

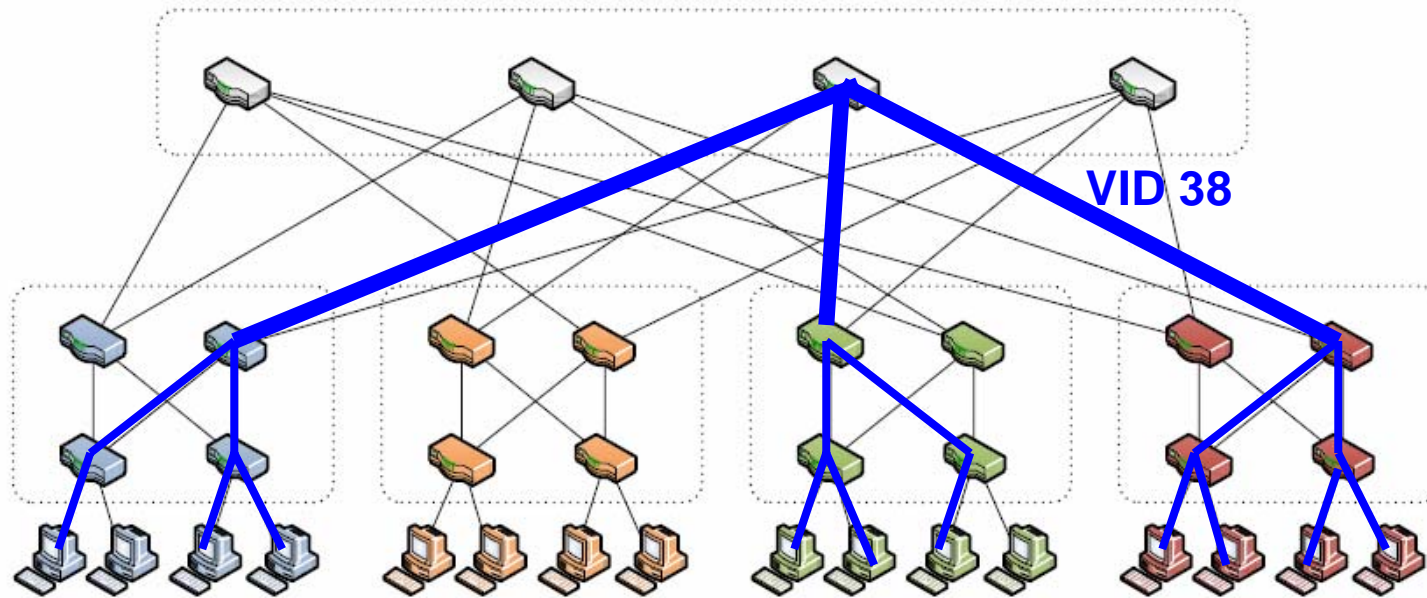
# VID on VDP Reply Sequence Diagrams

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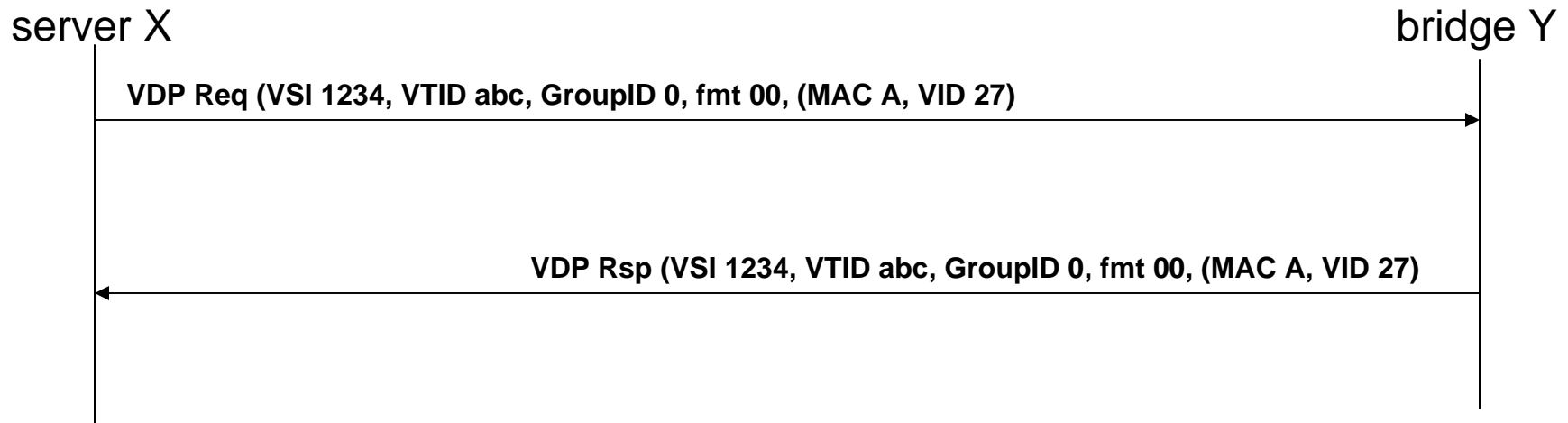
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# Typical *Enterprise* Data Center



- Relatively small number of VLANs ( $\ll 4K$ );
- VLAN identified by *same* VID throughout data center;
  - VID 38 might represent ‘web server traffic’ or ‘engineering organization’;
  - Static and global nature of VID allows it to be known to the Server Admin;

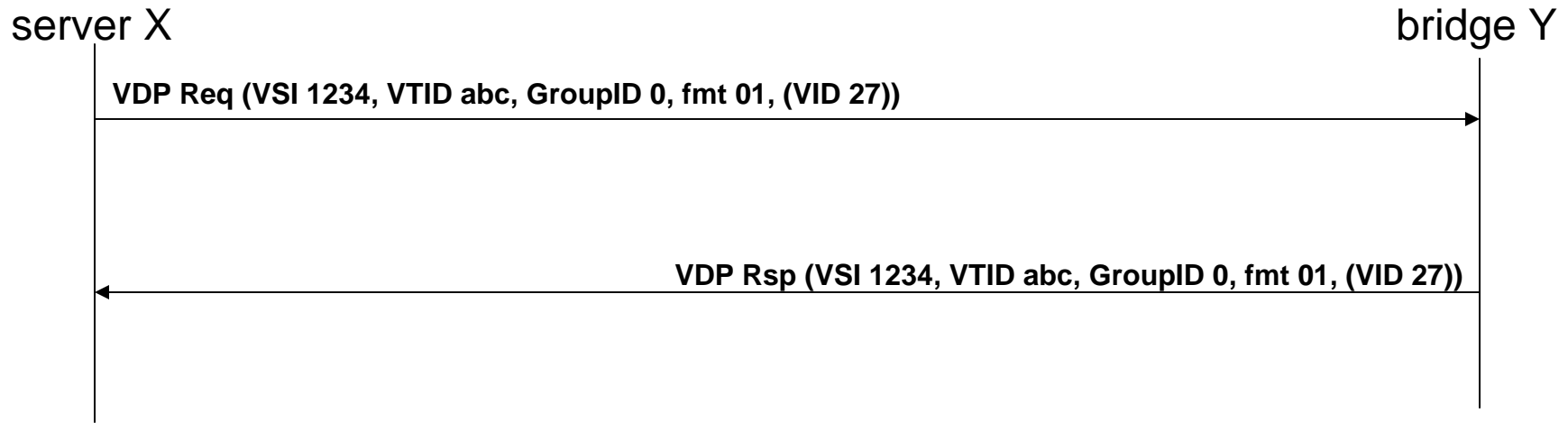
# Scenario 1: Filter on (MAC, VID) VID Global and known to Server



- GroupID = 0 indicates VID value is global;
- VDP Req instructs bridge to use the filter (MAC A, VID 27) to identify traffic associated with VSI 1234 in order to apply VSI-type identified by VTID abc;
- This VDP message would carry a 'filter format' value of 'MAC/VID Format' = 00;

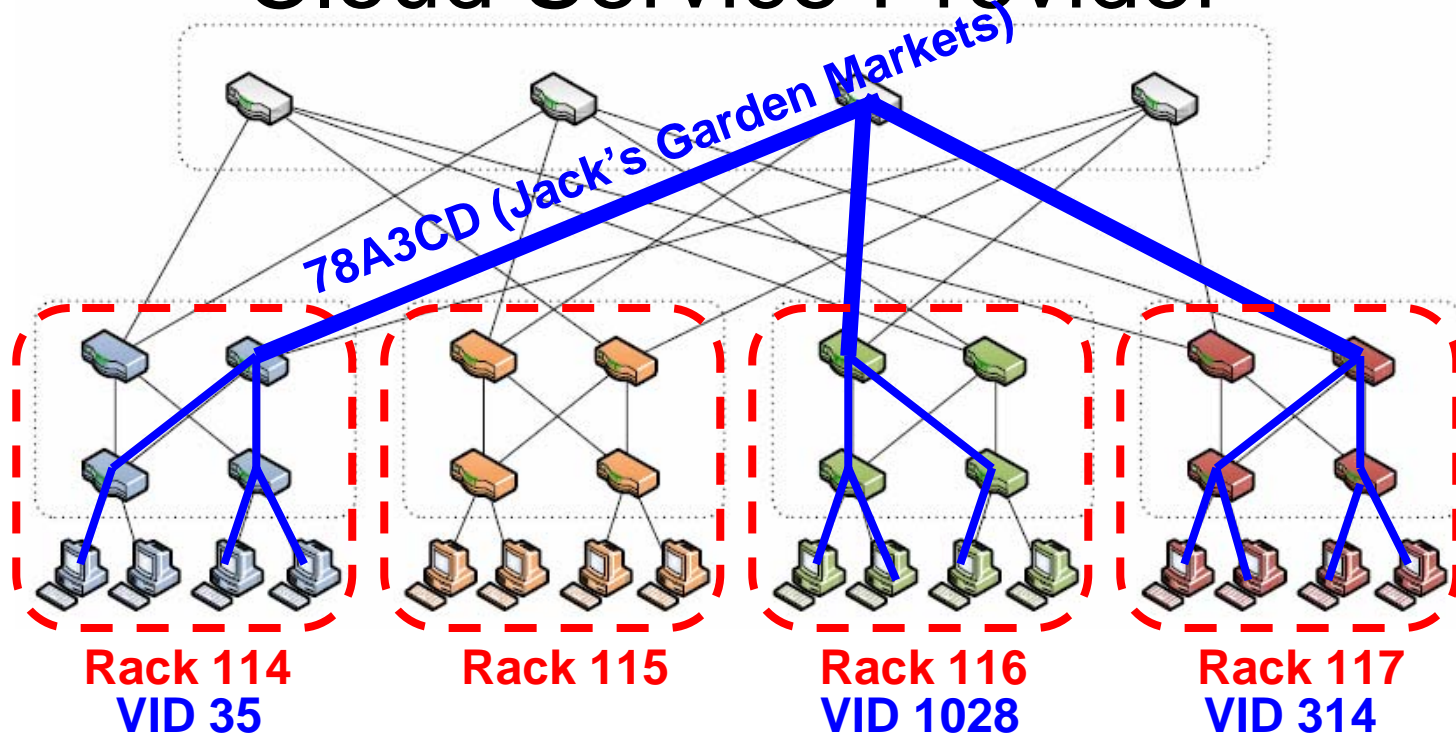
# Scenario 2: Filter on (VID)

## VID Global and known to Server



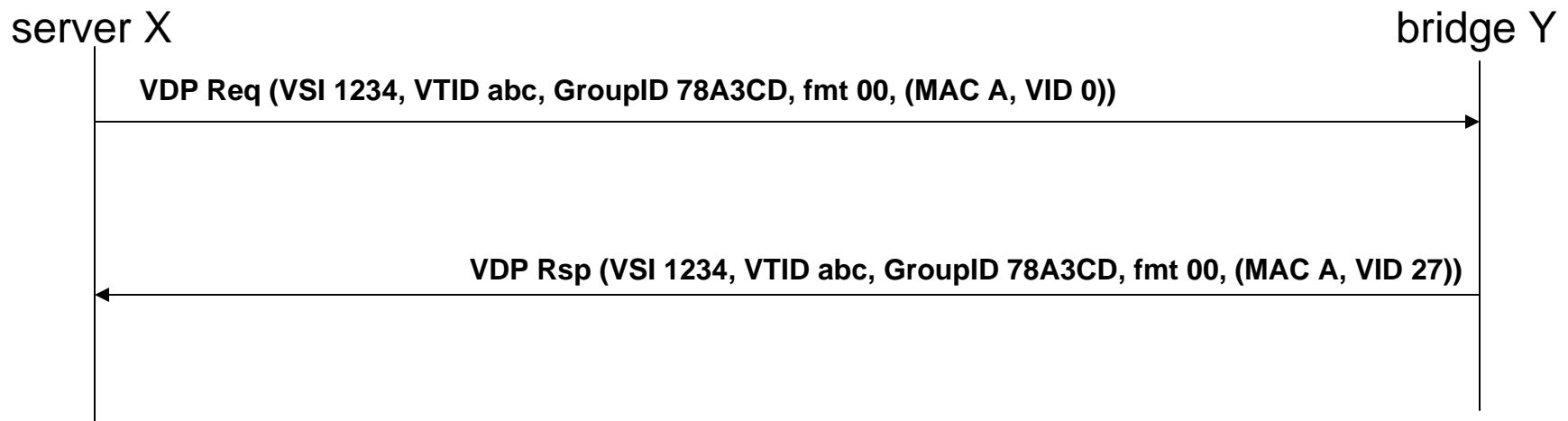
- GroupID = 0 indicates VID value is global;
- VDP Req instructs bridge to use the filter (VID 27) to identify traffic associated with VSI 1234 in order to apply VSI-type identified by VTID abc;
- This VDP message would carry a 'filter format' value of 'VID format' = 01;
- Same as scenario 1 except that (VID) replaces (MAC, VID);

# Cloud Service Provider



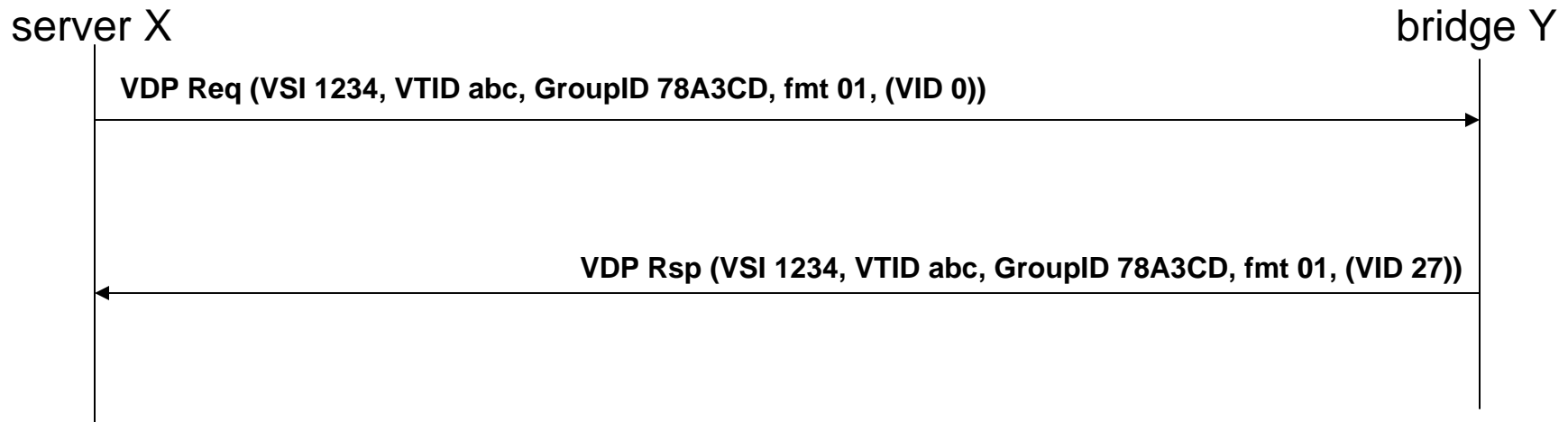
- Data Center providing *cloud services* likely to have >4K Service Instances;
  - Any one rack supports up to 4K;
- GroupID 78A3CD (Jack's Garden Markets) is mapped to different VID at each rack boundary;
- Network Admin (vs. Server Admin) must control assignment of VID to GroupID at each rack;

# Scenario 3: Filter on (MAC, VID); VID assigned by *Bridge*



- VDP Req indicates the filter (MAC A, VID 0) to learn VID associated with VSI 1234 in order to apply VSI-type identified by VTID abc;
- Bridge uses GroupID-to-VID mapping to determine that GroupID 78A3CD corresponds to VID 27. Thus the Bridge applies the filter (MAC A, VID 27);
- Bridge supplies server with the local VID value 27 associated with the GroupID 78A3CD;
- The VDP messages carry a 'filter format' value of 'MAC/VID' = 00;

# Scenario 4: Filter on VID; VID assigned by *Bridge*



- VDP Req indicates the filter (VID) to learn VID associated with VSI 1234 in order to apply VSI-type identified by VTID abc;
- Bridge uses GroupID-to-VID mapping table to determine that GroupID 78A3CD corresponds to VID 27. Thus the Bridge applies the filter (VID 27);
- Bridge supplies server with the local VID value 27 associated with the GroupID 78A3CD;
- The VDP messages carry a 'filter format' value of 'VID'  $\stackrel{7}{=} 01$ .

# Summary

- New message sequence for cloud service case where VID associated with a particular Service Instance can vary from rack to rack;
  - Server can no longer specify VID in VDP
- Message sequences same as existing except server specifies global 'GroupID' instead of local 'VID';
  - Bridge replies to server with VID that server uses for data traffic;
- New message sequences imply *no* change to VDP state machines;
- This is a very simple but essential feature if cloud service data centers are to be supported by Qbg;