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# Cloud Connect
## Service Guide

SERVICE GUIDE

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# Hybrid approach brings new challenges

High-bandwidth connectivity between the data centre and the public cloud is a prerequisite for modern businesses with hybrid IT solutions.

Today, more and more businesses are combining multiple cloud services with more traditional hosted and on-premise infrastructure. This hybrid approach brings new challenges of integrating those services together to allow for seamless operation. Connectivity over the public internet is one option, but that brings inherent problems of reliability and lack of end-to-end responsibility.

For your business to operate securely and efficiently you need dedicated connectivity into the cloud using a fast, reliable, and flexible networking solution that connects directly into your data centre racks. Pulsant's Cloud Connect service is just such a solution.

Pulsant Cloud Connect is a Megaport connected service. It provides you with cloud connectivity via our reliable, highly-available network infrastructure and Megaport's Network-as-a-Service (NaaS).

Cloud Connect can be used by customers who have colocated infrastructure in Pulsant's data centres (Colo Connect), as well as those customers who have a fully managed service from Pulsant.

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# Customer Scenarios

### Increasing reliance on hybrid and multi-cloud computing

In the modern world, organisations are increasingly looking to consume IT services from whichever source provides them with their required outcome at the best price. As a result, hybrid blends of in-house, hosted and cloud-based services are commonplace.

This hybrid approach, however, has knock-on effects on the complexity of the networking solution that supports it. No longer can businesses rely solely on a simple on-premise network with a basic internet connection; instead they need a secure, flexible and reliable network solution that connects multiple sites and multiple cloud providers seamlessly.

When evaluating connectivity options for hybrid cloud solutions, one of the biggest things to consider is the ability to control and optimise the connectivity for the workloads in use: to be able to scale the connectivity up for periods of intense activity and scale back again to business-as-usual levels, and to be able to deploy additional private connectivity to other enabled locations without the slow deployment of Multiprotocol Label Switching (MPLS) services.

Many traditional approaches to connectivity can seriously limit multi-cloud strategies. For example, if a direct connection to a specific cloud provider is chosen, it may be difficult—or at the very least, costly—to expand out and connect to additional services from other vendors with the same quality of connection. Moreover, managing the routing

necessary to move traffic between providers is a highly complex and time-consuming discipline.

Pulsant's Cloud Connect service fills this need. With your racks housed in our data centres, Cloud Connect will connect them directly into multiple diverse cloud services, as well as link between multiple data centres and your own premises if required. This provides a simplified, yet flexible, and all-encompassing approach to networking to meet your business needs.

### Bandwidth demands constantly increase

Data volume only ever increases. You need a networking solution that will flexibly scale to meet future as well as current needs. You may not need that capacity now, but you know you will in six months or a year, and you want its availability to be guaranteed when you do need it.

Equally, while you do not want to pay for capacity you are not using today, you also do not want to be hit with a sudden CapEx cost for new routers or new cabling to support increasing needs in the future.

Cloud Connect is designed with flexibility and growth built in, so that as your needs grow, so will your allocated bandwidth, removing the need to pay for costly new infrastructure. Billing is based on allocated bandwidth, so you pay only for what you use, when you use it.

**No longer can businesses rely solely on a simple on-premise network with a basic internet connection; instead they need a secure, flexible and reliable network solution that connects multiple sites and multiple cloud providers seamlessly.**

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### Flexible commercial terms for bursting bandwidth

For 11 months of the year your network bandwidth requirements are modest and predictable. But for that one month of the year when you launch a new product or marketing campaign, you know your requirement will balloon. You need a network that will stretch to accommodate increased traffic for the duration, without charging you for the privilege during the periods you don't need it.

Again, Cloud Connect's built-in flexibility works in your favour. When you need the capacity, it will be there for you, and when you no longer need it, the higher bandwidth (and its associated costs) can be dialled back down.

This is also a major benefit in cloud migration projects, where a wide pipe between the data centre and your cloud platform is essential for the duration of the project to allow you to move your virtual machines and data to the cloud quickly and efficiently. Then, once you are in the cloud you can return your bandwidth to a much smaller operational capacity, ensuring you get what you need at the greatest cost efficiency.

Cloud Connect's flexible commercial terms mean that you only pay for the increased bandwidth when you need to use it, without being tied into a long-term contract for fixed bandwidth you will not be using for the majority of the year.

### Network deployment is time consuming

Provisioning a network connection is more complex than simply plugging in a cable. You need an experienced network engineer to configure the networking individually on each connected device. In a large and complex network, this can be costly and time consuming, and can lead to long delays in network deployment.

With Cloud Connect, we automate the deployment through the use of software-defined Network-as-a-Service (NaaS) technology, which allows rapid provisioning of the network to any number of connected devices, freeing up valuable IT staff to concentrate on core business projects.

**Cloud Connect's flexible commercial terms mean that you only pay for the increased bandwidth when you need to use it, without being tied into a long-term contract for fixed bandwidth you will not be using for the majority of the year.**

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# Key Features of Cloud Connect

### Fully managed network fabric

Cloud Connect is part of Pulsant's all-encapsulating suite of network services designed to provide businesses with a single infrastructure supplier to manage their growing network estate.

We are able to create secure network environments for customers across our services and data centres and extend those networks into customer environments on premise or into third-party cloud providers.

As a single supplier, we become a single point of responsibility for supporting your business's ever-growing network needs.

Our core network spans all of our data centres and allows us to connect your infrastructure directly to the Megaport points of presence we house within our own data centres. This provides a flexible, reliable, cloud-agnostic service that will seamlessly connect you and your users to your systems and data no matter where they are located.

**You can transfer larger quantities of data to and from the cloud at a vastly lower unit cost than if connecting by traditional means.**

### Agile, automated deployment

The service is designed to simplify and automate customer on-boarding, resulting in minimal lead times for getting your racks and solutions connected into the cloud.

Cloud Connect uses software-defined Network-as-a-Service (NaaS) to automate the deployment of new connections between the data centre and the cloud. What this means for you is vastly shorter provisioning times compared with traditional network deployments.

### High performance connectivity

From your racks in our data centres you can connect directly to Azure and AWS cloud services, giving you high-bandwidth, high availability, on-demand connectivity between your data centre-based services and the public cloud provider at a low cost.

By connecting directly to the cloud from our data centres, you avoid the many connections, exchanges, and third-party controlled networks that the internet entails. This reduces the latency between your environment and the cloud, giving you the best possible performance and reliability. Because Cloud Connect is much simpler and bypasses costly global transit providers, you can transfer larger quantities of data to and from the cloud at a vastly lower unit cost than if connecting by traditional (internet) means.

### Global inter-data centre connectivity

Megaport is a global network supplier with points of presence in data centres across 20 countries. Virtual cross-connects can be created between your racks in our data centres and racks in any data centre hosting a Megaport point of presence, facilitating the creation of global-scale geo-diverse solutions.

### Reliability

In hybrid environments, or where you are reliant on public cloud for mission-critical services, reliable connectivity to the cloud is vital. When traditional connectivity via the internet fails, there can be a chain of organisations that need to co-ordinate to provide a fix. This lack of ownership and responsibility can raise serious concerns for businesses dependant on that connectivity.

Connecting to the cloud via Pulsant's Cloud Connect gives you the peace of mind that a single supplier is responsible for your connectivity. This allows for faster diagnosis of issues and responsiveness as we have a deep understanding of your solution and your requirements.

Cloud Connect is highly available by design, with multiple diverse routes into and between our data centres to provide resilience in the case of component failures and ensure that we can offer the highest availability SLAs for your connectivity.

### Security

Cloud Connect provides a private connection directly into the cloud, bypassing the internet, offering the increased security and data assurance that is vital to your business.

By managing the connectivity across hybrid solutions connecting elements of public cloud, private cloud, and colocation, Cloud Connect allows sensitive data to be safely and securely moved in and out of the cloud, and between different cloud providers, with a consistent level of security and assurance.

**Cloud Connect gives you a network bandwidth that is predictable but also totally flexible when you need to step outside your predicted bandwidth needs.**

### Flexible bandwidth

Cloud Connect gives you a network bandwidth that is predictable but also totally flexible when you need to step outside your predicted bandwidth needs.

Whether your bandwidth flexes constantly over time, or whether you need to burst your bandwidth temporarily to accomplish a specific data-intensive task, Cloud Connect accommodates your needs, increasing and decreasing your allocated bandwidth instantly and automatically.

### Pulsant Colo Connect

Pulsant Colo Connect offers flexible, right-sized connectivity into the Azure and AWS public clouds for your colocated racks, with dedicated fibre interconnects from your racks to the Megaport point of presence hosted within our data centre. Colo Connect is ideally suited to customers planning a migration from the data centre to the cloud, as well as for hybrid solutions that need fast and reliable connection to the cloud.

Colo Connect provides cloud-connected racks with:

• High bandwidth, on-demand connectivity between your colocated infrastructure and the public cloud provider or other Megaport-enabled location, at low cost

• Flexible bandwidth, with the ability to consume up to your contracted maximum rate without a change in what you are charged

• The ability to increase bandwidth for the duration of a specific need and then return to normal operating bandwidth without undue cost or risk

• Predictable bandwidth with low latency for critical business applications and disaster recovery

• Highly-available, private connection to the public cloud, bypassing the internet and therefore increasing security. Diverse redundant connections are available if required

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### Unmanaged connectivity to Megaport supported clouds

Pulsant's Cloud Connect service provides fully-managed connectivity to Azure and AWS.

For customers who wish to connect to alternative Megaport supported clouds, we can offer an unmanaged connectivity service. In this case, Pulsant will deploy, configure, and manage the virtual cross connect between the Cloud Connect point of presence and either a cloud on-ramp or a Megaport point of presence, but will not deploy or manage any cloud on-ramp connectivity.

### Multi-cloud connectivity

A common strategy for modern businesses is a multi-cloud approach, which takes cloud services from multiple cloud providers and blends them to create the ideal suite of capabilities. In this environment, the ability to connect to multiple cloud providers and exchange data between them is essential.

**For customers who wish to connect to alternative Megaport supported clouds, we can offer an unmanaged connectivity service.**

Our Cloud Connect service provides this ability through the use of virtual cloud routers, which enable the cloud connectivity to remain fully in the cloud and provide the flexibility and responsiveness that a multi-cloud environment requires, as well as managing the complex routing necessary to move traffic between providers.

Virtual cloud router is an option that can be added to the Cloud Connect service should your environment require it.

### Monitoring and support

Pulsant monitor the availability of our Cloud Connect service and will respond to alerts in order to diagnose and resolve any service-affecting issues.

For our Colo Connect service, Pulsant monitors and supports the availability of the virtual cross connect link but not the customer's connectivity to any cloud services or other Megaport-enabled location.

### Customer responsibilities

Where our service is dependent on your involvement, the extent of that involvement is listed below.

• You are responsible for any necessary configuration of customer devices to consume the service, except where the devices are explicitly within the scope of a Pulsant managed service

• For Colo Connect, it is your responsibility to manage the availability of rack-mounted equipment that connects to the service, for example by providing paired high-availability switches

### Service Dependencies and/or Related Services

Our services are designed to be both flexible and modular in order to promote tailored solutions which directly meet customer requirements.

Some of our services may be related or even dependent on one another to achieve your desired outcomes.

We will work with you to consider the bigger picture and look at all scenarios that will impact on your specific service.

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# What's included in the service?

This description defines what is included as part of our Cloud Connect and Colo Connect services.



## Cloud Connect

Pulsant will:

- Provide a private logical layer 3 connection to a public cloud platform or between customer infrastructure in any Megaport enabled location

- Configure the connectivity to the customer's physical or virtual infrastructure in a Pulsant data centre in order to provide the contracted bandwidth

- Configure a virtual cross connect between the Cloud Connect point of presence and either a cloud on-ramp or a Megaport point of presence

- Deploy and configure a virtual cloud router, if selected as a service option

- Configure, monitor, and manage the customer's Azure ExpressRoute and/or AWS Direct Connect services if required

- Monitor the availability of the connection and resolve any connectivity issues where the fault lies within Pulsant managed infrastructure

## Cloud Connect

Pulsant will not:

- **Configure customer equipment to consume the service provided (available as an additional chargeable service)**

## Colo Connect

Pulsant will:

- Install cross-connect cabling between the customer's rack and the Cloud Connect point of presence in the data centre, as an additional chargeable service

- Deploy and configure a virtual cross connect between the Cloud Connect point of presence and either a cloud on-ramp or a Megaport point of presence

- Deploy and configure a virtual cloud router, if multi-cloud connectivity is selected as a service option

- Monitor the availability of the virtual cross connect between the Cloud Connect point of presence and either a cloud onramp or a Megaport point of presence

- On request, and where available, provide double tagging for Azure ExpressRoute connectivity as an additional chargeable service

## Unmanaged Cloud Connect

Pulsant will:

- Install cross-connect cabling between the customer's infrastructure and the Cloud Connect point of presence in the data centre, as an additional chargeable service

- Configure the connectivity between the customer's infrastructure and the Cloud Connect point of presence in order to provide the contracted bandwidth

- Deploy and configure a virtual cross connect between the Cloud Connect point of presence and either a cloud on-ramp or a Megaport point of presence

- Deploy and configure a virtual cloud router, if multi-cloud connectivity is selected as a service option

- Monitor the availability of the virtual cross connect between the Cloud Connect point of presence and either a cloud onramp or a Megaport point of presence

## Colo Connect

Pulsant will not:

- Configure customer equipment to consume the service provided or provide any management of the customer's network switch (available as an additional chargeable service)

- Monitor the availability or performance of any network connection that the customer is running over the Colo Connect link

- Configure, monitor, or manage the customer's Azure ExpressRoute and/or AWS Direct Connect services, unless within scope of a separate managed service agreement with Pulsant

## Unmanaged Cloud Connect

Pulsant will not:

- Configure, monitor, or manage any cloud on-ramp connectivity

- Configure customer equipment to consume the service provided or provide any management of the customer's network switch (available as an additional chargeable service)

- Monitor the availability or performance of any network connection that the customer is running over the Unmanaged Cloud Connect link

- Configure, monitor, or manage the customer's logical connection to the cloud service

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# Pricing structure

The following describes the items that will be seen on a quote or service order relating to this service and the structure of those items in building this service.

## Cloud Connect

A Cloud Connect solution consists of a port and a virtual cross connect with a rate limit. An optional Managed MultiCloud Router will be required for multi-cloud connectivity.

The specific service lines are:

### Ports

- **Cloud Connect - Single 1G Port** (Monthly Commit Single 1G Port, monthly commit)

- **Cloud Connect - Single 1G Port** (12 Monthly Commit) Single 1G Port, 12 month commit

- **Cloud Connect - Single 1G Port** (36 Monthly Commit) Single 1G Port, 36 month commit the service provided (available as an additional chargeable service)

### Virtual Cross Connects

- **Cloud Connect - Managed Virtual Cross Connect**
  Requires a Virtual Cross Connect Rate Limit. Please indicate A and B locations in the quote

- **Cloud Connect - Managed Enterprise Cloud Virtual Cross Connect**
  Requires a Virtual Cross Connect Rate Limit. Please indicate A and B locations in the quote. This is for Enterprise Cloud as one endpoint only

### Virtual Cross Connect Rate Limits

- **Cloud Connect - Virtual Cross Connect Rate Limit, Mbps (Intra Zone)**
  Requires a Virtual Cross Connect that it sets the rate limit for. Please indicate A and B locations in the quote. This applies to Virtual Cross Connects between different Metro locations within the same zone area

- **Cloud Connect - Virtual Cross Connect Rate Limit, Mbps (Inter Zone)**
  Requires a Virtual Cross Connect that it sets the rate limit for. Please indicate A and B locations in the quote. This applies to Virtual Cross Connects between different Metro locations or different zone areas

- **Cloud Connect - Virtual Cross Connect Rate Limit, Mbps (Metro <= 1 Gbps)**
  Requires a Virtual Cross Connect that it sets the rate limit for. Please indicate A and B locations in the quote. This applies to Virtual Cross Connects within a Metro area such as London

- **Cloud Connect - Virtual Cross Connect Rate Limit, Mbps (Metro > 1 Gbps)**
  Requires a Virtual Cross Connect that it sets the rate limit for. Please indicate A and B locations in the quote. This applies to Virtual Cross Connects within a Metro area such as London

### Options

**Cloud Connect - Managed MultiCloud Router**
Please specify connections required and Megaport hosting location

### Example

The customer commits to a 12-month service term for a single 1 Gbps port with a rate limit of 100 Mbps connecting into a location in a different Metro zone.

The quote would include the following service lines:

- **Cloud Connect - Single 1G Port**
  (12 Monthly Commit)

- **Cloud Connect - Managed Enterprise Cloud Virtual Cross Connect**

- **100 Mbps - Cloud Connect - Virtual Cross Connect Rate Limit, Mbps (Inter Zone)**

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# Datasheets

## Service Data

| Measure | Description | Value |
|---|---|---|
| Technology | The underlying technology on which the service is based | Megaport |
| Introduction Date | Date of first availability of the service | 2020 |
| AUP | Any Acceptable Use Policies that apply | Standard Pulsant Terms & Conditions |

## Technical Data

| Measure | Description | Value |
|---|---|---|
| Port Speed | The speed of ports available for reaching the service | 1Gbps (10Gbps ports can be made available and should be discussed with Pulsant if required) |
| Public Cloud Connectivity | The types of public cloud connection protocol supported by the service | Azure ExpressRoute AWS Direct Connect |

## SLA Data - Service

| Measure | Description | Value |
|---|---|---|
| Service Hours | The hours during which the service and SLA is provided | 24/7/365 |
| Availability: Managed Cloud Connect | The percentage of the service hours during which service availability is guaranteed, not including scheduled maintenance | Standard solution: 99.995% Fully resilient solution: 100% |
| Availability: Colo Connect | The percentage of the service hours during which service availability is guaranteed, not including scheduled maintenance | Single link: 99.995% Dual resilient links: 100% |

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# Service responsibility matrix

| Task | Customer | Pulsant |
|------|----------|---------|
| **Cloud Connect** (Managed Connectivity to Azure & AWS or a Megaport point of presence) | | |
| Provide a private logical layer 3 connection to a public cloud platform or between customer infrastructure in any Megaport enabled location | | • |
| Configure the connectivity to the customer's physical or virtual infrastructure in a Pulsant data centre in order to provide the contracted bandwidth | | • |
| Configure a virtual cross connect between the Cloud Connect point of presence and either a cloud on-ramp or a Megaport point of presence | | • |
| Deploy and configure a virtual cloud router, if selected as a service option | | • |
| Configure, monitor, and manage the customer's Azure ExpressRoute and/or AWS Direct Connect services if required | | • |
| Monitor the availability of the connection and resolve any connectivity issues where the fault lies within Pulsant managed infrastructure | | • |
| Configure customer equipment to consume the service provided | • | |
| **Colo Connect** (Unmanaged Connectivity to Racks) | | |
| Install cross-connect cabling between the customer's rack and the Cloud Connect point of presence in the data centre, as an additional chargeable service | | • |
| Deploy and configure a virtual cross connect between the Cloud Connect point of presence and either a cloud on-ramp or a Megaport point of presence | | • |
| Deploy and configure a virtual cloud router, if multi-cloud connectivity is selected as a service option | | • |
| Monitor the availability of the virtual cross connect between the Cloud Connect point of presence and either a cloud on-ramp or a Megaport point of presence | | • |
| On request, and where available, provide double tagging for Azure ExpressRoute connectivity as an additional chargeable service | | • |

| Task | Customer | Pulsant |
|------|:--------:|:-------:|
| Configure, monitor, and manage any cloud on-ramp connectivity (such as Azure ExpressRoute or AWS Direct Connect services) | • | |
| Configure customer equipment to consume the service provided | • | |
| Management of the customer's network switch | • | |
| Monitor the availability or performance of any network connection that the customer is running over the Colo Connect link | • | |
| Configure, monitor, or manage the customer's logical connection to the cloud service | • | |

**Unmanaged Cloud Connect (Unmanaged Connectivity to Megaport Supported Clouds)**

| Task | Customer | Pulsant |
|------|:--------:|:-------:|
| Install cross-connect cabling between the customer's rack and the Cloud Connect point of presence in the data centre, as an additional chargeable service | | • |
| Configure the connectivity between the rack and the Cloud Connect point of presence in order to provide the contracted bandwidth | | • |
| Deploy and configure a virtual cross connect between the Cloud Connect point of presence and either a cloud on-ramp or a Megaport point of presence | | • |
| Deploy and configure a virtual cloud router, if multi-cloud connectivity is selected as a service option | | • |
| Monitor the availability of the virtual cross connect between the Cloud Connect point of presence and either a cloud on-ramp or a Megaport point of presence. | | • |
| Configure, monitor, and manage any cloud on-ramp connectivity | • | |
| Configure customer equipment to consume the service provided | • | |
| Management of the customer's network switch | • | |
| Monitor the availability or performance of any network connection that the customer is running over the Unmanaged Cloud Connect link | • | |
| Configure, monitor, or manage the customer's logical connection to the cloud service | • | |

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## SLA Data - Service

| Priority | Definition | Response time | Target update time |
|---|---|---|---|
| **P1** | • Total loss of production service; or<br>• A significant revenue, operational, or safety impact on the entire company; or<br>• Service degraded, affecting the entire company | 15 minutes | 1 hour |
| **P2** | • Partial loss of service affecting the company; or<br>• Service degraded, affecting multiple departments or a single site; or<br>• There is the potential of significant revenue, operational, or safety impact to the company if not resolved quickly | 30 minutes | 2 hours |
| **P3** | • Service degraded, affecting non-production services; or<br>• Loss of service affecting a single user | 1 hour; business hours only | 8 hours; business hours only |
| **P4** | • Degraded service affecting a single user | 2 hours; business hours only | N/A |
| **P5** | • Request for information | 4 hours; business hours only | N/A |

## Incident priority assessment

|  |  | Impact | | |
|---|---|---|---|---|
| | | **High**<br>Having financial impact and causing reputational damage | **Medium**<br>Risk of financial impact and reputational damage | **Low**<br>Minimal risk of financial or reputational damage |
| **Urgency** | **P3** | P1 | P2 | P3 |
| | **P4** | P2 | P3 | P4 |
| | **P5** | P3 | P4 | P5 |

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# Standard Availability

## UK Pulsant data centres

| Date Centre | Cloud Connect | Colo Connect |
| --- | --- | --- |
| Edinburgh Medway | 🟡 | 🟡 |
| Edinburgh Newbridge | 🟡 | 🟡 |
| Edinburgh South Gyle | 🟢 | 🟢 |
| Maidenhead | 🟡 | 🟡 |
| Milton Keynes | 🟢 | 🟢 |
| Newcastle Central | 🟡 | 🟡 |
| Newcastle East | 🟡 | 🟡 |
| Reading East 1 | 🟡 | 🟡 |
| Reading East 2 | 🟡 | 🟡 |
| Sheffield | 🟡 | 🟡 |
| South London | 🟢 | 🟢 |

| | Cloud Connect | Colo Connect |
| --- | --- | --- |
| 3rd Party Facilities | ⚫ | ⚫ |

🟢 Current availability: Megaport POP

🟡 Current availability: via data centre inter-connect

⚫ Not available

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