

Transit Gateway Routing



Steven Moran

TECHNICAL INSTRUCTOR

Transit Gateway Routing Review



TGWs use route tables to determine where traffic should be forwarded to.

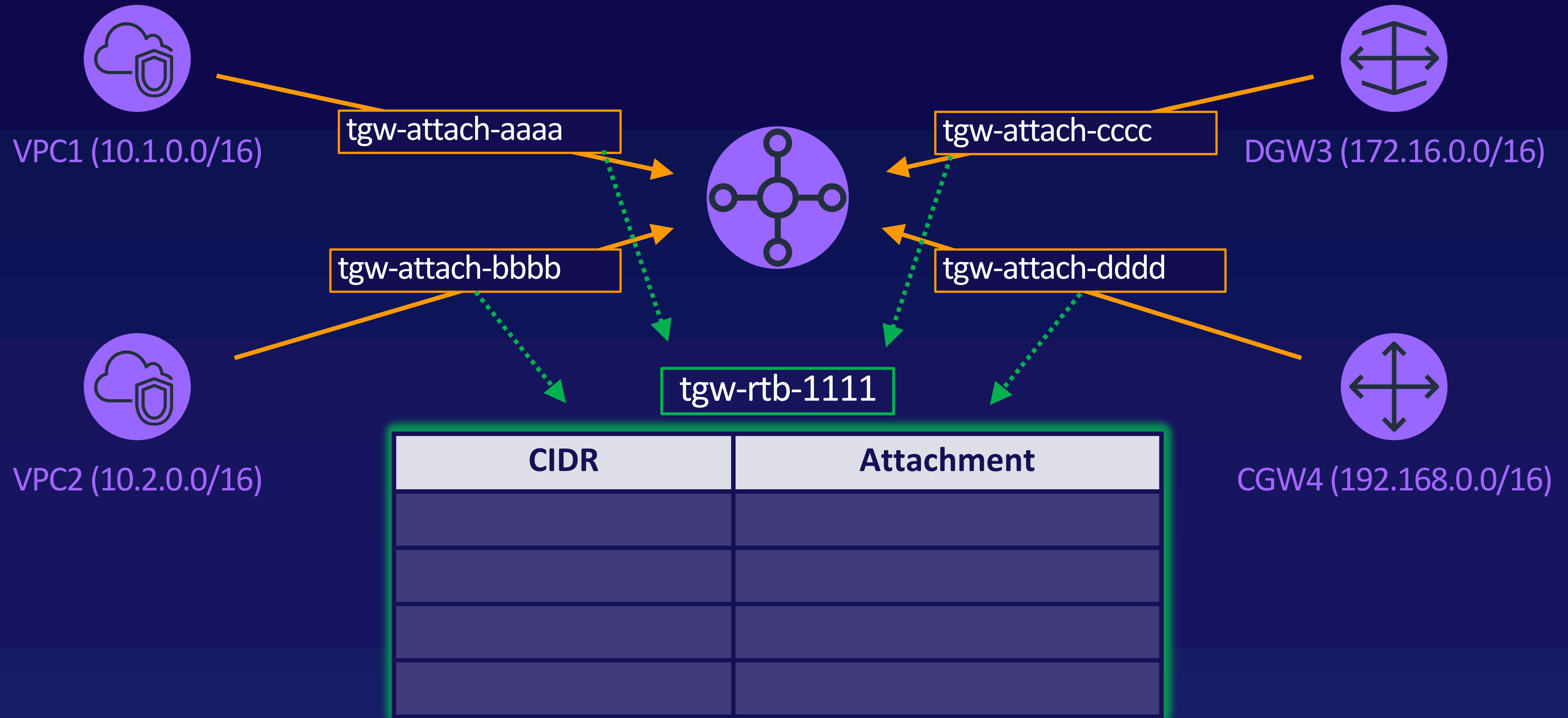
Each TGW attachment can be associated to a single route table.

Route tables may be associated with many attachments.

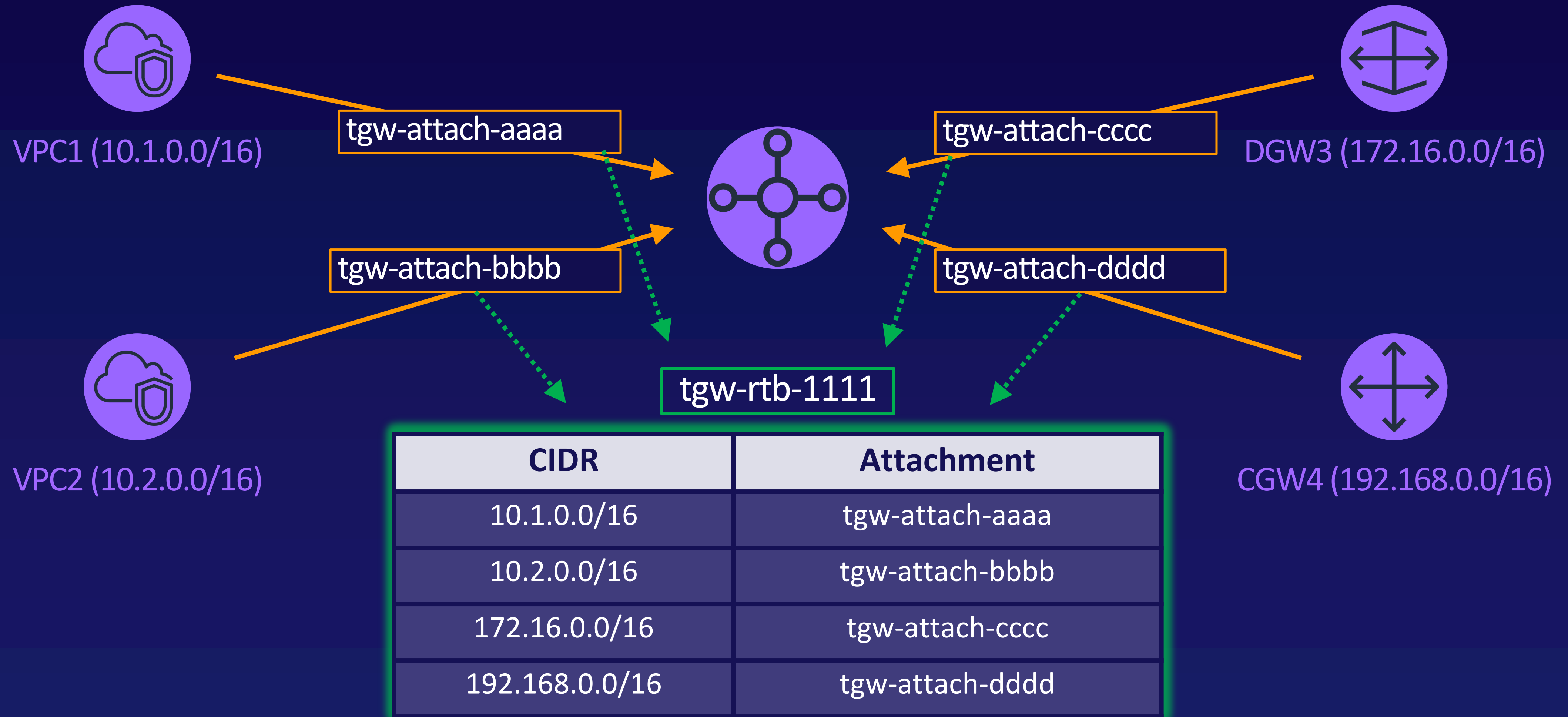
Attached networks may propagate their prefixes to one or more route tables.

By default, new attachments are associated with an initial route table.

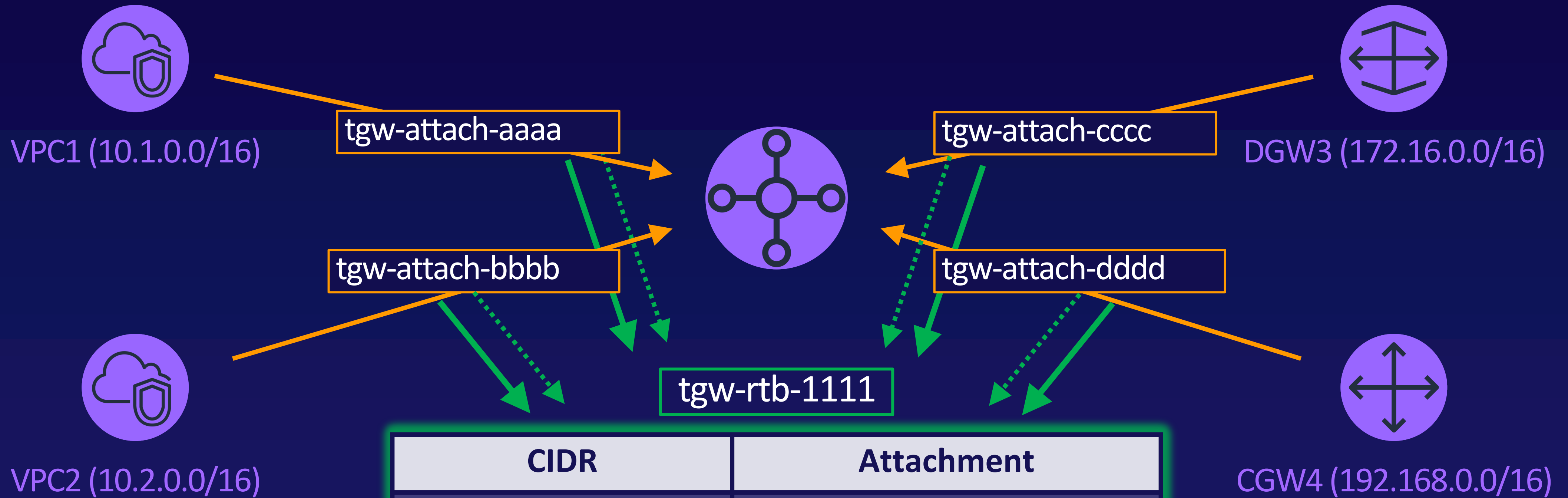
Transit Gateway Route Tables – Example of TGW Defaults



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Transit Gateway Route Tables – Example of TGW Defaults



By default all attached networks can reach each other.

Don't Get Them Confused

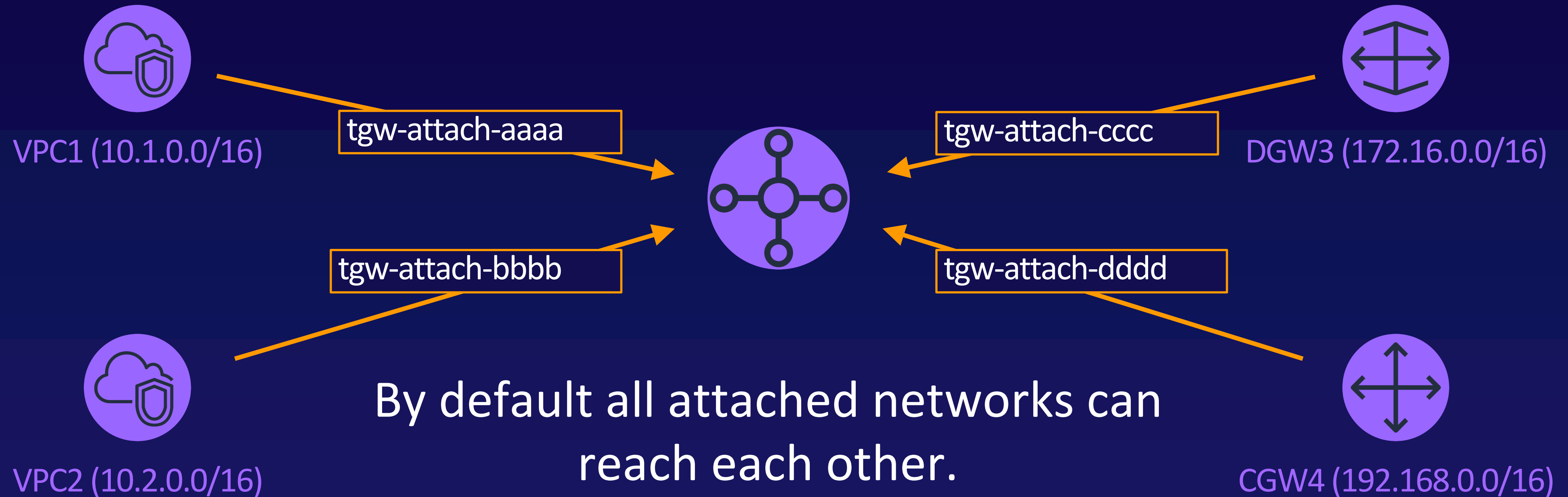
Propagations

- Identify which TGW attachments *automatically add prefixes* to that route table.
- An attachment may propagate to many route tables.

Associations

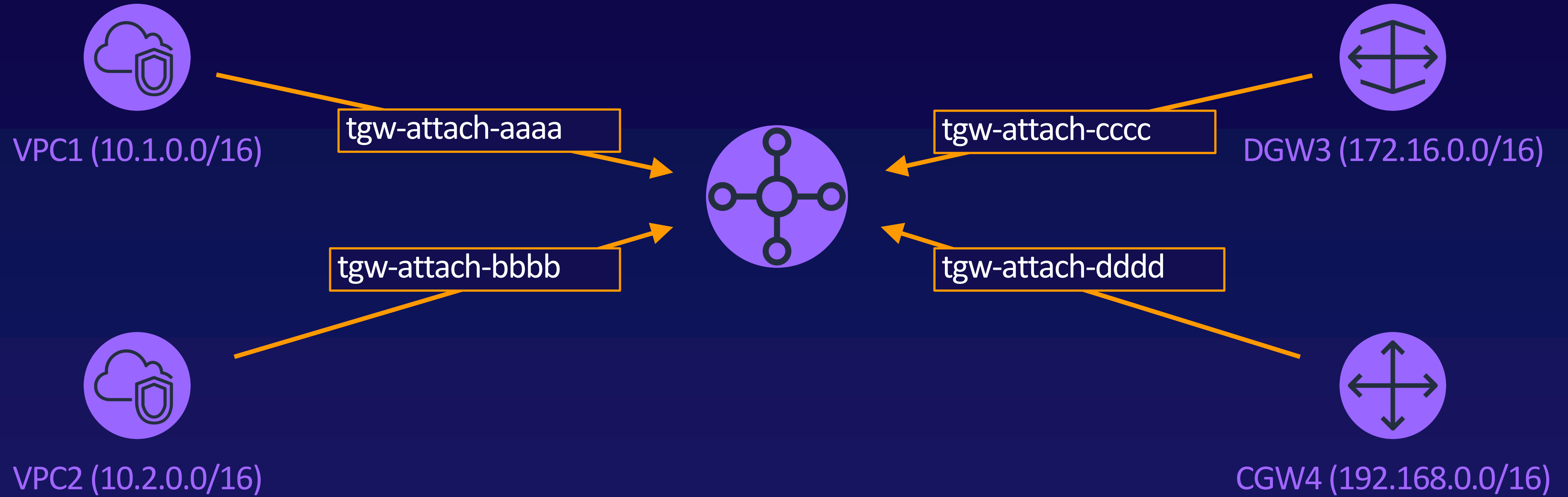
- Identify which TGW attachments use that route table to determine the destination attachment for outbound traffic.
- An attachment may only be associated with a single route table.

Transit Gateway Route Tables – Example of TGW Defaults

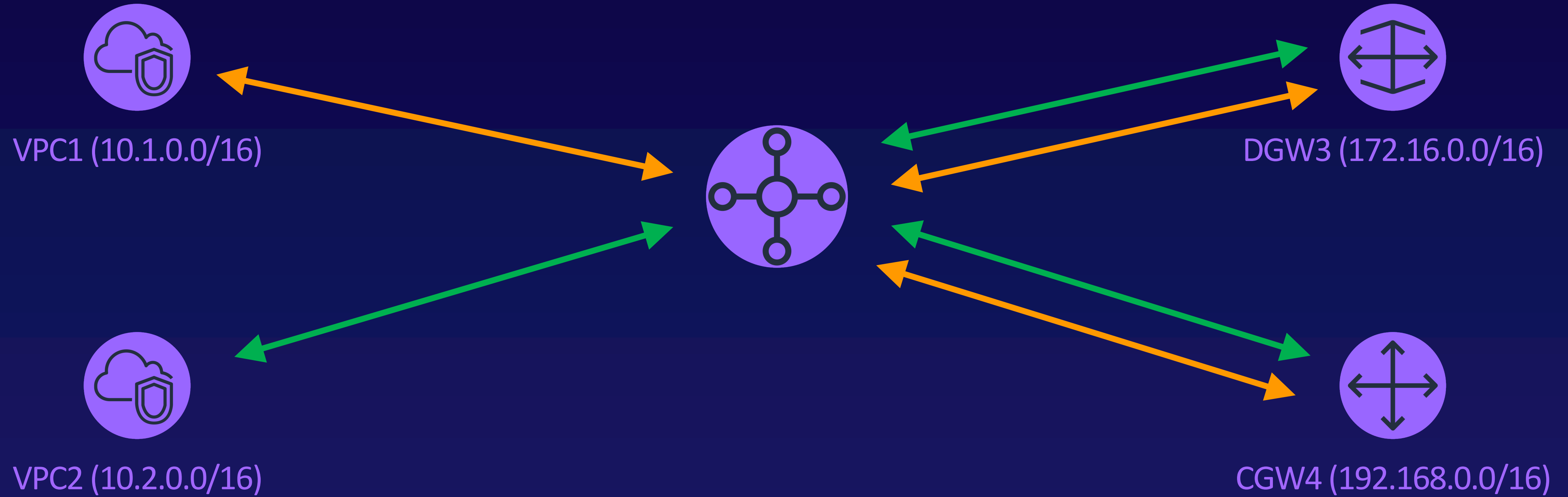


What if we did NOT want all networks to reach each other?

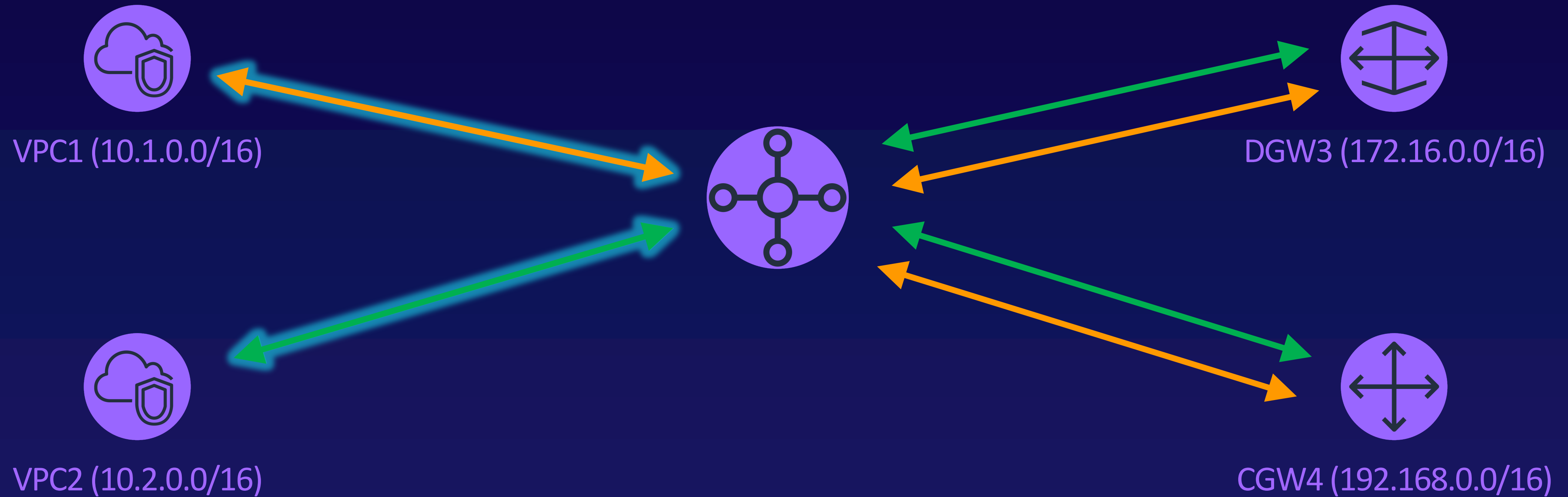
Transit Gateway Route Tables – Isolated VPCs



Transit Gateway Route Tables – Isolated VPCs

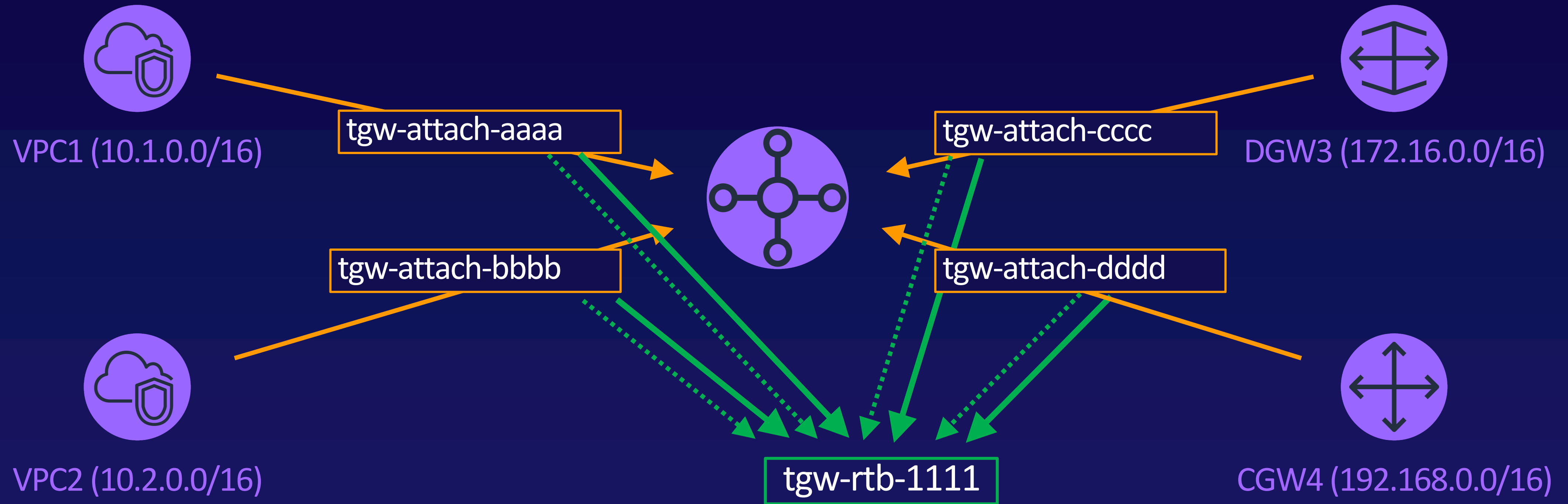


Transit Gateway Route Tables – Isolated VPCs



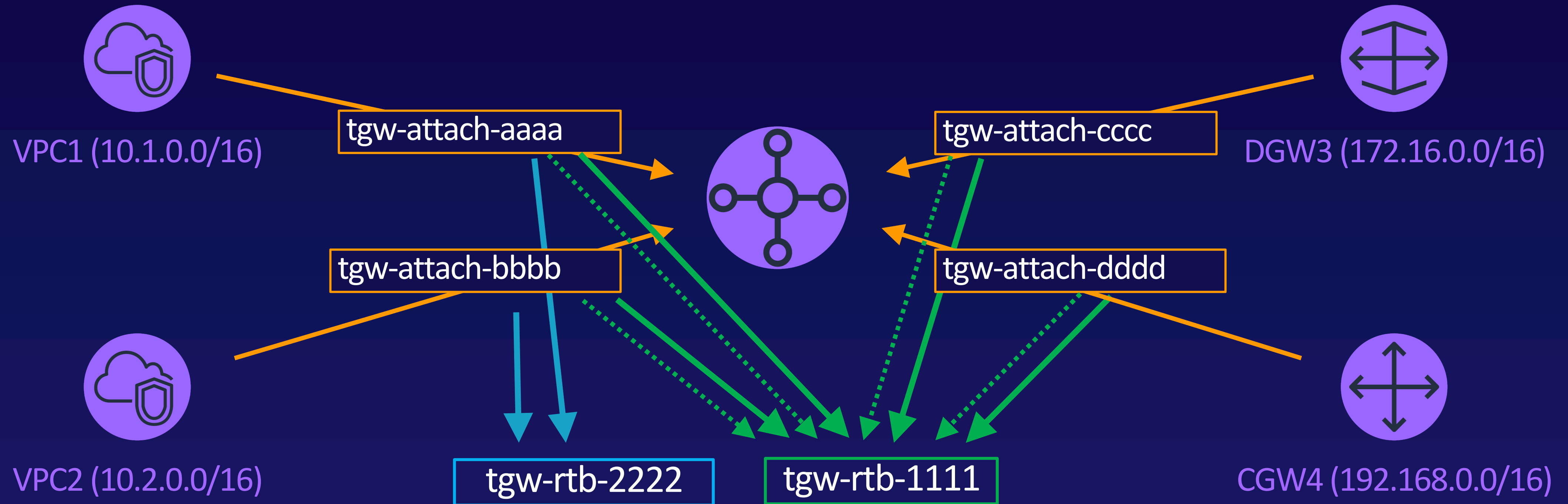
Associate new route tables with the restricted attachments.

Transit Gateway Route Tables – Isolated VPCs



CIDR	Attachment
10.1.0.0/16	tgw-attach-aaaa
10.2.0.0/16	tgw-attach-bbbb
172.16.0.0/16	tgw-attach-cccc
192.168.0.0/16	tgw-attach-dddd

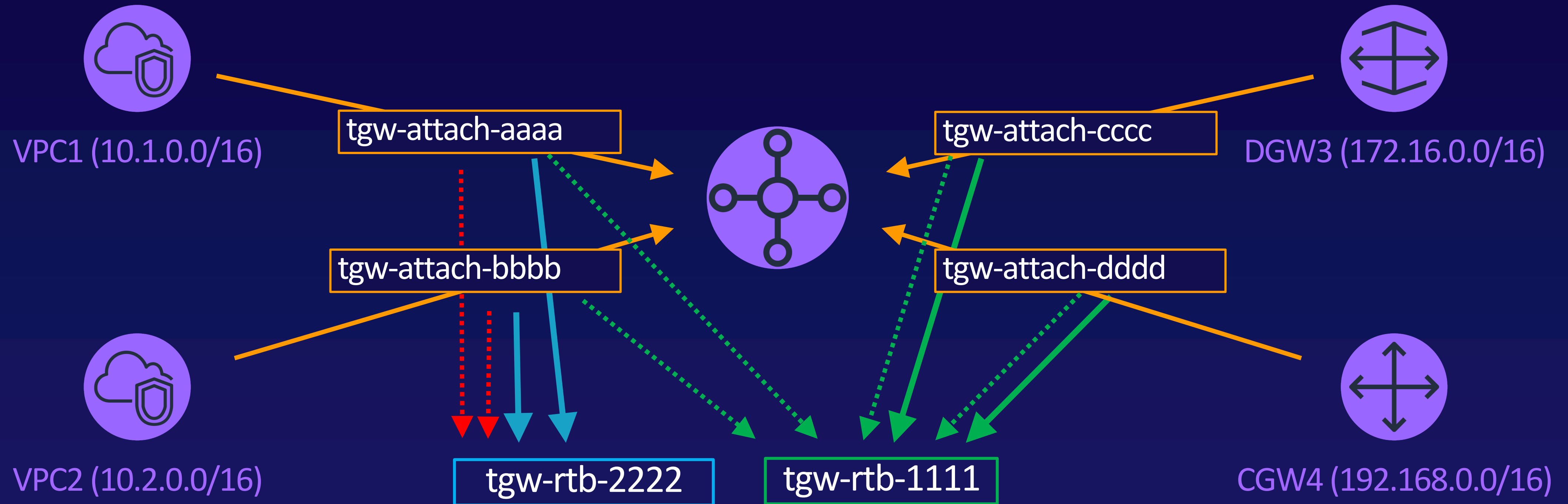
Transit Gateway Route Tables – Isolated VPCs



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10.1.0.0/16	tgw-attach-aaaa
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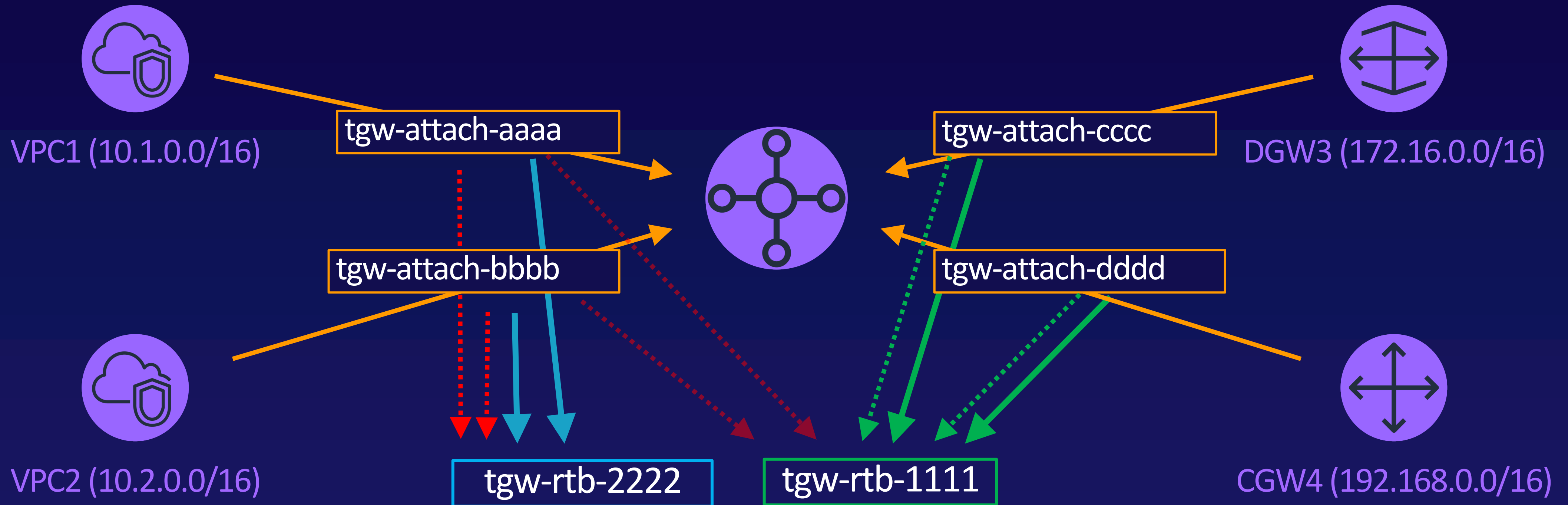
Transit Gateway Route Tables – Isolated VPCs



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192.168.0.0/16	tgw-attach-dddd

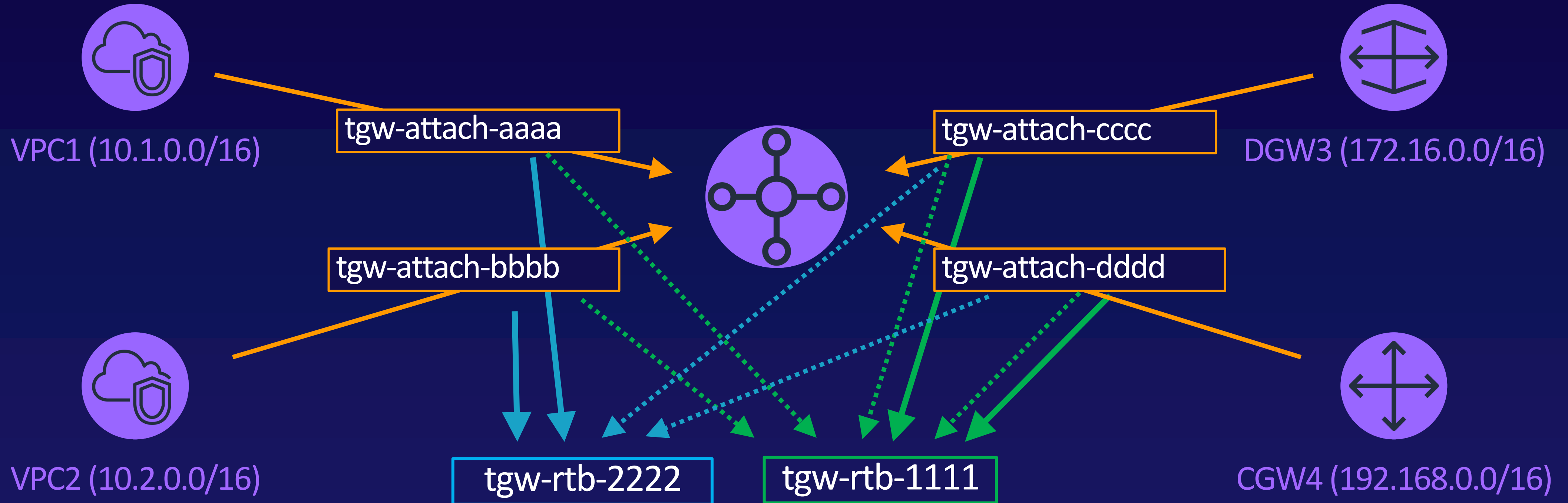
Transit Gateway Route Tables – Isolated VPCs



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192.168.0.0/16	tgw-attach-dddd

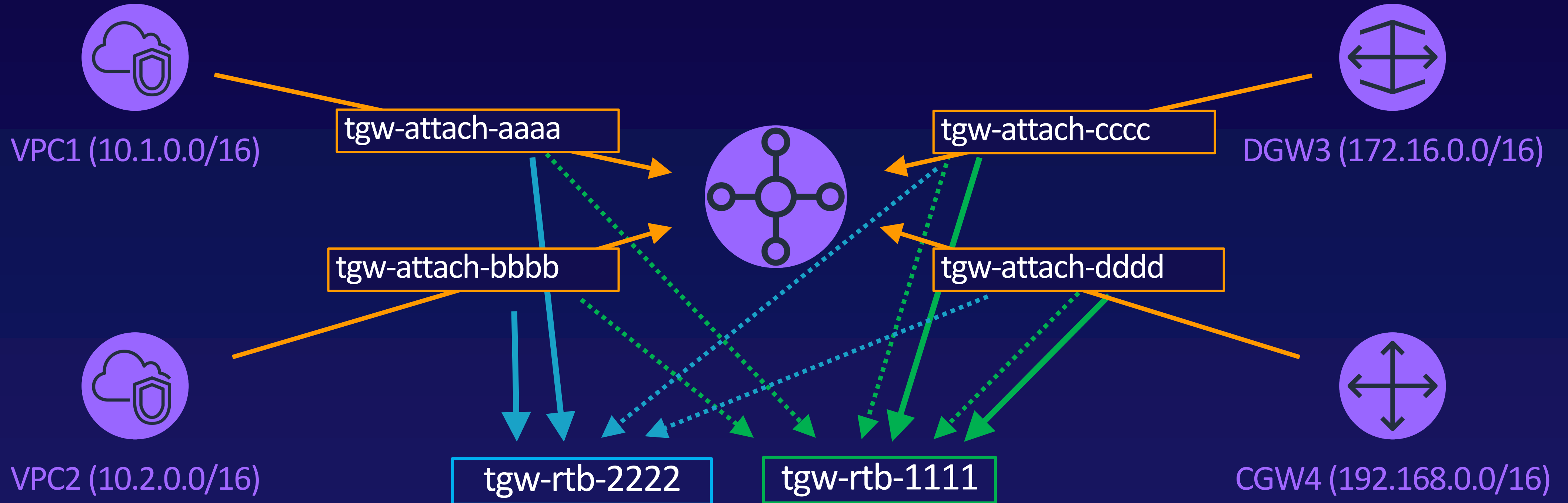
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192.168.0.0/16	tgw-attach-dddd

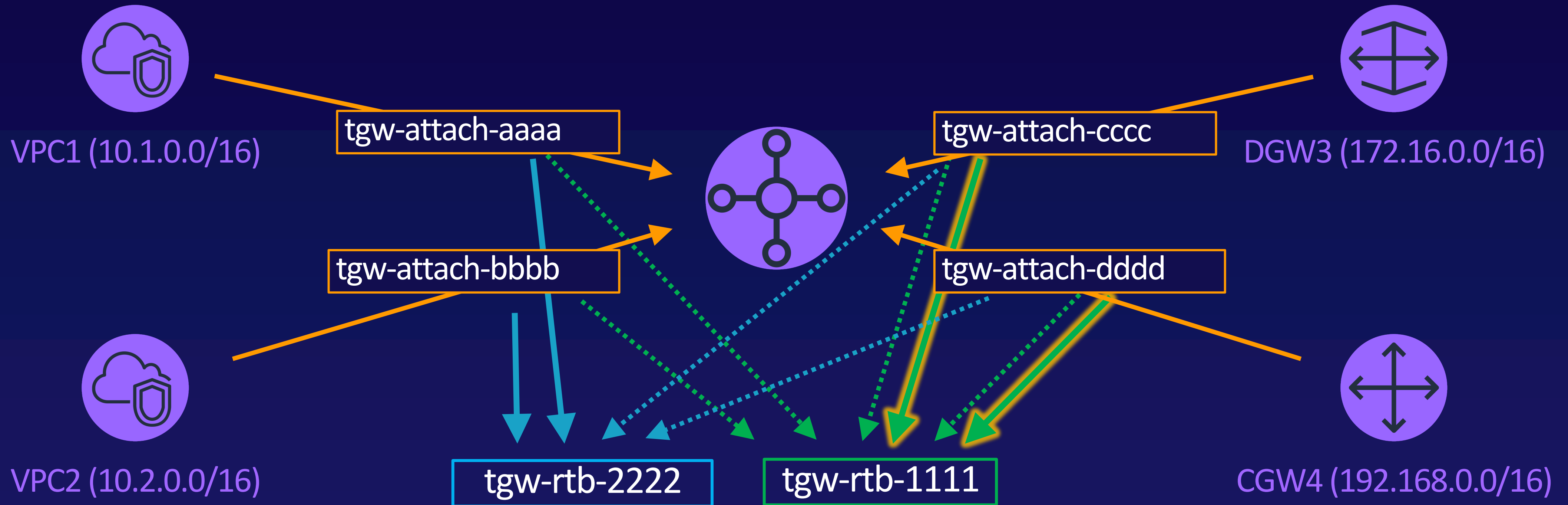
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172.16.0.0/16	tgw-attach-cccc
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10.2.0.0/16	tgw-attach-bbbb
172.16.0.0/16	tgw-attach-cccc
192.168.0.0/16	tgw-attach-dddd

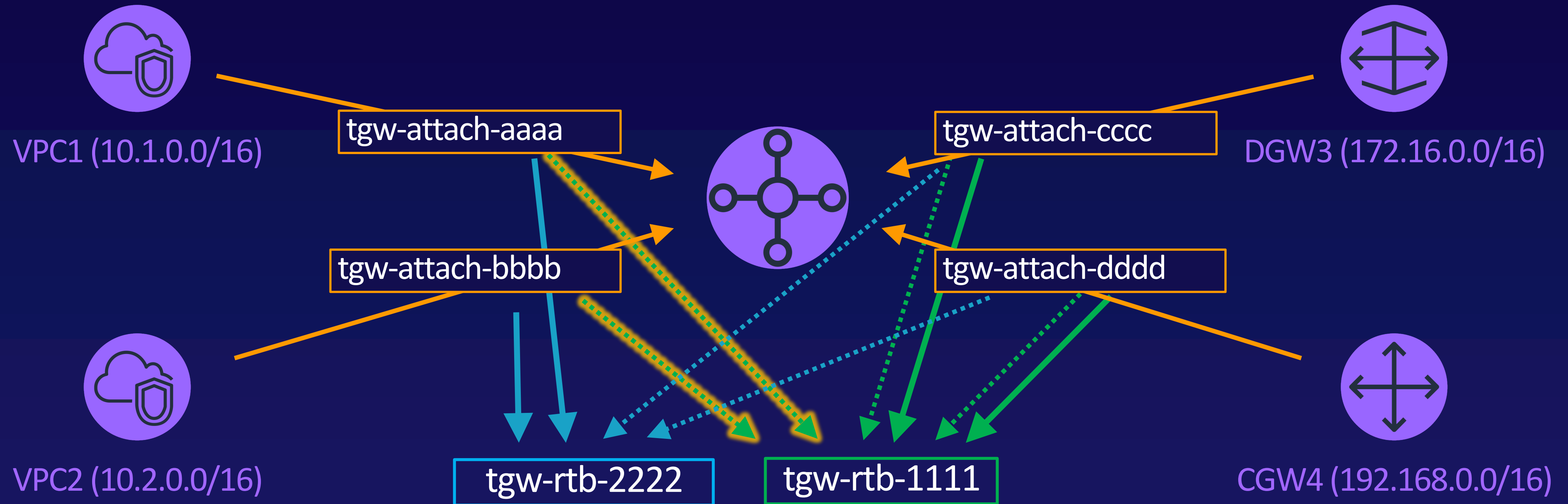
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172.16.0.0/16	tgw-attach-cccc
192.168.0.0/16	tgw-attach-dddd

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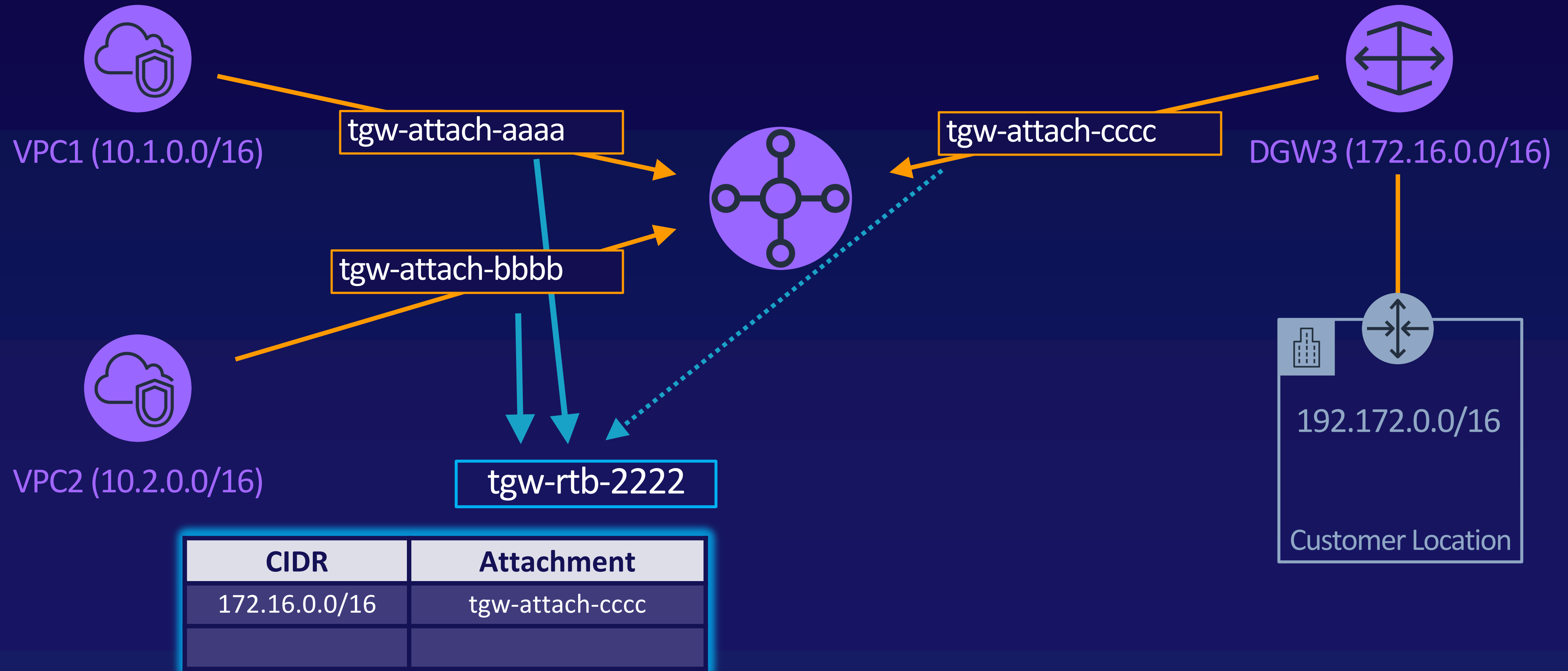
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172.16.0.0/16	tgw-attach-cccc
192.168.0.0/16	tgw-attach-dddd

Transit Gateway Route Tables

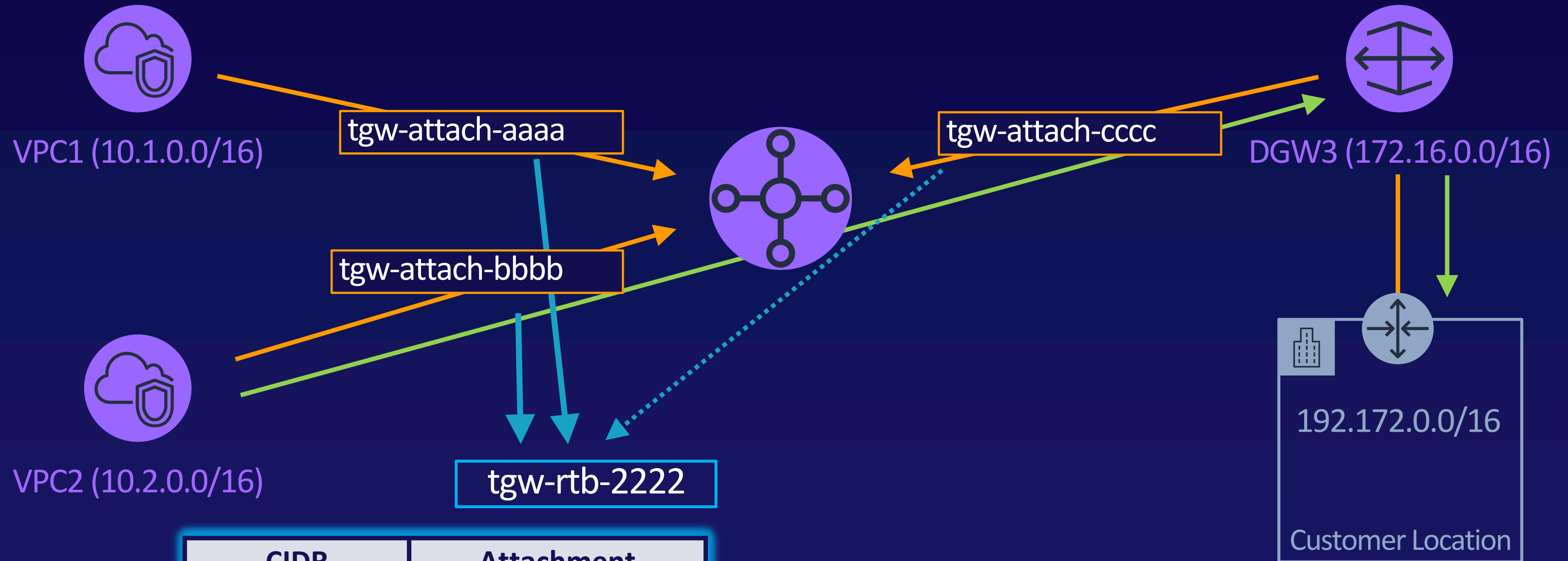
Networks that require restricted communication should be associated with a custom route table

Networks allowed to reach any location can be associated with the initial TGW route table.

Static Routes – Hidden Network

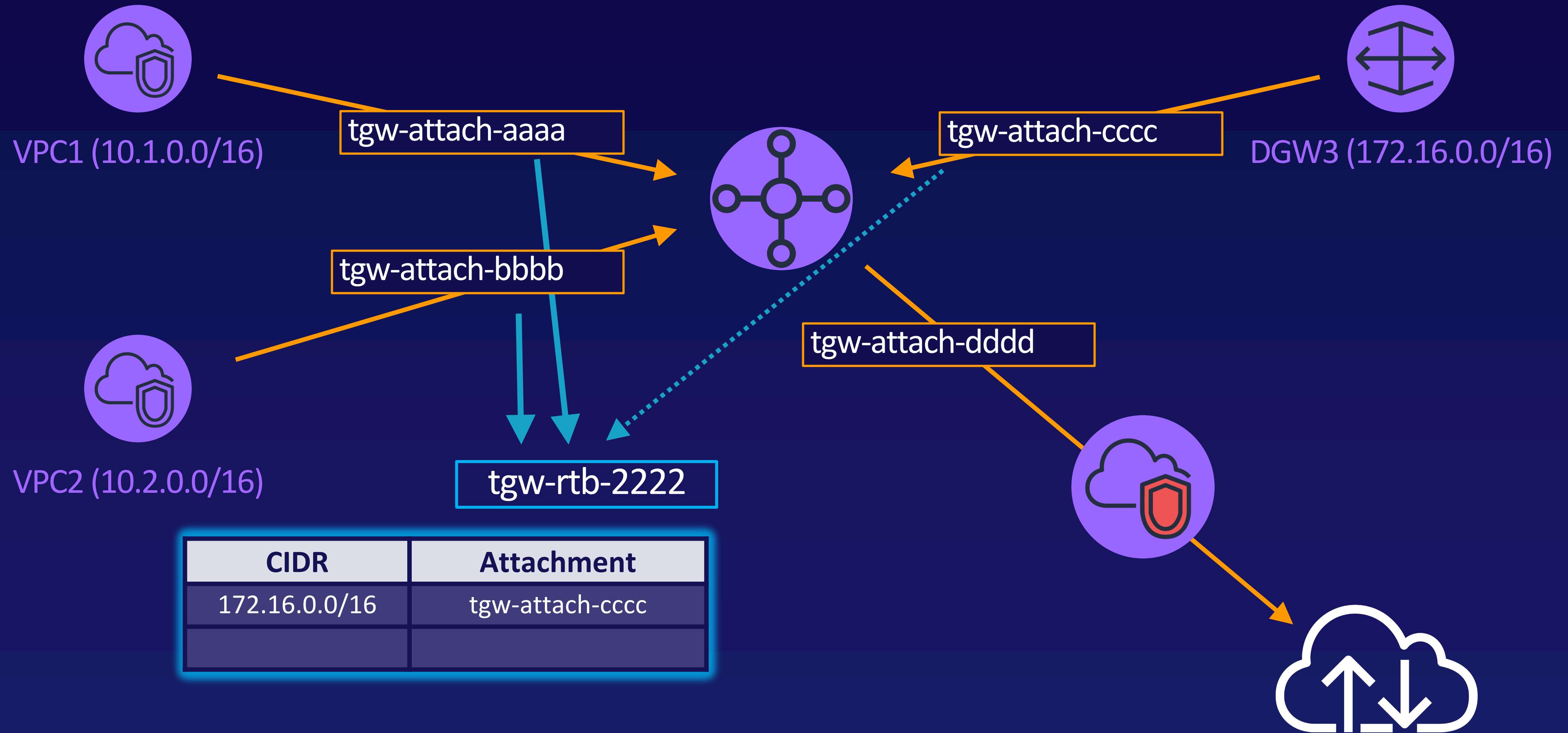


Static Routes – Hidden Network

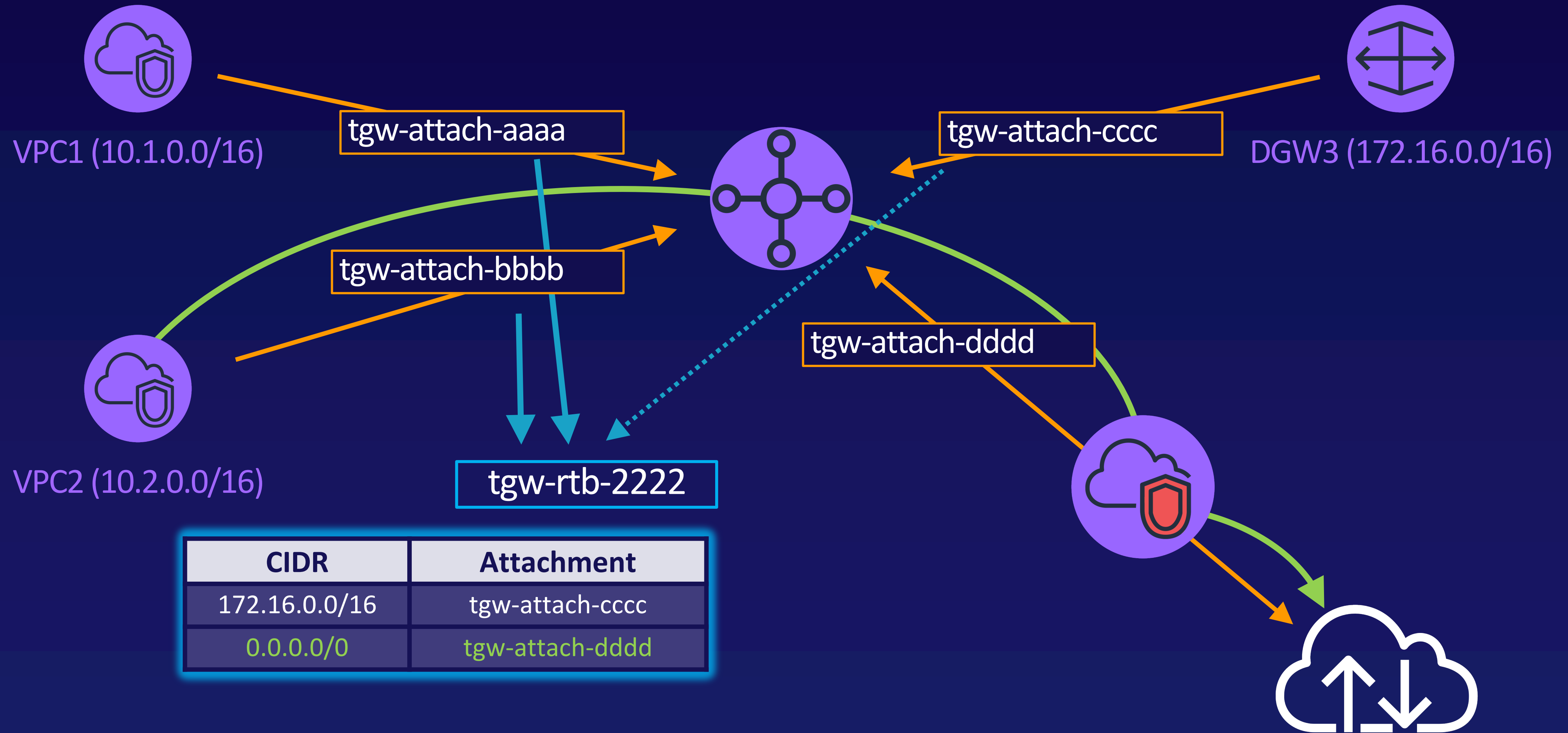


CIDR	Attachment
172.16.0.0/16	tgw-attach-cccc
192.172.0.0/16	tgw-attach-cccc

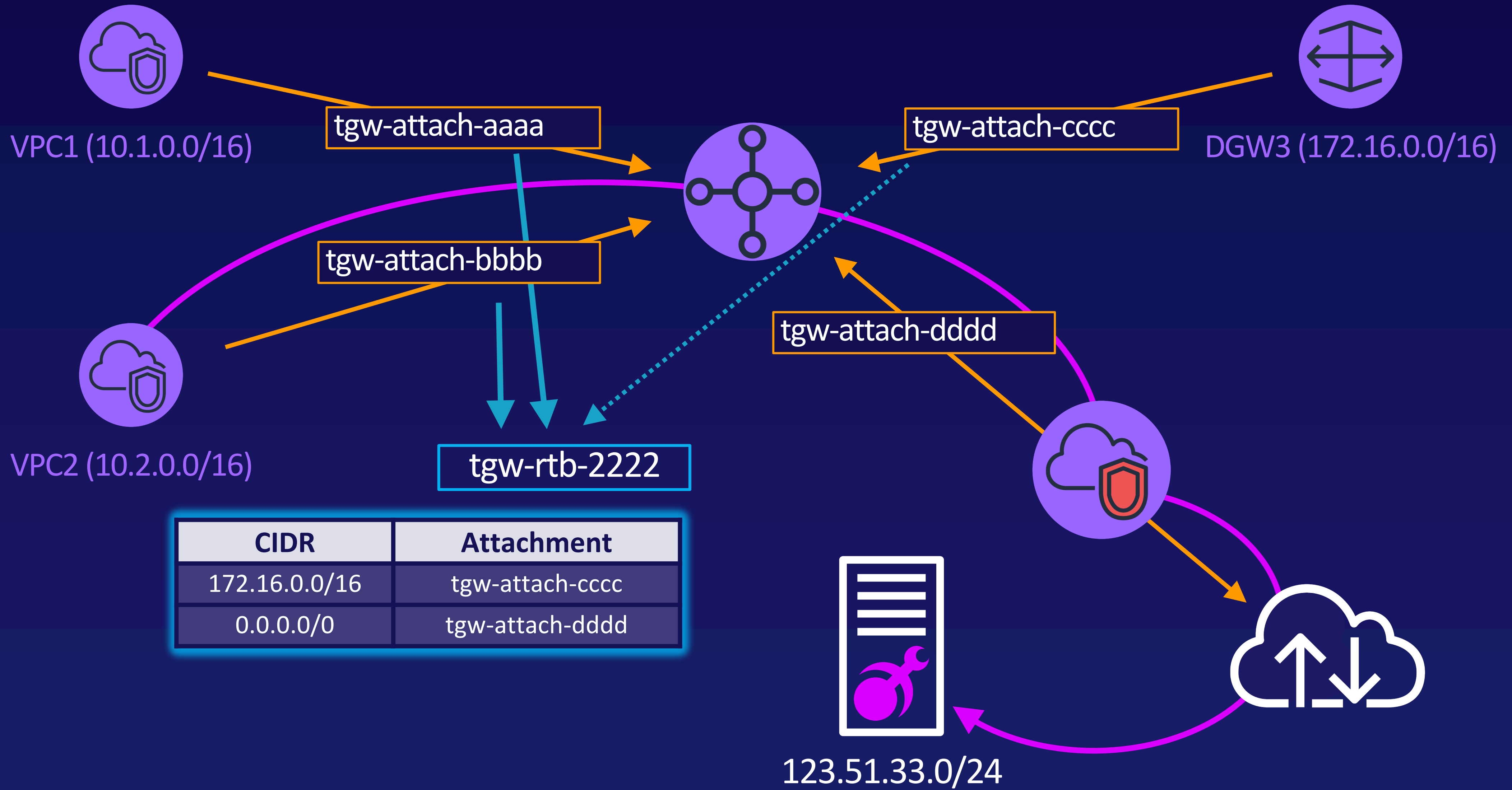
Static Routes – Default Route



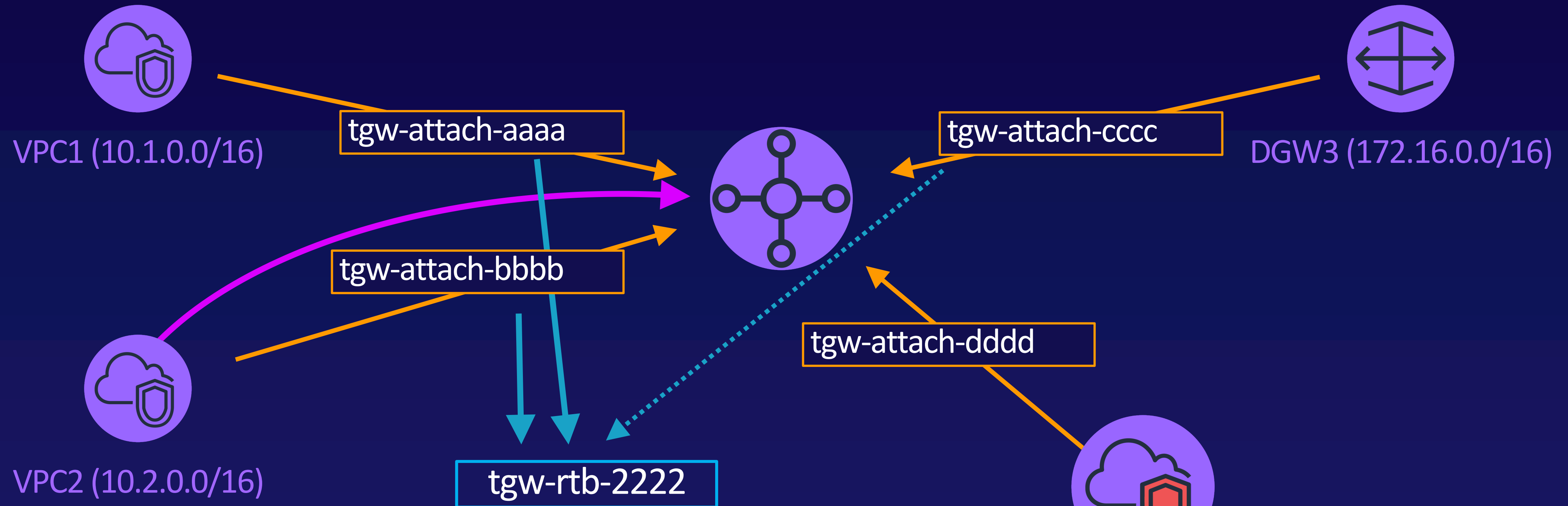
Static Routes – Default Route



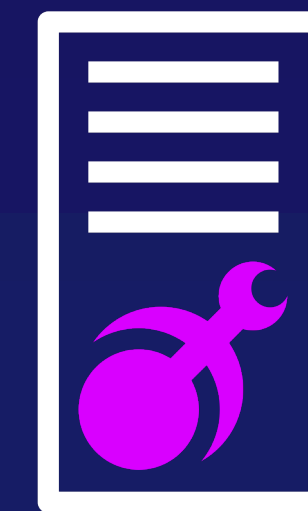
Static Routes – Blackhole Route



Static Routes – Blackhole Route

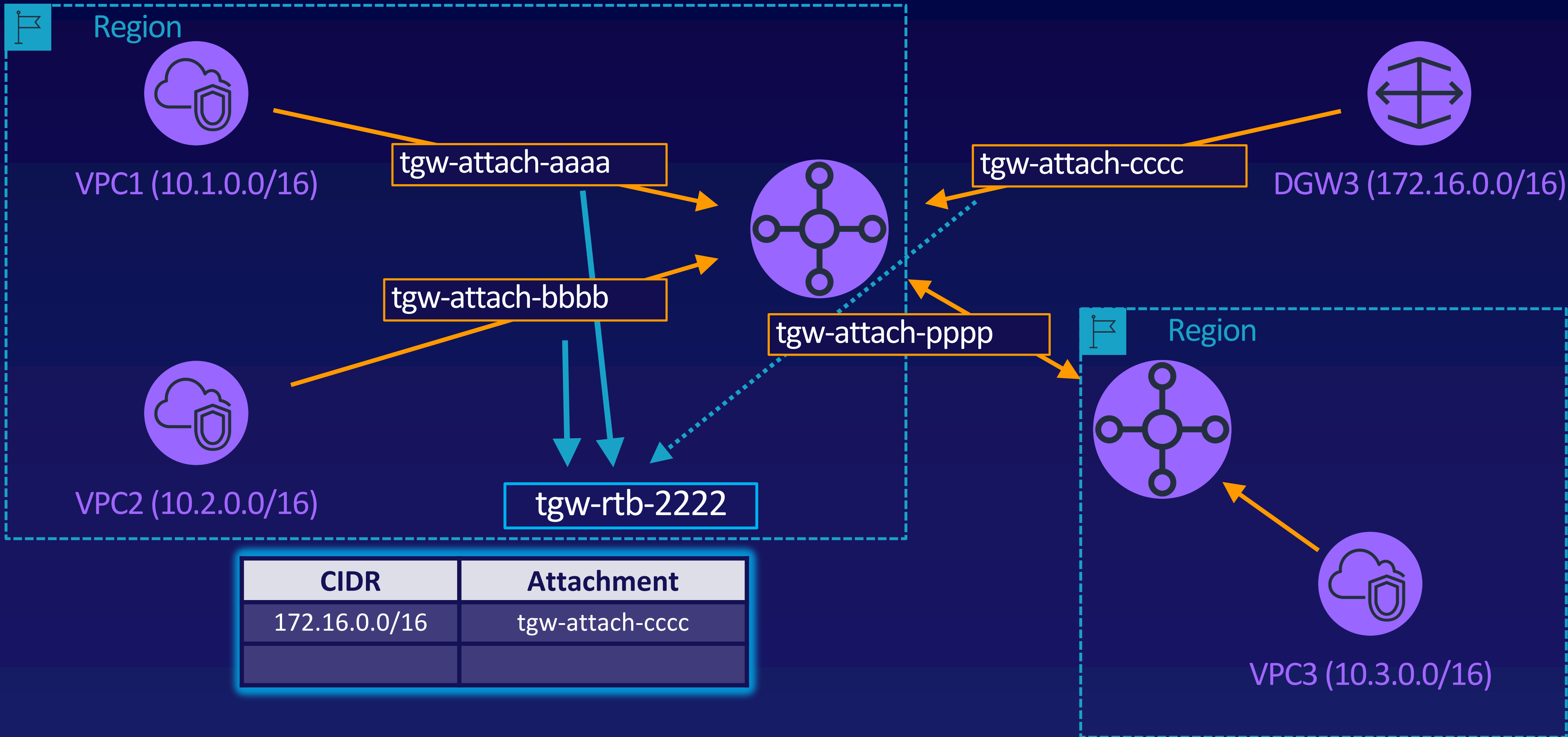


CIDR	Attachment
172.16.0.0/16	tgw-attach-cccc
0.0.0.0/0	tgw-attach-dddd
123.51.33.0/24	—

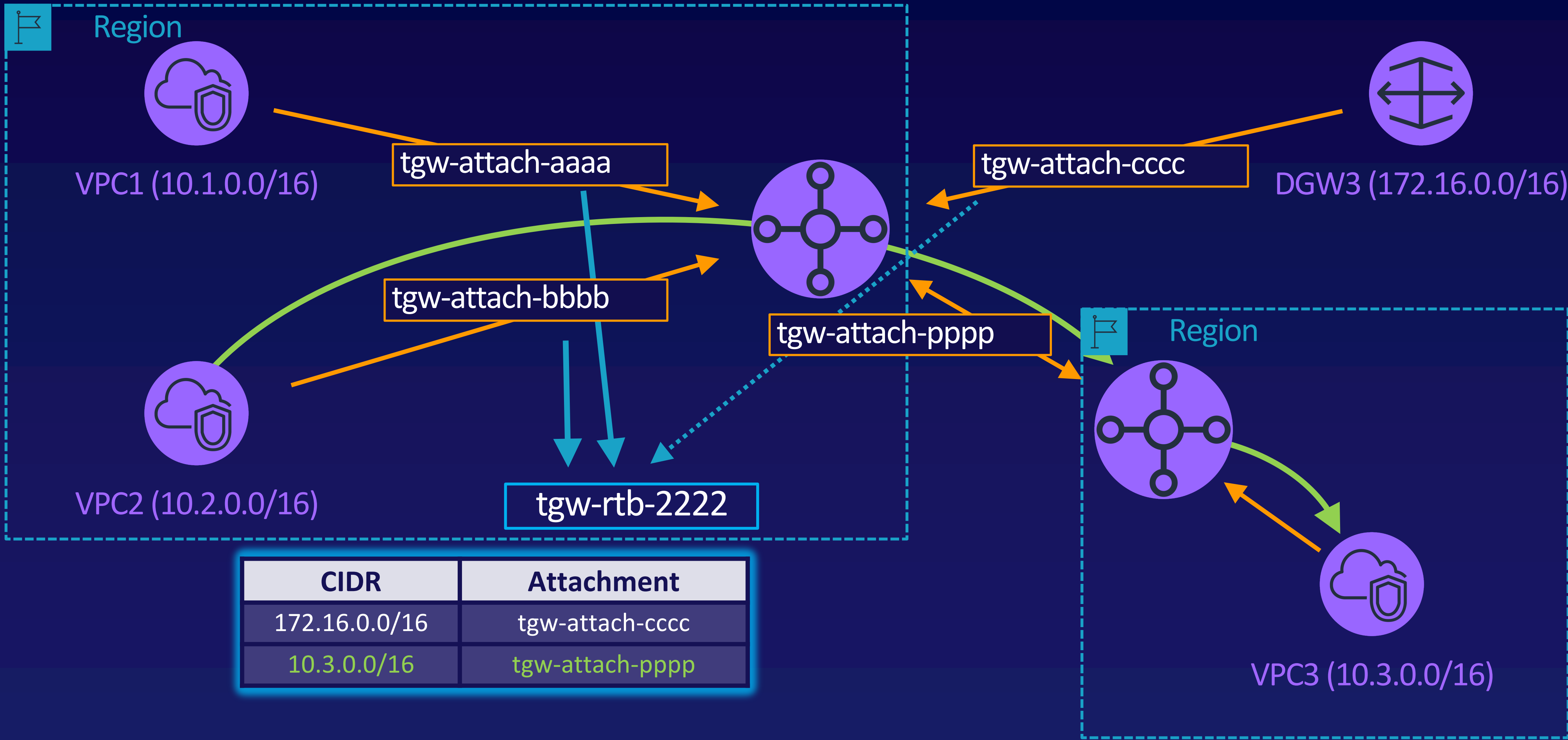


123.51.33.0/24

Static Routes – Peered Transit Gateway



Static Routes – Peered Transit Gateway



- 1 Route with longest prefix
- 2 Static > Propagated
- 3 VPC > DX > VPN

TGW attachments can only be associated to a single TGW route table.

TGW attachments may propagate their advertised CIDRs to more than one TGW route table.

With default settings, all attachments can reach each other.

Attachments requiring limited access to other networks should have their own route table.