firm, with outdated servers, but current software, was experiencing frequent outages and an increasing amount of maintenance from its local IT support vendor. Furthermore, the local IT vendor tried to persuade the firm to completely replace all the existing servers with new servers, without suggesting a cloud option. A decision needed to be made as to how best to upgrade the infrastructure and provide ongoing support. Additional considerations involved creating a backup and recovery strategy, having a disaster recovery plan and the costs associated with all these options.

Advans IT Services, Inc., (“Advans”, www.AdvansIT.com) proposed migrating the physical infrastructure, i.e., servers, applications and data, to the cloud to avoid future hardware replacements, eliminate outages due to hardware failure, and to get the CPA firm “out of the server management business.”

However, physical to virtual migrations in the cloud can be difficult, expensive and time consuming given the networking complexities. Therefore, developing a migration path that would be cost-effective and not interrupt day-to-day operations had to be developed.

Solution

netPulz VPLAN

- Virtual Private LAN
- Internet Backbone
- Encrypted Tunnel
- Seamless Connectivity

The netPulz Transparent Network Appliance from Advans (www.netPulz.com) embeds the complexities of networking in software hosted on the appliance. By creating a Virtual Private LAN, (“VPLAN”) between the office LAN and the cloud, Advans has created a site-to-site managed service VPLAN connection as a WAN replacement. Furthermore, Advans remotely manages the appliances so there is no local administration. Generally, the only administration required is for making configuration changes to the netPulz network, as the netPulz software manages the network automatically.

The netPulz appliance is the only networking technology capable of creating a Virtual Private LAN using the ordinary Internet backbone. This is significant, since ordinary Internet connections are far less expensive than dedicated telecom circuits.

The advantage of a VPLAN over a traditional WAN, is that it is much simpler for the end user since it seamlessly connects the sites at either end of the connection. Both locations appear to the end user as part of one local-area network, even if one side of the network is a cloud. Managing such a network offers flexibility that a traditional WAN

cannot match, and it is this architecture that makes cloud migrations very easy.

netPulz Appliance

- 1-U Miniserver
- Advans manages remotely
- Traffic is Encrypted
- Traffic is Audited

The netPulz appliance is a 1-U miniserver that is shipped preconfigured to the sites to be connected. They are installed in less than 5 minutes, with no network engineering skills necessary. A virtual appliance is available and is used to create virtual private clouds in public clouds. Once racked and stacked, the appliances automatically create their programmed connections.

Advans' netPulz technology creates a secure, bi-directional, encrypted, tunnel across the Internet backbone that prevents packet collisions between the networks (dedicated circuits may also be used). The same IP addresses and subnets can be used at multiple sites, such as in the local office and the cloud, which facilitates the cloud migration.

This means that the cloud servers can use the same IP addresses that are currently in use by the physical servers in the LAN. Any hard coded IP addresses in application software need not be changed, which eliminates the need for extensive network reconfiguration and facilitates application functionality testing.

This feature also provides for an automatic network switchable disaster recovery solution. In a disaster, if the primary site is unavailable, the netPulz appliance will automatically shift network traffic to the disaster recovery site without manual intervention.

As a technology agnostic solution, the netPulz appliance works with no impact on the existing network infrastructure, as netPulz routes packets automatically without requiring any changes to the current network, i.e., routers, firewalls etc. The appliances are simply added to the existing network with nothing to add, reconfigure, disable or remove.

Cloud Migration

netPulz for Cloud

- Easy Offsite Backup
- Disaster Recovery
- Local Fail-Over
- Virtual Private Cloud

Deploying the netPulz VPLAN for this situation required installing a virtual netPulz appliance in a cloud and hosting a physical netPulz appliance in the CPA firm's LAN. A cloud server was also created to host the primary domain controller and DNS.

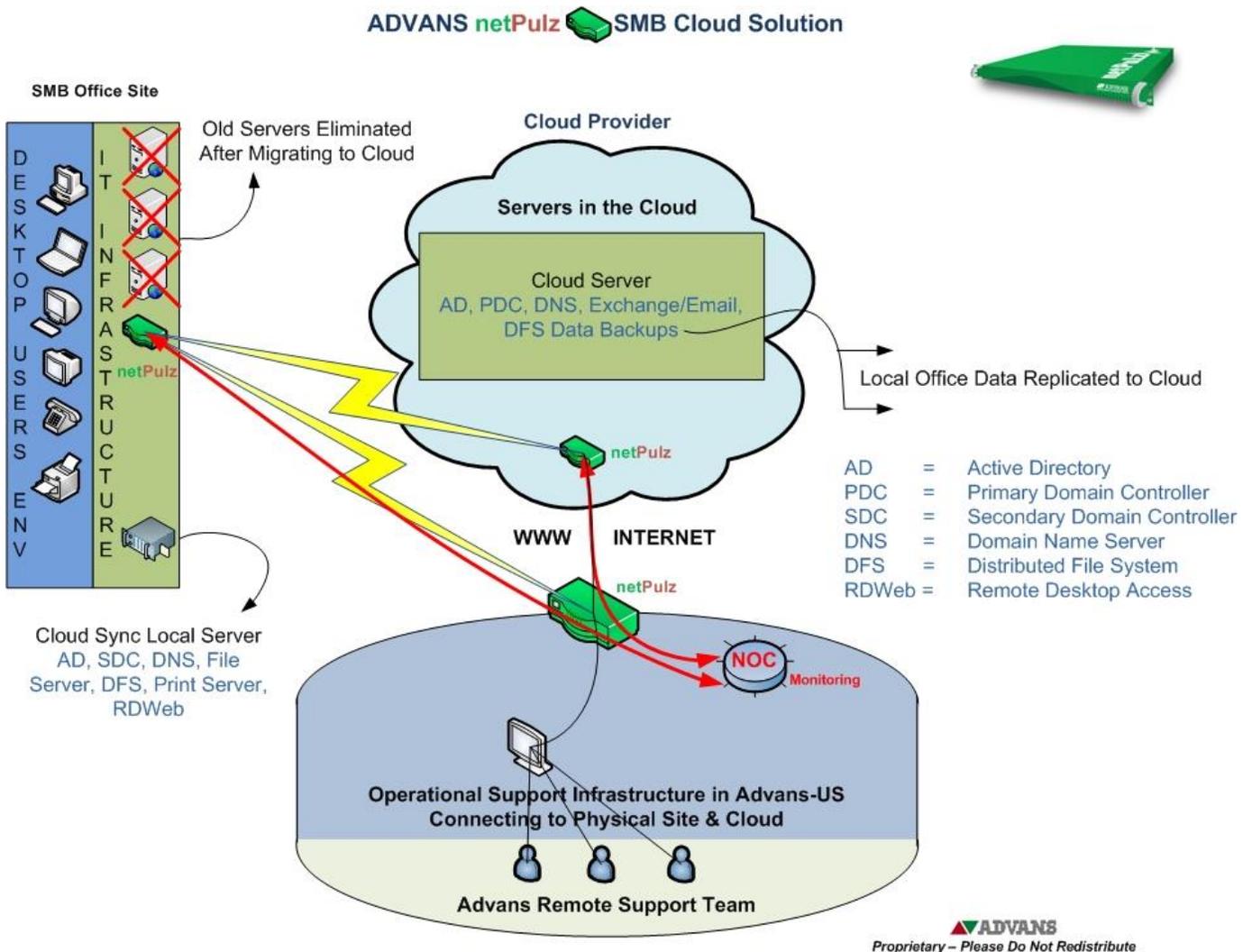
A local server was placed in the office LAN to host the secondary domain controller, a print server for local printing, and a file server to ensure good application performance for network hosted executable

files. Such a server, however, is not always necessary, and alternatively these applications can be hosted on a netPulz appliance.

The next release of the netPulz appliance will include a Cloud File System server and a Virtual Desktop Infrastructure solution. These features are designed for small to mid-sized businesses to have a complete managed service cloud solution hosted on an appliance.

Once the cloud-based applications and databases were configured, replication was set-up between the office LAN and the cloud for locally hosted executable applications. Lastly, antivirus and security software was installed on all the cloud servers and local desktops.

The advantage of using a netPulz VPLAN, is that any application architecture is supported as if they are hosted in a local-area network, (see diagram below).



Advans Services

After the Cloud Go-Live, Advans provided a number of services for the customer:

- Advans 24x7 Remote Support
- Advans Network Operations Center (“NOC”)
- Online Ticketing for Break/Fix and Change Control

All of these services are available with netPulz as the netPulz VPLAN provides remote administrative access from the Advans Support Center to the following:

- Public Cloud
- The netPulz appliance in the office LAN
- The file server in the office LAN
- The desktops in the office

Using netPulz in this way eliminates the need for Citrix and remote administrative tools, such as LogMeIn, since all desktops and servers are part of one VPLAN. As part of the monthly fee the Advans NOC and Remote Support Center are included in the Virtual Private LAN managed service.

The Advans NOC monitors the entire infrastructure, i.e., both the cloud and office, and sends alerts to support administrators. Remote support also virtually eliminates expensive site visits.

Benefits

Advans designed the cloud migration and support model to be operational expense neutral for the customer. The cloud, NOC and 24x7 remote support fees are delivered for the same monthly cost as the local IT support company that was supporting the office previously. However, two major cost reductions are realized with this solution:

netPulz Network

- **No Servers to Buy**
 - **Eliminate CapEx**
 - **Reduce OpEx**
 - **No Worry**
- No servers or network gear to buy
 - No additional ad hoc support charges (unless a rare site visit is required)

From a capital expense perspective, the netPulz appliances added to the customer’s network were less expensive than the replacement servers would have been. Therefore, even with the netPulz solution and the cloud migration costs, the customer receives a break-even solution in the first year.

Going forward, the customer eliminates the capital expenses of buying and replacing servers and most of the network gear usually required to run the office LAN. Further savings will be realized when the virtual desktop solution is released, and customers will no longer need to buy desktop and laptop computers for their offices. The netPulz appliance already has the ability to provide for local printing. Removing desktops and laptops from the office also eliminates most of the break/fix issues for SMB's.

Conclusion

With a netPulz cloud solution, the customer no longer must replace aging servers and network gear. All files and data are automatically backed up and there is now a disaster recovery plan in place ensuring business continuity. Even though Advans has a 24x7 support model in place, the customer now spends less for IT support than it did previously for 5x8 support. Additional variable expenses of separately billed site visits have been virtually eliminated.

Advans' VPLAN and Cloud Managed Service delivers lower IT support costs with far greater features and benefits than locally hosted, physical IT infrastructure.

References

1. "5 Minute WAN: Rapid WAN Deployment with netPulz", Advans IT Services, Inc., white paper, <http://www.advansit.com/?q=node/41>
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
3. "Advans Global Operations Center", Advans IT Services, Inc., blog, <http://advansit.wordpress.com/2014/08/21/advans-global-operations-center/>



Cloud Migration with netPulz
January 2015
Published by Advans IT Services Inc.

Authors: Paul Angelo, Peo Nathan, Siva Gurunathan, Advans IT Services, Inc.

Advans IT Services, Inc.
65 Boston Post Road W
Marlborough, MA 01752
U.S.A.
www.AdvansIT.com

Inquiries:
Phone: +1.508.624.9900
Fax: +1.508.624.9905

Copyright © 2015, Advans. All rights reserved.
This document may not be reproduced or transmitted in
any form or by any means, electronic or mechanical, for
any purpose without our prior written permission.