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How to easily set up a Cloud Connect

*A fast, easy and flexible way for service
providers to spin-up private connectivity
to the public cloud*

Introduction

How do you ensure your connectivity supports a powerful experience of the public cloud instead of being a bottleneck? Public cloud usage has been embraced by enterprises of all sizes. However, with increased cloud adoption, connectivity between the cloud and private IT environments has become a major concern for IT-departments. Cloud connectivity too often is complex, expensive and has a negative impact on performance, undercutting strategic goals organizations may have when adopting the cloud.

Unreliable cloud connectivity results in a poor user experience. In the worst case, it may cause disruption of mission critical services. MSP's, CSP's and ISP's can play an important role in helping businesses to implement public cloud the right way, including the right connectivity.

Service providers should be able to offer their customers an experience of cloud connectivity that rivals that of a cloud itself. It needs to be secure, private, easy to use and flexible. There is, in other words, an opportunity for service providers to add extra value to their services by offering end-to-end cloud connectivity. With an end-to-end Cloud Connect, customers will be able to benefit from the reliability, security and flexibility they have come to expect from cloud services.

In this whitepaper we will discuss why private end-to-end cloud connectivity is superior to other types of cloud connectivity. We will also elaborate on what it takes to set up end-to-end cloud connectivity to one of the three major public cloud providers: AWS, Microsoft Azure and Google Cloud. With an easy to implement solution, the world of cloud is at your customers' feet, without any delay.

The road to the public cloud	3
The need for flexibility and ease of use	3
The need for end-to-end connectivity	4
The elephant in the room: costs	4
Improving the cost/benefit ration of cloud connectivity	4
How it works	5
Ordering a connection in 5 easy steps	5
Port and redundancy options	5
DCspine layer 2 Cloud Connect Service	6
Setting up a Cloud Connect to major public cloud providers	7
Microsoft Azure	7
AWS	7
Google Cloud Platform	7
Choose for an easy to use, reliable Cloud Connect	8

The road to the public cloud

Public cloud connectivity often relies on public internet connections. This is understandable, as internet connections are readily available, flexible and affordable. But as more and more applications, services and data are delivered from the public cloud, relying on internet connections increasingly becomes a risk. There are no service level or performance guarantees and security is limited. Latencies and packet loss can be high and unpredictable and mitigating these drawbacks is time consuming and costly.

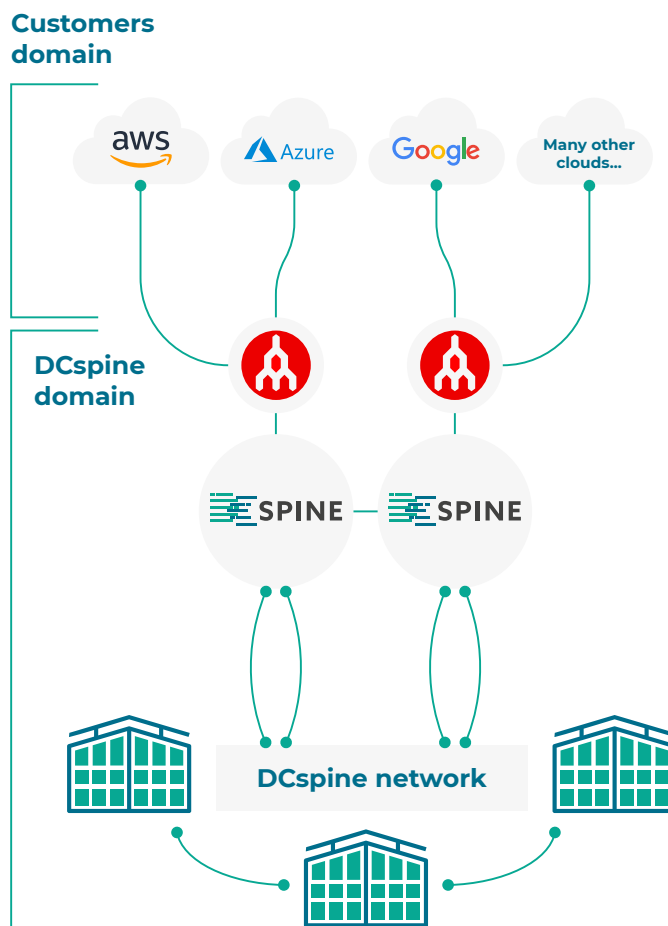
Not surprisingly, given the limits of internet connectivity, there is a rapidly increasing demand for private network connectivity to the major public cloud providers. These types of networks are able to offer reliable, fast and secure cloud connectivity with support for redundancy and the control users need.

The need for flexibility and ease of use

There is an important 'but' however. Private connectivity to the public cloud may be superior in quality compared to the internet, but it often is inflexible, has long lead times to deliver and bandwidths are often fixed. These characteristics are the opposite of what users of cloud services expect.

What is needed is a flexible end-to-end Cloud Connect solution that mirrors the characteristics of cloud services. These types of connections have flexible bandwidths, short contract terms and are very easy to set up, for example through self-service portals and API's.

The figure on the right side of this page presents an overview of DCSpine's Cloud Connect. This architecture offers the optimal balance between flexibility, reliability and ease of use. In this particular case, we use Megaport as our uplink to Azure, AWS, Google Cloud and many other clouds.



The need for end-to-end connectivity

You might have noticed we prefer to speak about (and deliver) an end-to-end Cloud Connect. This means connectivity is delivered from the cloud provider all the way to your customer's location(s). The customer is connected to a private network which is separated from the public internet. In this way they can use dedicated bandwidths to use (public) cloud services. This network is connected to one of, in DCspine's case, over 70 data centers in the Netherlands and Belgium where we have a point-of-presence. From there, we ensure a stable, high speed private connection with a public cloud provider of your customer's choice, including Microsoft Azure, Amazon Web Services (AWS), Microsoft Office 365, Google Cloud Platform and many other local and global cloud providers. In this way, service providers are able to offer the stable private connectivity their customers need, without the hassle of having to configure complex connectivity.

The elephant in the room: costs

Costs often are the elephant in the room when it comes to cloud connectivity. They are a key driver for decision makers but there often are hidden costs, or it's not clear what the cost structure is. We believe in transparency and therefore have chosen to briefly discuss this topic.

Internet connectivity usually is the primary way to connect to the cloud for organizations that start using cloud services. Changing to private connectivity therefore creates additional costs.

These additional costs are directly related to better service and performance guarantees. However, anyone with experience with IT budgets knows it can be an uphill battle to convince end users the cost/benefit ratio of private connectivity is better compared to regular internet connectivity. Therefore, it is necessary to place costs into perspective.

One thing we can say for sure is that the decision to use public cloud for sensitive data and compute will result in additional network requirements. The internet is not sufficient for key locations in the network where the public cloud meets on-premise equipment and private data storage. This is why a Cloud Connect often is necessary.

Going to the public cloud and using it at scale is a strategic choice for organizations. It brings many advantages, such as flexibility, scalability, availability on any location and faster go to market of new services. It will lead to different choices in deployment of applications and design of the organization. As a result costs are very hard to evaluate one-on-one compared to the old situation. Several costs will decline and others will increase.

Improving the cost/benefit ration of cloud connectivity

A private Cloud Connect will cause extra costs, but the good news is that this Cloud Connect is just a relative small part of the total costs of adoption of the cloud. Still, the question remains, how can costs be reduced? In designing our Cloud Connect product costs have been an important consideration. In fact, we have treated costs as an variable that can make cloud adoption easier:

- We believe in flexible contracts. A daily contract term minimizes the contract risk and a lock in for a longer term
- Our product is extremely scalable. Anyone can start with low bandwidths with relative low costs and has the option to scale when success is realized
- The cost itself. Creating scale by delivering to a multitude of customers on an efficient, automated network enables us to realize cost benefits

Even though costs remain an important factor (as they should to any business), an end-to-end Cloud Connect will actually vastly improve the cost/benefit ratio of cloud connectivity. Organizations are better able to benefit from cloud services with less accompanying (security) risks than with any other form of connectivity at just a modest increase in costs.



How it works

As we noted in the introduction, customers need a Cloud Connect that is easy to use. We also believe that ease of implementation and ease of management is important to service providers, which is why we provide you with this brief how-to. In addition, ordering and initializing a Cloud Connect needs to be as easy as it can get. Our platform has been optimized for speedy delivery. On our platform, when ordering a Cloud Connect, one of the only things you will have to do yourself apart from ordering the Cloud Connect at your public cloud provider is BGP-configuration.

Ordering a connection in 5 easy steps

Before ordering a Cloud Connect a correct service key needs to be created by your cloud provider. After you have received this key you can easily set up your Cloud Connect. On our platform, only 5 steps suffice to set up a Cloud Connect.

5 easy steps to your Cloud Connect

Name Your Connection

A free label text field allowing you to assign an easily identifiable name for this connection

Select Bandwidth

The speed in megabit or gigabit for this connection

Choose redundancy

Select if you want your Cloud Connect to be delivered on one or two different switches (this can also be two different locations)

Select DCspine Ports

Choose your ports at any of the 70+ DCspine locations

Provide service key

Provide your cloud provider service key to DCspine to set up the connection with your cloud environment*

**Some public clouds also require layer 3 information.*

Port and redundancy options

We offer two options to connect:

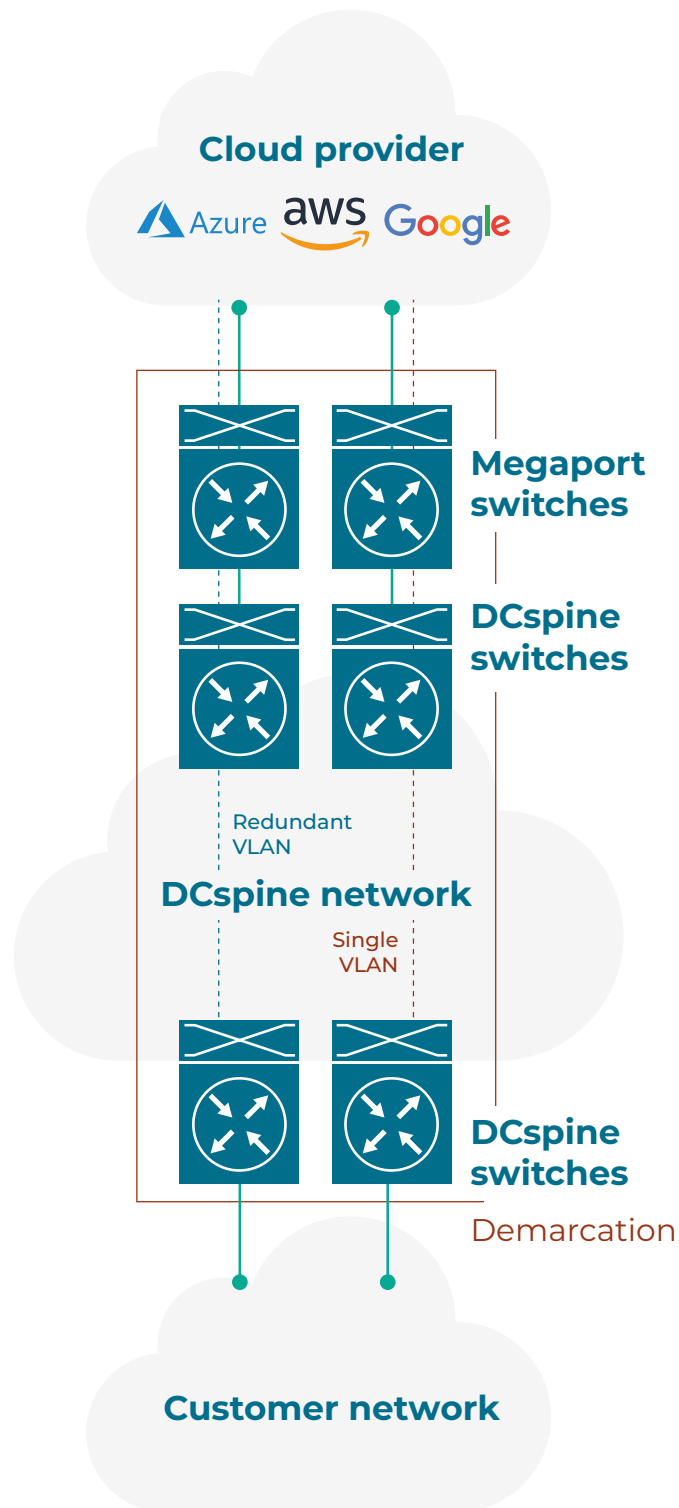
- On an Access Mode Port: the port usage will be limited to this dedicated cloud VLAN(s)
- On a Trunk Mode Port: the port can also be used for other circuits apart from the cloud VLAN(s)

It is important to think about this before configuring the port. Also note that the choice made will not impact performance of the Cloud Connect in any way. The cloud VLAN(s) consist of a transparent tunnel to the cloud.

Another choice that has to be made is whether the Cloud Connect is delivered in a redundant way. There are two options: single point-to-point or full redundant (in one or two different datacenters). By default, the DCspine fiber optic infrastructure is fully redundant. The redundant option will provide redundancy in equipment and two different VLANS from your location up to the public cloud provider.

DCspine layer 2

Cloud Connect Service



Setting up a **Cloud Connect** to major **public cloud providers**

No public cloud provider is the same, and this is also true for the way they offer their Cloud Connects. However, it's quite similar to set up. Keep in mind that specialized connectivity providers have the knowledge and skill to configure and manage Cloud Connects quickly and securely. We will very briefly discuss how organizations can connect to Azure, AWS and Google Cloud.

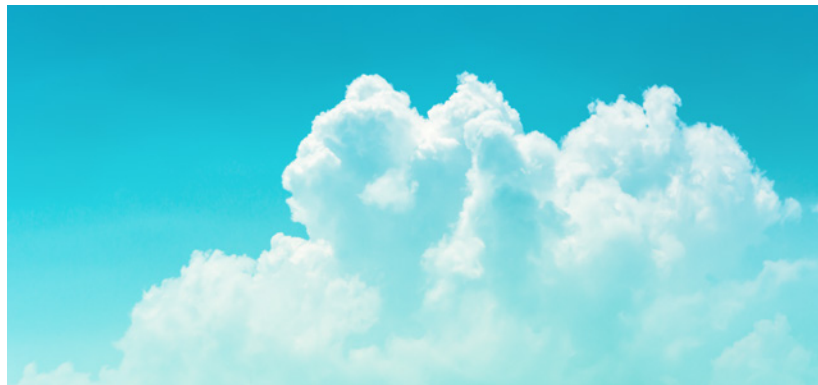
Microsoft Azure

Microsoft Azure has its own connectivity service, which is called ExpressRoute, to connect to cloud connects. To use it, an ExpressRoute plan has to be selected and deployed in Azure. Once this is done an ExpressRoute service key is provided which then needs to be shared with DCspine, so a Cloud Connect can be set up as described in the previous chapter. The customer that will eventually use Azure will have to take care of an account and the required licenses.

AWS

AWS has a similar service as ExpressRoute: AWS Direct Connect. It allows users to establish dedicated network connections from own locations to AWS cloud.

One of the features of Direct Connect is that it uses industry standard 802.1q VLANs, making it easier to establish dedicated end-to-end connections. Also, the connections can be partitioned into multiple virtual interfaces. This offers important benefits if customers use AWS for both private and public cloud services, separating network resources and data. AWS Direct Connect requires some of the layer 3 configuration in the Cloud Connect process, but made it very easy to set up.



Google Cloud Platform

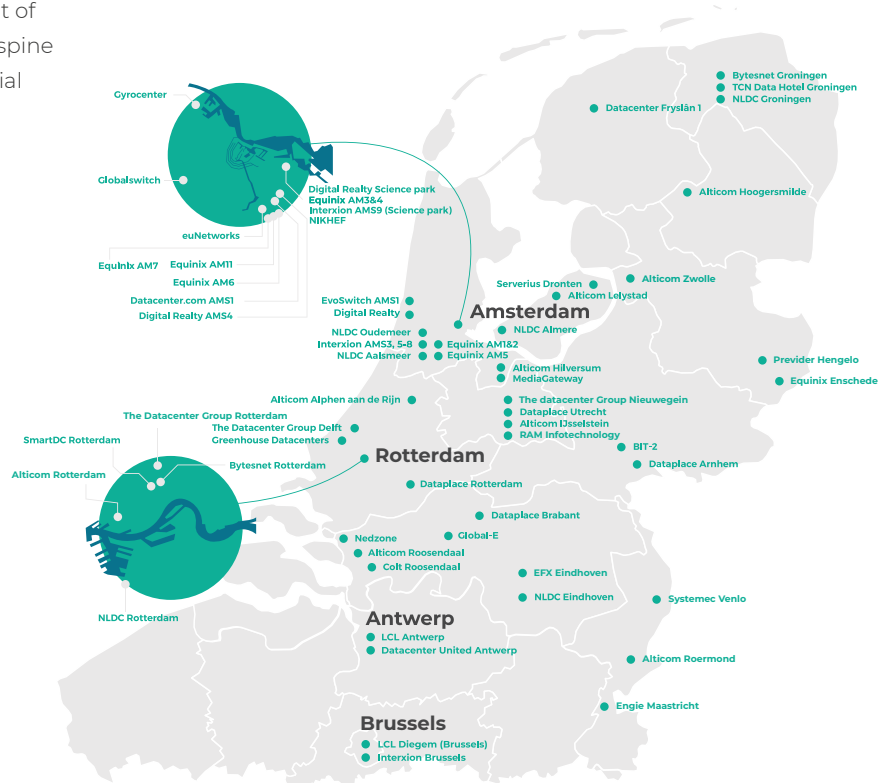
Finally, Google's Cloud Platform uses a private interconnection service that is similar to both Azure's and AWS, even though it uses different networking standardization protocols. Google Cloud's Partner Interconnect is also used for private connects between remote networks and, in this case, Virtual Private Cloud deployments. The Partner Interconnect extends an on-premises network to Google's network through a highly available, low latency connection.

Google has named the service key we mentioned in the previous chapter 'How it works' the 'Pairing key'. Google Cloud is more similar to the way Azure works because it only requires a key to set up a VLAN.

Choose for an **easy to use,** **reliable** Cloud Connect

Whichever public or private cloud customers want to use: DCspine is able to provide the private connectivity needed to ensure a seamless cloud experience. What's more, we are able to do it on the best terms possible, offering unparalleled ease of use and reliability. Our self-service portal allows for the 'convenience of an app store': connections are easy and quick to set up, bandwidths can be easily adjusted at will and you are not bound by long contract terms.

We have the knowledge to service your customers without them ever noticing it and take end-to-end responsibility for the Cloud Connects we deliver. We also offer service providers the flexibility and ease of use that we believe should be the new normal in the age of cloud computing. All you need is a point of presence in one of the data centers where DCspine has a foot print, which is almost any commercial data center in the Netherlands.



Want to know more about our Cloud Connect solutions or what other use cases can be serviced by DCspine?

Get in touch and email us at info@dcspine.nl, give us a call at +31 (0) 888 110 150 or visit our website dcspine.nl for more information.