Course Resources

Segment 1

Exam guide: https://cloud.google.com/certification/guides/professional-cloud-architect

Segment 2

Load balancer decision tree: https://cloud.google.com/load-balancing/docs/choosing-load-balancer

Network service tiers: https://cloud.google.com/network-tiers/docs/overview

Cloud SQL failover: https://cloud.google.com/sql/docs/mysql/high-availability#failover-overview

App Engine Supported Runtimes:
https://cloud.google.com/appengine/docs/standard/runtimes

Dedicated vs Partner Interconnect:

Dedicated Interconnect	**Partner Interconnect**
High bandwidth needs (10s of Gbps)	Bandwidth needs are in the 100s of Mbps or low Gbps
Can reach Google's network directly at a colocation facility	Not able to reach Google's network directly
Don't want traffic to pass through a service provider network	Don't want to setup and/or maintain routing equipment at colocation facility

Load Balancer types

Load balancer	Scope	Type	Protocol
Global External HTTP(S) Load Balancer	Global, external	Proxy	HTTP(S)
SSL Proxy Load Balancer	Global, external	Proxy	Non-HTTP(S) SSL
TCP Proxy Load Balancer	Global, external	Proxy	TCP (Layer 4)
External TCP/UDP Network Load Balancer	Regional, external	Pass-through	TCP, UDP
Internal TCP/UDP Load Balancer	Regional, internal	Pass-through	TCP, UDP
Internal HTTP(S) Load Balancer	Regional, internal	Proxy	HTTP(S)

Storage capacities and unit sizes

Cloud Firestore	Cloud SQL	Cloud Storage	Bigtable	Cloud Spanner	BigQuery
Terabytes+	Terabytes	Petabytes+	Petabytes+	Petabytes	Petabytes+
1MB/entity	Depends on engine	5TB/object	~10MB/cell ~100MB/row	10,240MiB/row	10MB/row

Segment 3

Machine types: https://cloud.google.com/compute/docs/machine-types

GKE Autopilot and GKE Standard comparison: https://cloud.google.com/kubernetes-engine/docs/concepts/autopilot-overview

Kubernetes components: https://kubernetes.io/docs/concepts/overview/components/

Machine series and use cases:

Series	Workload Type	Use cases
E2	General-purpose, cost-optimized	Web/app serving, back-office apps, small-medium databases, dev environments
N2, N2D, N1	General-purpose, balanced	Web/app serving, back-office apps, medium-large databases, cache, media/streaming
Tau T2D	General-purpose, Scale-out optimized	Web serving, containerized microservices, media transcoding, large-scale Java apps
M2, M1	Memory-optimized	SAP HANA, in-memory databases, SQL Server
C2, C2D	Compute-optimized	High-performance computing (HPC), gaming, ad serving, AI/ML, media transcoding
A2	Accelerator-optimized	CUDA-enabled ML training and inference, HPC, massive parallelized computation

Choosing how to expose apps (Kubernetes):

Component	Type	Scenarios
Service	ClusterIP	Internal (intra-cluster) access only
Service	NodePort	Need to access the service from outside the cluster. For small number of nodes, no load-balancing needed
Service	LoadBalancer	Need to access the service from outside the cluster and to balance the load
Service	ExternalName	Need an internal DNS alias for an external (public) DNS name

Ingress	Internal	Access only on private IP address. Need a proxy load balancer and HTTP(S) routing capabilities
Ingress	External	Publicly accessible. Need a proxy load balancer and HTTP(S) routing capabilities

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Segment 4

Organization policy constraints: https://cloud.google.com/resource-manager/docs/organization-policy/org-policy-constraints

Compliance resource center: https://cloud.google.com/security/compliance

Types of profiling: https://cloud.google.com/profiler/docs/about-profiler#types_of_profiling_available