



APPENDIX H

VQE Server Performance and Scaling Limits

This appendix summarizes performance information of the Cisco CDE110 and CDE111 platforms hosting the Cisco VQE server. The information is for general deployment estimates only and may vary according to network designs.

[Table H-1](#) presents ingress and egress bandwidth limits for all VQE releases of the CDE110 platform hosting the VQE server.

Table H-1 *Ingress and Egress Bandwidth Limits of the CDE110 Platform hosting the VQE Server*

Version	Ingress Maximum Bandwidth (Gbps)	Egress Maximum Bandwidth (Gbps)	Combined Egress and Ingress Maximum Bandwidth (Gbps)
VQE Release 2.1	1.0	1.0	2.0
VQE Release 3.0	1.0	1.5	2.5
VQE Release 3.1	1.0	2.0	3.0
VQE Release 3.2	1.0	2.0	3.0
VQE Release 3.3	1.0	2.0	3.0
VQE Release 3.4	1.0	2.0	3.0

[Table H-2](#) presents ingress and egress bandwidth limits for all VQE releases of the CDE111 platform hosting the VQE server.

Table H-2 *Ingress and Egress Bandwidth Limits of the CDE111 Platform hosting the VQE Server*

Version	Ingress Maximum Bandwidth (Gbps)	Egress Maximum Bandwidth (Gbps)	Combined Egress and Ingress Maximum Bandwidth (Gbps)
VQE Release 3.2	1.0	3.0	4.0
VQE Release 3.3	1.0	3.0	4.0
VQE Release 3.4	2.0	3.0	4.0

As shown in [Table H-2](#) above, in VQE Release 3.4, the maximum ingress bandwidth on the CDE111 platform hosting the VQE server is up to 2 Gbps, and the maximum egress bandwidth is up to 3 Gbps. The combination of ingress and egress bandwidth cannot exceed 4 Gbps. For example, if 1 Gbps of ingress bandwidth is used, up to 3 Gbps of egress bandwidth may be used. Similarly, if 2 Gbps of ingress bandwidth are used, up to 2 Gbps of egress bandwidth may be used.

Table H-3 presents scaling and performance summary for all releases of the CDE110 and the CDE111 platforms hosting the VQE server.

Table H-3 **Scaling and Performance Summary of the CDE110 and CDE111 Platforms hosting the VQE Server across all Releases**

Scale Factor	Maximum Value across all VQE Releases
Maximum number of Unicast Retransmission Repair Requests (NACKS) input per second.	10,000
Maximum Unicast Retransmission Rate—packets output per second.	50,000
Maximum Number of Ingest Channels—This is subject to an additional constraint of platform ingest limits.	500 channels or the maximum ingest bandwidth in Gbps, whichever limit is reached first.
Maximum Number of Simultaneous Client Subscribers—A subscriber is defined as a consumer of video channel data. For a set-top box with multiple tuners (such as a watch one, record one capable set-top box), the VQE-S counts this as 2 subscribers.	32,000

VQE-S separates the bandwidth resources that are dedicated to Unicast Retransmission and RCC. A VQE-S configuration parameter (`vqe.vqes.reserved_er_bw`) controls the bandwidth resources that are dedicated to Unicast Retransmission. The parameter allows the amount of resources dedicated to Unicast Retransmission to be reduced so that the resources are available for RCC instead.



Note

VQE licenses for Unicast Retransmission and RCC are sold separately per set-top box. Software licenses for Unicast Retransmission and RCC are sold separately from the hardware.



Note

Each scaling limit is applied separately and all scaling limits must be met for proper service. Exceeding any of the scaling limits will cause service to be denied.