AWS Direct Connect

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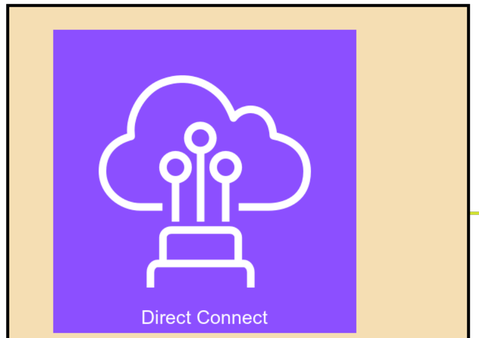


AWS Direct Connect

What is AWS Direct Connect?

1. 🏢 Dedicated physical network connection

🌐 Fully managed service

🔗 Connects your network to AWS

2. 🔌 Connects to AWS Direct Connect locations

🌍 Strategically placed worldwide

3. 🌐 Standard Ethernet fiber-optic cable

 One end to your router

 Other end to AWS Direct Connect router

4. 🔒 Private, high-bandwidth, low-latency connection

🚀 Fast and secure data transfer

5. 🚫 Bypasses the public internet

⬇️ Reduces network congestion risk

🔐 Mitigates potential security threats

6. 🔌 Virtual interfaces to AWS services

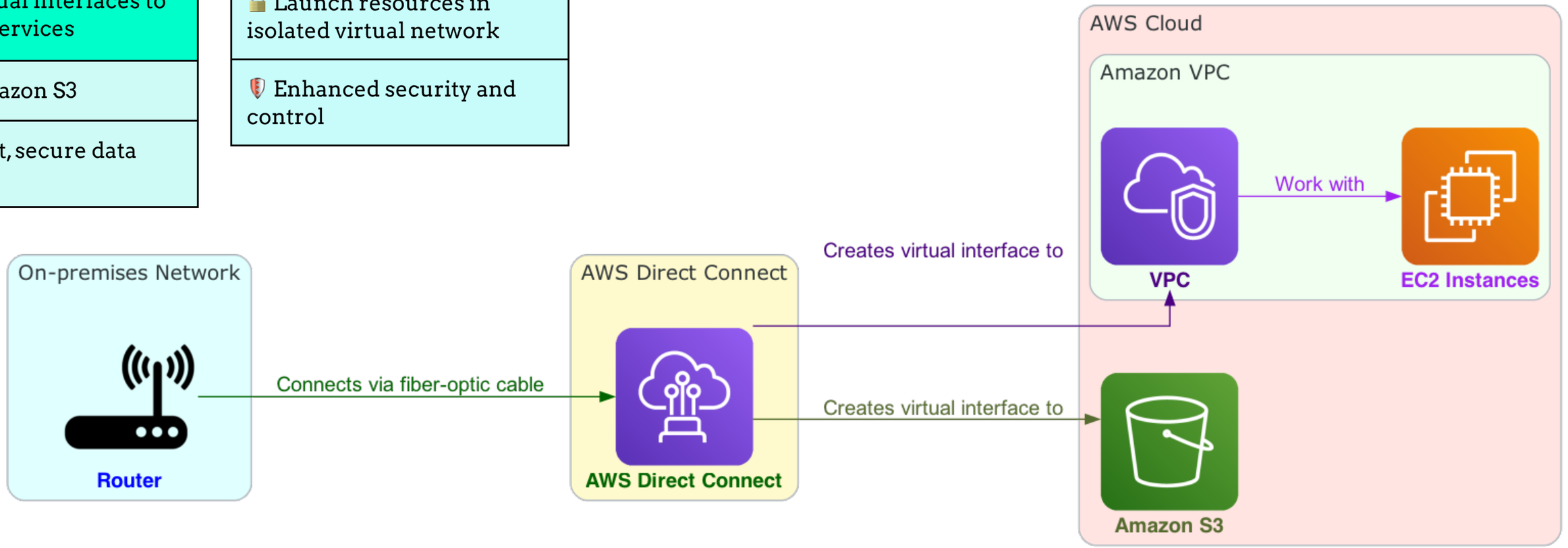
🗃️ E.g., Amazon S3

⚡ Efficient, secure data access

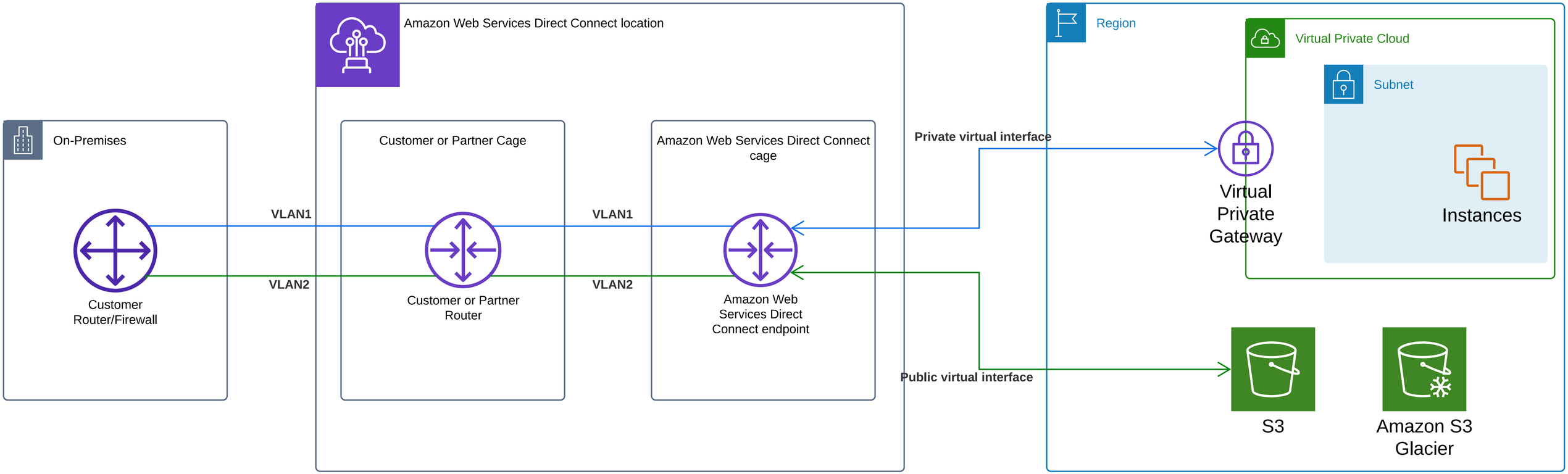
7. Access to Amazon VPC

🔒 Launch resources in isolated virtual network

🛡️ Enhanced security and control



High Level Overview



Network requirements - 1

Must meet one of the following conditions:-

1. Your network is colocated with an existing AWS Direct Connect location.
2. You are working with an AWS Direct Connect partner who is a member of the AWS Partner Network (APN).
3. You are working with an independent service provider to connect to AWS Direct Connect.

Network requirements - 2

Following conditions:-

1. Your network must use single-mode fiber with a 1000BASE-LX (1310 nm) transceiver for 1 gigabit Ethernet, a 10GBASE-LR (1310 nm) transceiver for 10 gigabit, or a 100GBASE-LR4 for 100 gigabit Ethernet.
2. Auto-negotiation for a port must be disabled for a connection with a port speed of more than 1 Gbps. However, depending on the AWS Direct Connect endpoint serving your connection, auto-negotiation might need to be enabled or disabled for 1 Gbps connections.
3. 802.1Q VLAN encapsulation must be supported across the entire connection, including intermediate devices.
4. Your device must support Border Gateway Protocol (BGP) and BGP MD5 authentication.
5. (Optional) You can configure Bidirectional Forwarding Detection (BFD) on your network. Asynchronous BFD is automatically enabled for each AWS Direct Connect virtual interface. It's automatically enabled for Direct Connect virtual interfaces, but does not take effect until you configure it on your router.

AWS Direct Connect Pricing

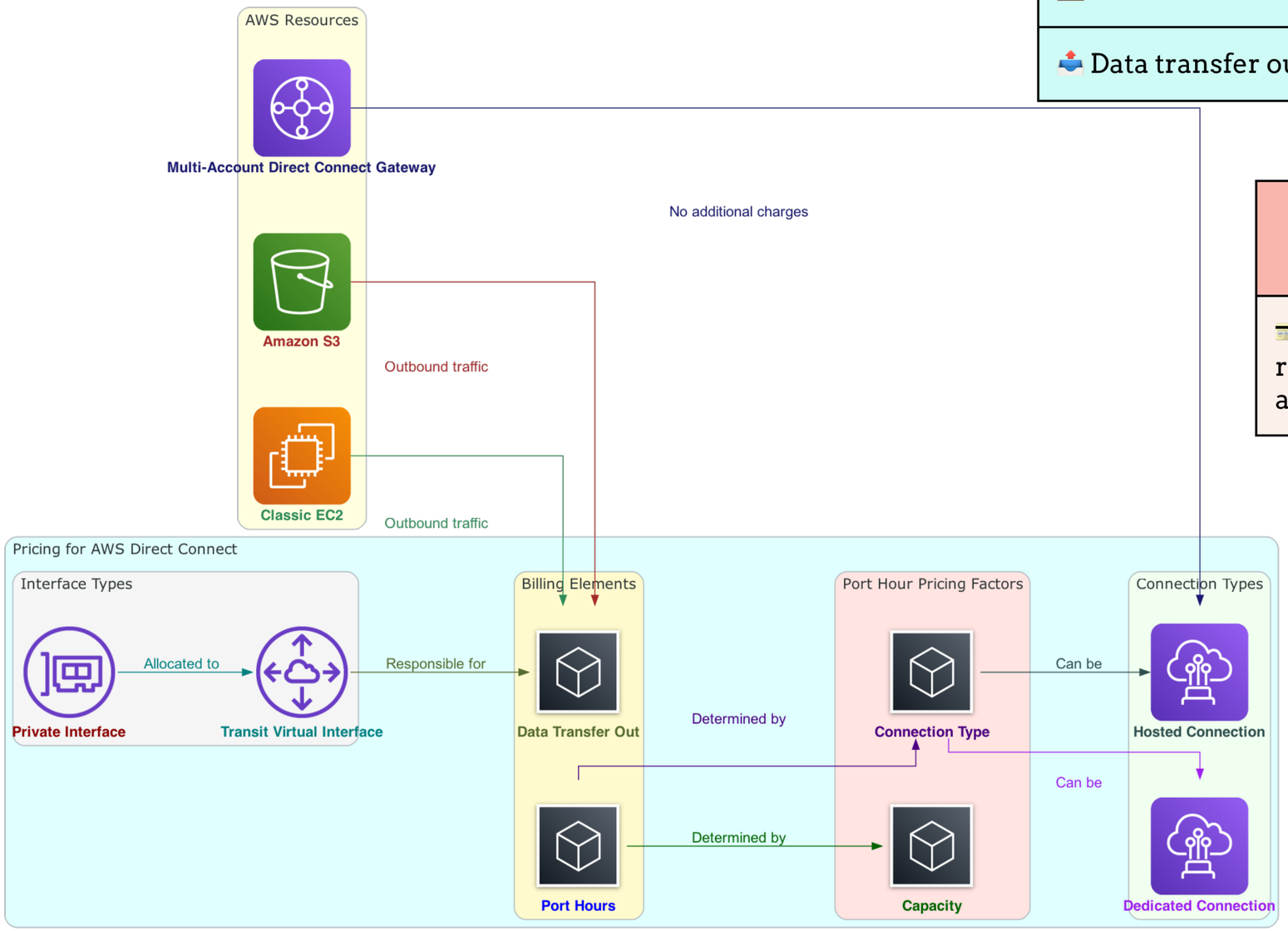
1. 💸 Two billing elements
🕰️ Port hours
📤 Data transfer out

2. 🔌 Port hour pricing	
🪣 Determined by capacity	
🔗 Depends on connection type	🔒 Dedicated connection
	🏠 Hosted connection

3. 📤 Data Transfer Out charges
💳 Allocated to responsible AWS account

4. 🌐 Multi-account Direct Connect gateway
🆓 No additional fees

5. 📼 Outbound traffic to public AWS resources
📊 Metered at Direct Connect data transfer rate
💸 Cost-effective data transfer pricing



Accessing AWS Services

1. 🌍 AWS Direct Connect locations access

🔓 Access public services in other public Regions

🚫 Excludes China (Beijing and Ningxia)

2. 🔌 AWS Direct Connect connections

⚙️ Configurable to access VPCs in other public Regions

🚫 Excludes China (Beijing and Ningxia)

3. 🏗️ Building multi-Region services

🔗 Possible with single AWS Direct Connect connection

4. 🌐 AWS global network backbone

🛣️ All networking traffic remains on backbone

💻 Regardless of accessing public services or VPCs

5. 🔑 Accessing public resources in remote Regions

 Requires setup of public virtual interface

🤝 Establishment of BGP session necessary

6. 📶 BGP session establishment

🧭 Router learns routes of other public AWS Regions

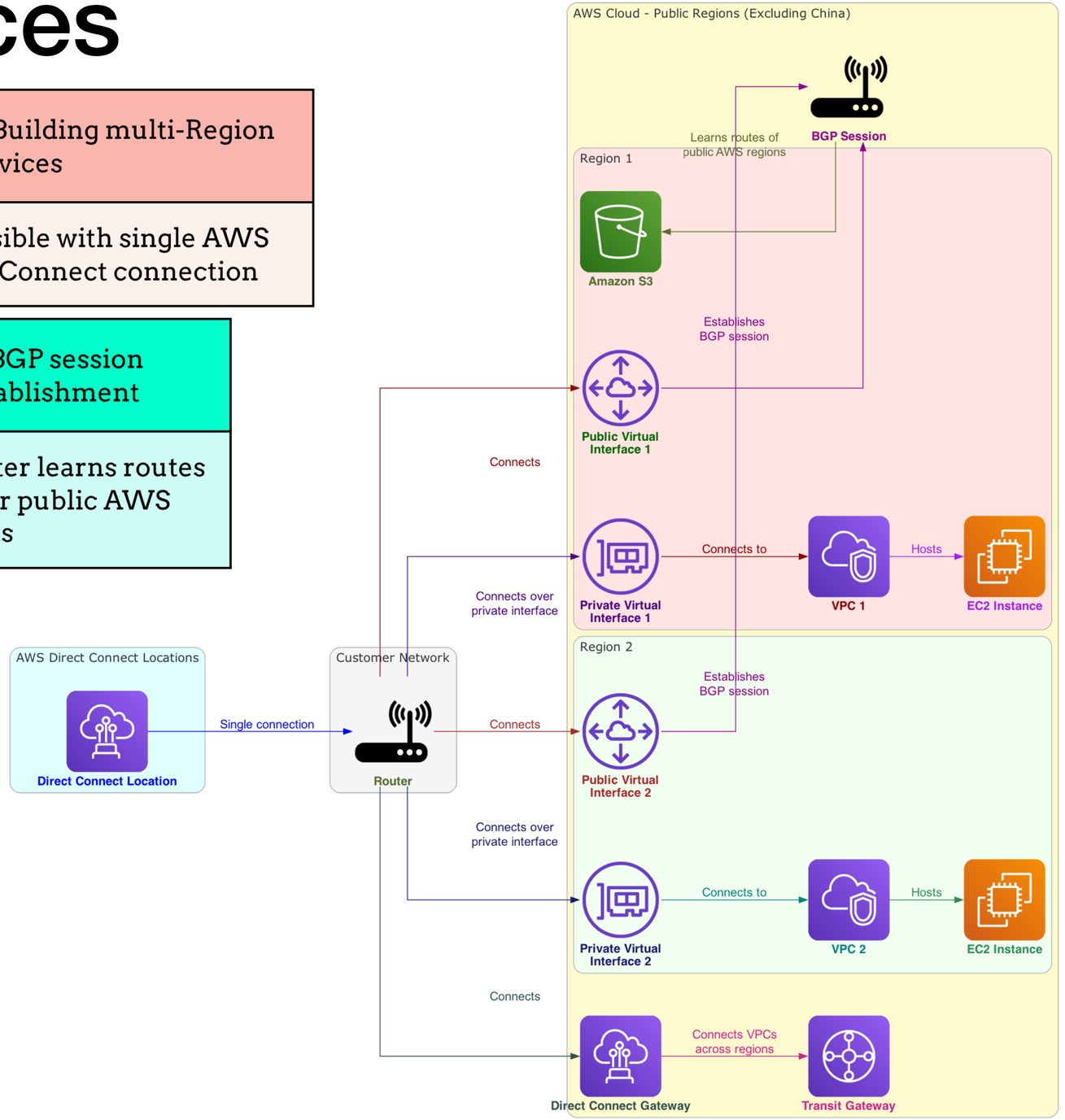
7. 🏢 Direct Connect gateway creation

🌍 Possible in any public Region

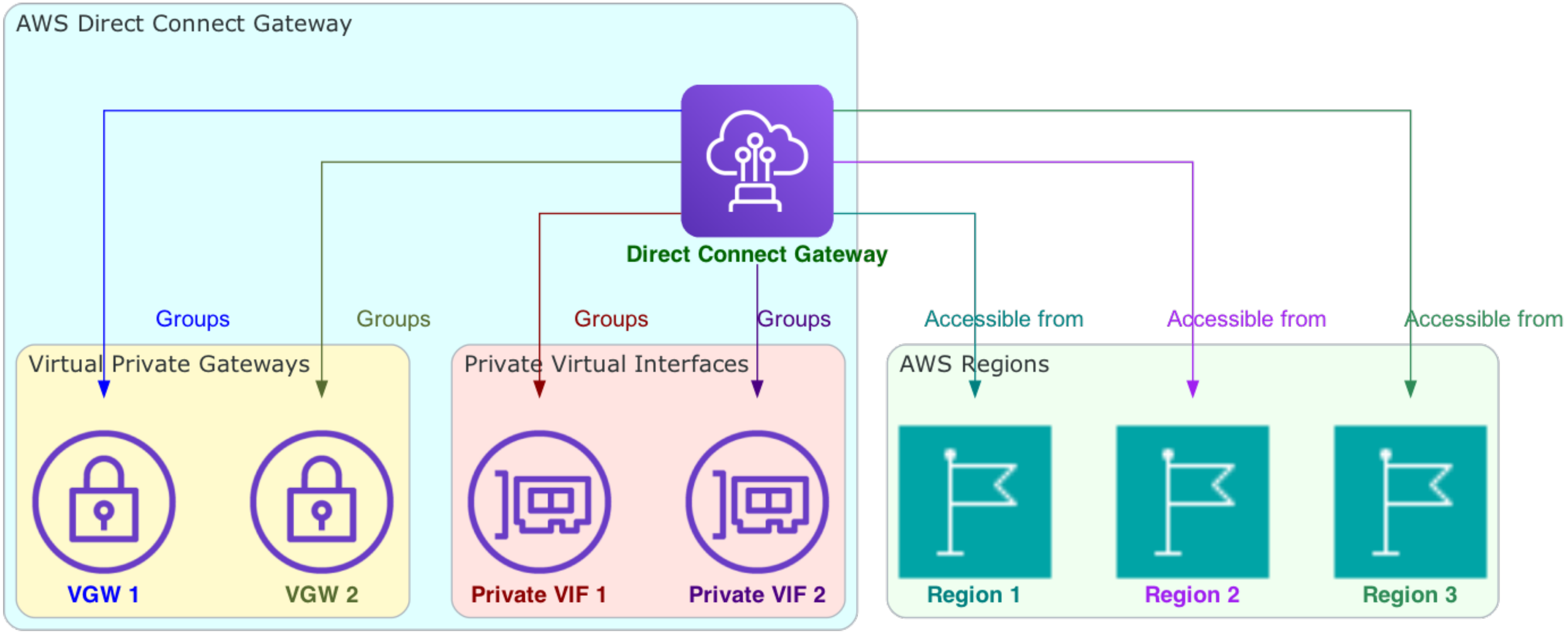
8. 🔌 Connecting AWS Direct Connect

 Over private virtual interface to VPCs in different Regions

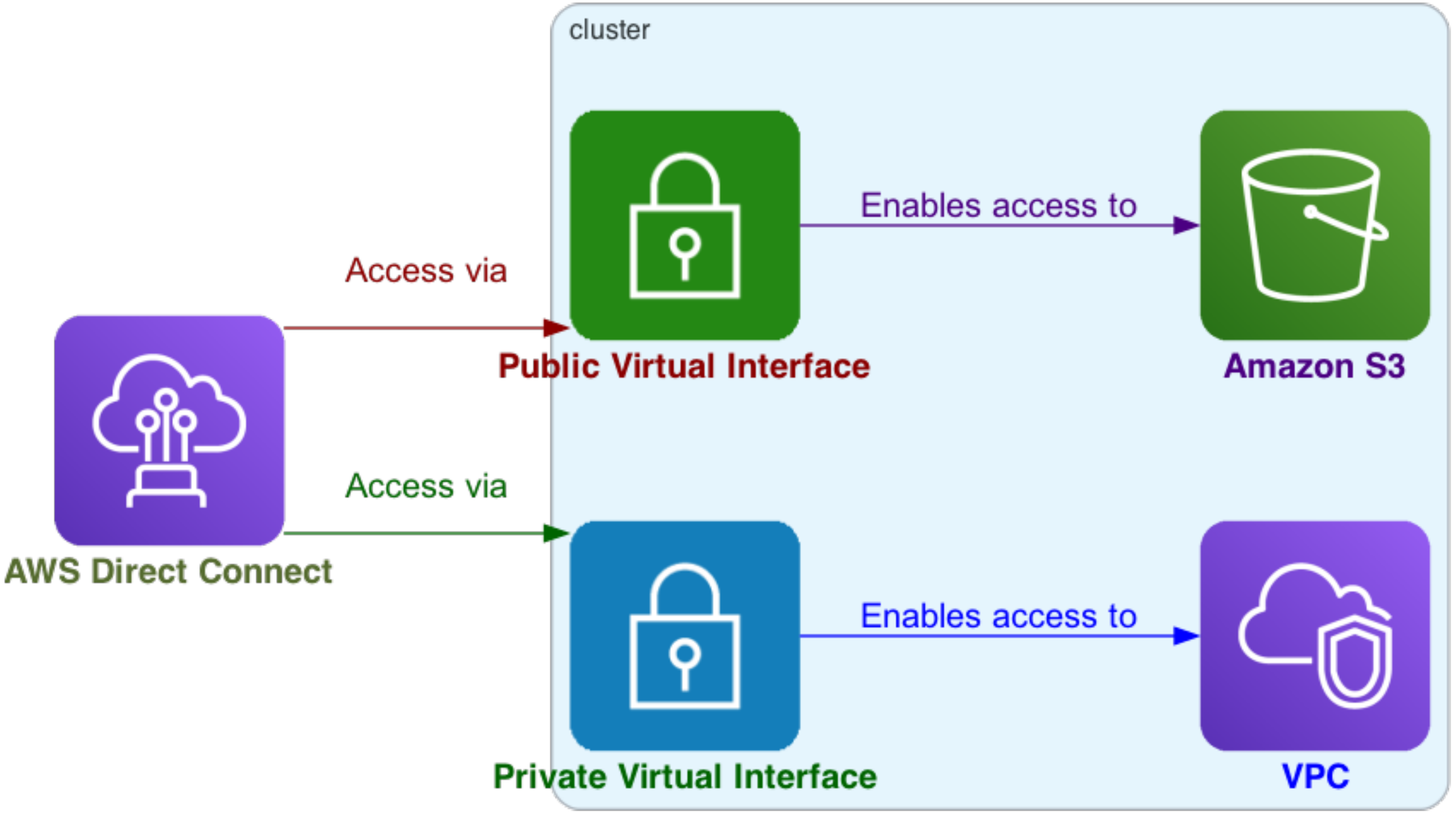
🌉 Or to a transit gateway



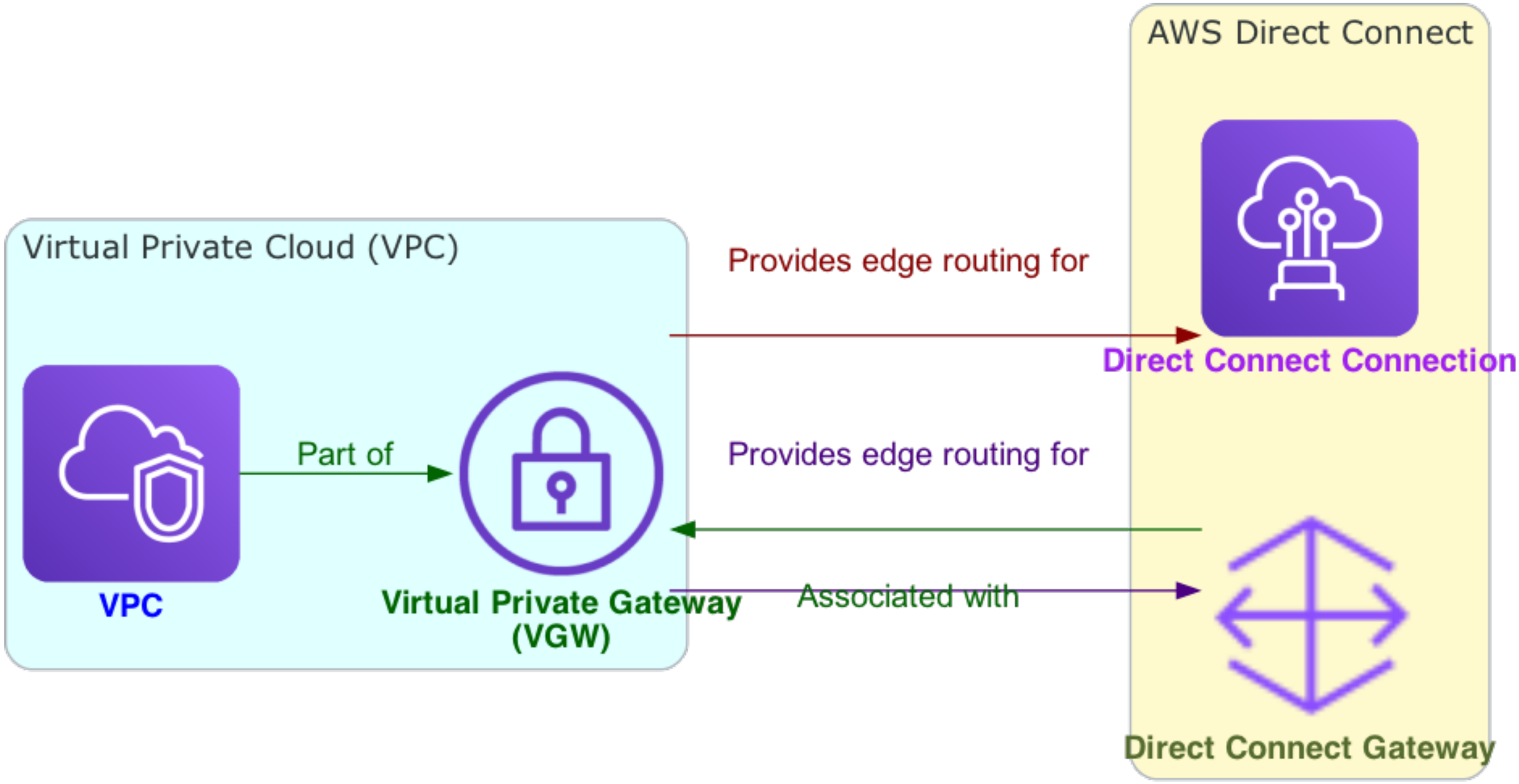
Direct Connect Gateway



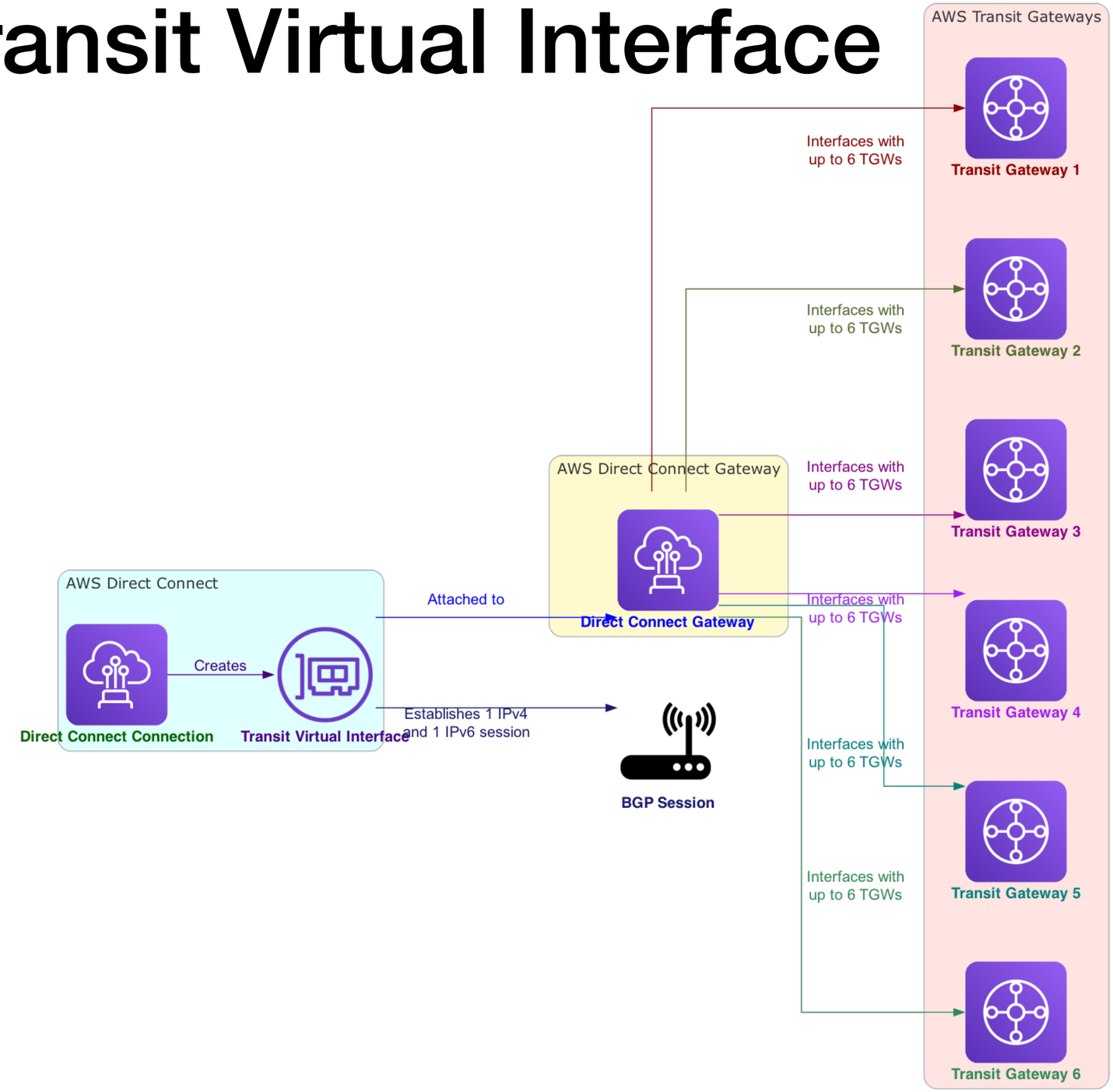
Virtual Interface (VIF)?



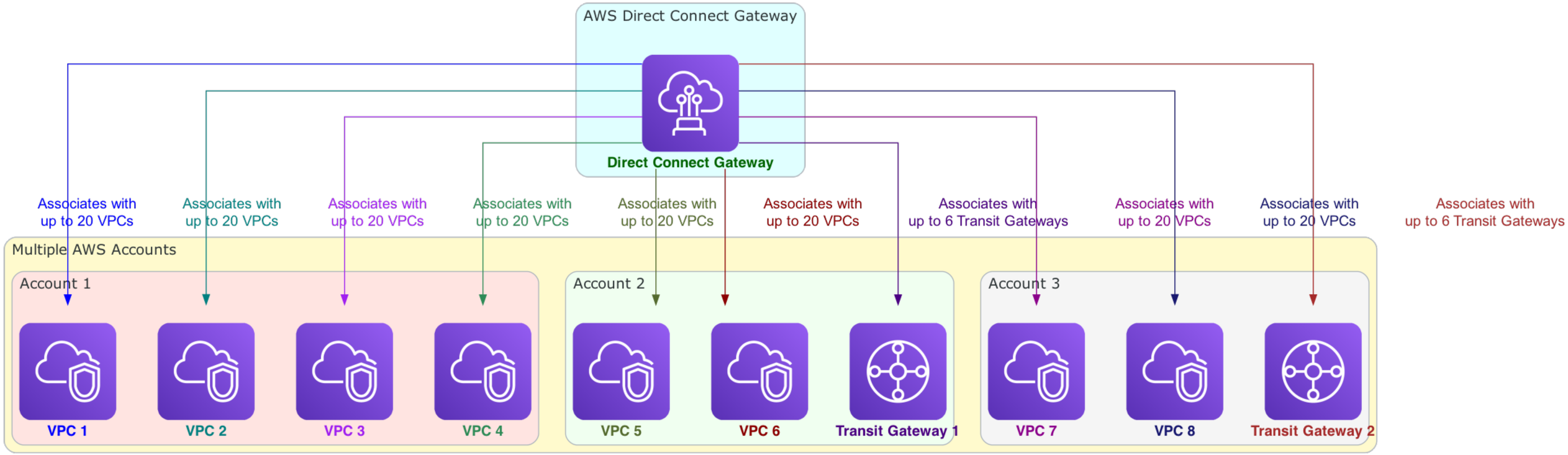
Virtual Private Gateway (VGW)



Transit Virtual Interface



Multi-Account Support for Direct Connect Gateway



Thanks for Watching