Opsvane.

CLOUD COST AUDIT

Google Cloud Cost Audit Technical Findings Pack

Every finding, the resources behind it and the recommended change. Written for the engineers who will implement the plan.

PREPARED FOR
Contoso Ltd

ASSESSMENT WINDOW
3 Jun 2025 to 2 Jun 2026

ISSUED
5 June 2026

Confidential. Prepared for the named recipient only.

Illustrative sample. Names and figures are fictional.

OVERVIEW

Technical findings

This pack supports the executive report. It lists every check we ran, the resources affected and the change we recommend, so your engineers can plan and implement the work without repeating the analysis.

YEARLY SPEND
€110,880/yr
€9,240 per month
Monthly average over 12 months

SPEND REVIEWED
€28,800/yr
€2,400 per month
26% of total flagged by at least one check

SAVINGS IDENTIFIED
€21,432/yr
€1,786 per month
19.3% of total

FINDINGS
~310
Across 24 checks

Summary by category

	CATEGORY	FINDINGS	COST IN SCOPE	EST. SAVING / MONTH
W	**Immediate waste**	17	€185	€185
O	**Optimisation**	58	€1,195	€537
P	**Pricing**	20	€2,130	€549 to validate
D	**Data and storage**	67	€2,199	€306
N	**Network and architecture**	11	€0	€0
G	**Governance and visibility**	~91	€0	€0
B	**Behavioural patterns**	57	€1,535	€209 after deduplication
Total across categories		**~321**	**€7,244**	**€1,786**
Unique total, each resource counted once			€2,400	€1,786

A resource can appear in more than one category, for example a VM that is both oversized and a Spot candidate. The category total counts it every time. The unique total counts each resource once, under its highest impact action, and matches the executive report.

How to use this pack

Each finding has an ID, such as **W-01**, that you can use in tickets and change requests. Findings are grouped by category and include why it matters, the recommended action and the affected resources. Where a table shows only part of the list, the full list is provided as a spreadsheet alongside this pack.

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All findings

ID	FINDING	RESOURCES	EFFORT	RISK	CONFIDENCE	SAVING / MONTH
Immediate waste						
W-01	Unattached persistent disks	8	Low	Low	High	€95
W-02	Unused static external IPs	4	Low	Low	High	€28
W-03	Forwarding rules with no backend	3	Low	Low	Medium	€18
W-04	VPN tunnels with no traffic	2	Low	Low	High	€44
Optimisation						
O-01	Oversized Compute Engine instances	5	Medium	Medium	High	€312
O-02	Idle Compute Engine instances	7	Medium	Low	Medium	€225
O-03	Standard class buckets with infrequent access	42	Medium	Low	Medium	Counted in D-01
O-04	Idle Cloud SQL instances	4	Medium	Low	Medium	No direct saving
Pricing						
P-01	Spot VM candidates	12	Medium	Medium	To validate	€549 overlaps other findings
P-02	Committed use discount candidates	8	High	Low	To validate	€252
Data and storage						
D-01	Buckets without lifecycle rules	42	Low	Low	High	€261
D-02	Disk snapshots older than 90 days	12	Low	Low	High	€45
D-03	Old container images	5	Low	Low	High	No direct saving
D-04	BigQuery datasets without partition expiry	8	Low	Low	High	No direct saving
Network and architecture						
N-01	Resources outside the main regions	8	Medium	Low	Medium	No direct saving
N-02	Idle VPC peerings	3	Medium	Low	Medium	No direct saving

ID	FINDING	RESOURCES	EFFORT	RISK	CONFIDENCE	SAVING / MONTH
Governance and visibility						
G-01	Label coverage by resource type	12	Medium	Low	High	No direct saving
G-02	Resources missing required labels	32	Medium	Low	High	No direct saving
G-03	Firewall rules with no hits	8	Low	Low	Medium	No direct saving
G-04	Services without budget alerts	7	Low	Low	High	No direct saving
G-05	Unused service accounts	24	Medium	Low	High	No direct saving
G-06	Service accounts with broad IAM roles	8	Medium	Medium	High	No direct saving
Behavioural patterns						
B-01	Stopped instances still paying for disks	45	Low	Low	High	€85
B-02	Development VMs without a schedule	12	Medium	Low	High	€870 overlaps other findings

FINDINGS · W

Immediate waste

Resources that no longer serve any purpose. These are the lowest risk and fastest savings in the audit.

W-01 Unattached persistent disks

RESOURCES	MONTHLY COST	EST. SAVING	EFFORT	RISK	CONFIDENCE
8	€95	€95	Low	Low	High

WHY IT MATTERS

Disks with no attached instance for 30+ days are billed for their full provisioned size.

RECOMMENDED ACTION

Snapshot each disk as a safeguard, then delete.

ZONE	DISK NAME	SIZE (GB)	DISK TYPE	CREATED	MONTHLY COST
europe-west1-b	disk-analytics-dev-03-data	200	pd-ssd	2025-08-14	€17
europe-west4-a	disk-dataapp-dev-01-data	500	pd-standard	2025-07-22	€19
europe-west1-c	disk-webportal-dev-03-data	100	pd-ssd	2025-09-30	€9
europe-west1-b	disk-payments-dev-02-boot	50	pd-balanced	2025-11-03	€4
europe-west4-b	disk-monitoring-dev-01-data	150	pd-balanced	2025-10-15	€14
europe-west1-b	disk-devtools-dev-02-boot	50	pd-standard	2025-12-01	€2
europe-west4-a	disk-reporting-dev-01-data	250	pd-ssd	2025-06-18	€21
europe-west1-c	disk-legacy-dev-01-data	100	pd-balanced	2025-05-10	€9

W-02 Unused static external IPs

RESOURCES	MONTHLY COST	EST. SAVING	EFFORT	RISK	CONFIDENCE
4	€28	€28	Low	Low	High

WHY IT MATTERS

Reserved external IPs that are not attached to a resource are billed hourly.

RECOMMENDED ACTION

Release them after confirming no DNS records or partner allow lists depend on them.

REGION	ADDRESS NAME	IP ADDRESS	CREATED	MONTHLY COST
europe-west1	ip-lb-payments-dev	34.90.12.45	2025-09-15	€7
europe-west1	ip-vpn-dataapp-dev	34.90.14.112	2025-07-28	€7
europe-west4	ip-bastion-dev-old	34.91.16.203	2025-11-04	€7
europe-west4	ip-api-legacy-dev	34.91.20.85	2025-06-12	€7

W-03 Forwarding rules with no backend

RESOURCES	MONTHLY COST	EST. SAVING	EFFORT	RISK	CONFIDENCE
3	€18	€18	Low	Low	Medium

WHY IT MATTERS

The backends behind these rules were deleted, but the rules still incur hourly charges.

RECOMMENDED ACTION

Delete the forwarding rules and any related target proxies.

REGION	FORWARDING RULE	MONTHLY COST
europe-west1	fr-payments-v1-dev	€6
europe-west1	fr-analytics-api-dev	€6
europe-west4	fr-legacy-gateway-dev	€6

W-04 VPN tunnels with no traffic

RESOURCES	MONTHLY COST	EST. SAVING	EFFORT	RISK	CONFIDENCE
2	€44	€44	Low	Low	High

WHY IT MATTERS

Tunnels with zero traffic for 30 days are still billed per tunnel hour.

RECOMMENDED ACTION

Confirm with the network team that the links are retired, then delete the tunnels and gateways.

REGION	TUNNEL NAME	GATEWAY NAME	CREATED	MONTHLY COST
europe-west1	vpn-onprem-dev-01	gateway-onprem-dev	2025-08-05	€22
europe-west4	vpn-datacenter-dev-01	gateway-dc-dev	2025-10-22	€22

FINDINGS · O

Optimisation

Resources in active use that are larger or more expensive than the workload needs.

O-01 Oversized Compute Engine instances

RESOURCES	MONTHLY COST	EST. SAVING	EFFORT	RISK	CONFIDENCE
5	€515	€312	Medium	Medium	High

WHY IT MATTERS

Recommender identifies these instances as oversized based on observed CPU and memory.

RECOMMENDED ACTION

Apply the recommended machine type in a maintenance window. Changing machine type requires a restart.

ZONE	INSTANCE NAME	CURRENT MACHINE TYPE	RECOMMENDED MACHINE TYPE	AVG CPU	MONTHLY COST	EST. SAVING
europe-west1-b	vm-analytics-dev-01	n2-standard-8	n2-standard-4	4.2%	€112	€56
europe-west1-b	vm-payments-dev-01	n2-standard-4	n2-standard-2	6.1%	€56	€28
europe-west4-a	vm-dataapp-dev-01	n2-highmem-8	n2-standard-4	8.3%	€145	€89
europe-west4-a	vm-reporting-dev-02	n2-standard-4	e2-standard-2	5.7%	€56	€29
europe-west1-c	vm-webportal-dev-02	n1-standard-8	n2-standard-4	7.1%	€146	€110

O-02 Idle Compute Engine instances

RESOURCES	MONTHLY COST	EST. SAVING	EFFORT	RISK	CONFIDENCE
7	€225	€225	Medium	Low	Medium

WHY IT MATTERS

Instances below 5% CPU for a week or more are unlikely to be doing useful work.

RECOMMENDED ACTION

Confirm with owners, then stop or delete. Keep the idle VM recommender enabled to catch new cases.

ZONE	INSTANCE NAME	MACHINE TYPE	AVG CPU	AVG MEMORY	MONTHLY COST
europe-west1-b	vm-devtools-dev-03	n2-standard-4	1.2%	3.4%	€56
europe-west4-b	vm-monitoring-dev-02	n1-standard-2	2.1%	8.1%	€36
europe-west1-c	vm-legacy-api-dev-01	e2-standard-4	1.8%	4.2%	€44
europe-west4-a	vm-testenv-dev-01	n2-standard-2	0.9%	2.8%	€28
europe-west1-b	vm-staging-dev-02	e2-standard-2	1.4%	5.3%	€27
europe-west1-c	vm-backup-agent-dev	e2-medium	0.6%	11.2%	€12
europe-west4-b	vm-reporting-dev-03	n1-standard-2	2.3%	6.7%	€22

O-03 Standard class buckets with infrequent access

RESOURCES	MONTHLY COST	EST. SAVING	EFFORT	RISK	CONFIDENCE
42	€530	Counted in D-01	Medium	Low	Medium

WHY IT MATTERS

These buckets are rarely read but stored in the most expensive class.

RECOMMENDED ACTION

Addressed by the lifecycle rules in finding D-01. Savings are counted there.

Some resources here also appear in a higher saving finding. Savings are not additive across those findings.

LOCATION	BUCKET NAME	SIZE (GB)	LAST ACCESS (DAYS)	MONTHLY COST
europe-west1	bkt-contoso-backups-001	420	45	€8
europe-west1	bkt-contoso-logs-001	780	62	€14
europe-west4	bkt-contoso-data-exports-001	1,200	38	€22
europe-west1	bkt-contoso-ml-datasets-001	650	91	€12
europe-west1	bkt-contoso-archives-dev	1,850	120	€33
europe-west4	bkt-contoso-reports-dev-001	310	55	€6
europe-west1	bkt-contoso-artifacts-dev	440	28	€8
europe-west4	bkt-contoso-temp-data-dev	280	73	€5

Showing 8 of 42 resources. The full list is in the accompanying spreadsheet.

O-04 Idle Cloud SQL instances

RESOURCES	MONTHLY COST	EST. SAVING	EFFORT	RISK	CONFIDENCE
4	€205	No direct saving	Medium	Low	Medium

WHY IT MATTERS

Cloud SQL bills for provisioned capacity whether or not the database is used.

RECOMMENDED ACTION

Stop instances that are not in use, or move them to a smaller tier. Consider consolidating development databases.

REGION	INSTANCE NAME	DATABASE VERSION	TIER	AVG CPU	STORAGE (GB)	MONTHLY COST
europe-west1	sql-analytics-dev-01	POSTGRES_14	db-n1-standard-4	1.2%	100	€92
europe-west1	sql-payments-dev-01	MYSQL_8_0	db-n1-standard-2	2.8%	50	€52
europe-west4	sql-reporting-dev-01	POSTGRES_13	db-n1-standard-2	0.9%	30	€52
europe-west4	sql-legacy-dev-01	MYSQL_5_7	db-f1-micro	3.1%	20	€9

FINDINGS · P

Pricing

The same resources on a cheaper pricing model. Savings are large, but each item needs validation before acting.

P-01 Spot VM candidates

RESOURCES	MONTHLY COST	EST. SAVING	EFFORT	RISK	CONFIDENCE
12	€1,450	€549 overlaps other findings	Medium	Medium	To validate

WHY IT MATTERS

Development and test VMs run on standard pricing. Spot VMs are heavily discounted but can be preempted.

RECOMMENDED ACTION

Pilot Spot VMs on stateless development workloads, using managed instance groups to absorb preemption.

Some resources here also appear in a higher saving finding. Savings are not additive across those findings.

ZONE	INSTANCE NAME	MACHINE TYPE	LABELS	MONTHLY COST	EST. SAVING
europe-west1-b	vm-analytics-dev-02	n2-standard-8	env:dev, team:analytics	€200	€76
europe-west1-c	vm-analytics-dev-03	n2-standard-4	env:dev, team:analytics	€130	€49
europe-west1-b	vm-payments-dev-02	n2-standard-4	env:dev, team:payments	€130	€49
europe-west4-a	vm-payments-dev-03	n2-standard-2	env:dev, team:payments	€65	€25
europe-west4-a	vm-dataapp-dev-02	n2-standard-8	env:dev, team:data	€200	€76
europe-west4-b	vm-dataapp-dev-03	n2-standard-4	env:dev, team:data	€130	€49
europe-west1-b	vm-webportal-dev-01	n1-standard-4	env:dev, team:frontend	€105	€40
europe-west1-c	vm-webportal-dev-03	n2-standard-2	env:dev, team:frontend	€65	€25
europe-west4-a	vm-api-gateway-dev-01	n2-standard-4	env:dev, team:platform	€130	€49
europe-west4-b	vm-scheduler-dev-01	n1-standard-2	env:dev, team:platform	€53	€20
europe-west1-b	vm-worker-dev-01	n2-standard-4	env:dev, team:processing	€130	€49
europe-west1-c	vm-worker-dev-02	e2-standard-4	env:dev, team:processing	€112	€42

P-02 Committed use discount candidates

RESOURCES	MONTHLY COST	EST. SAVING	EFFORT	RISK	CONFIDENCE
8	€680	€252	High	Low	To validate

WHY IT MATTERS

These instances have run steadily for months on on demand pricing.

RECOMMENDED ACTION

Buy one year commitments after right sizing, so the commitment matches the final footprint.

ZONE	INSTANCE NAME	MACHINE TYPE	MONTHS RUNNING	MONTHLY COST	RECOMMENDATION	EST. SAVING
europe-west1-b	vm-db-proxy-dev-01	n1-standard-2	5	€72	1-year CUD: ~37% discount	€27
europe-west1-c	vm-cache-dev-01	n1-standard-2	7	€72	1-year CUD: ~37% discount	€27
europe-west4-a	vm-queue-dev-01	e2-standard-2	4	€60	1-year CUD: ~37% discount	€22
europe-west4-b	vm-auth-dev-01	e2-standard-2	6	€60	1-year CUD: ~37% discount	€22
europe-west1-b	vm-notifications-dev-01	e2-medium	5	€35	1-year CUD: ~37% discount	€13
europe-west4-a	vm-integration-dev-01	n2-standard-2	8	€130	1-year CUD: ~37% discount	€48
europe-west1-c	vm-metrics-dev-01	n1-standard-4	4	€105	1-year CUD: ~37% discount	€39
europe-west4-b	vm-config-dev-01	n2-standard-2	3	€146	3-year CUD: ~55% discount	€54

FINDINGS · D

Data and storage

Storage tiers, retention and lifecycle rules. Data tends to grow quietly until someone looks.

D-01 Buckets without lifecycle rules

RESOURCES	MONTHLY COST	EST. SAVING	EFFORT	RISK	CONFIDENCE
42	€530	€261	Low	Low	High

WHY IT MATTERS

Without lifecycle rules, objects stay in Standard storage indefinitely.

RECOMMENDED ACTION

Add rules that move objects to Nearline after 30 days and Coldline after 90, and delete temporary data on expiry.

LOCATION	BUCKET NAME	SIZE (GB)	MONTHLY COST	EST. SAVING
europe-west1	bkt-contoso-backups-001	420	€8	€4
europe-west1	bkt-contoso-logs-001	780	€14	€7
europe-west4	bkt-contoso-data-exports-001	1,200	€22	€11
europe-west1	bkt-contoso-ml-datasets-001	650	€12	€6
europe-west1	bkt-contoso-archives-dev	1,850	€33	€16
europe-west4	bkt-contoso-reports-dev-001	310	€6	€3
europe-west1	bkt-contoso-artifacts-dev	440	€8	€4
europe-west4	bkt-contoso-temp-data-dev	280	€5	€2

Showing 8 of 42 resources. The full list is in the accompanying spreadsheet.

D-02 Disk snapshots older than 90 days

RESOURCES	MONTHLY COST	EST. SAVING	EFFORT	RISK	CONFIDENCE
12	€45	€45	Low	Low	High

WHY IT MATTERS

Old snapshots are often forgotten backups of disks that no longer exist.

RECOMMENDED ACTION

Delete snapshots outside your retention policy and use snapshot schedules with automatic retention.

REGION	SNAPSHOT NAME	SOURCE DISK	SIZE (GB)	CREATED	AGE (DAYS)	MONTHLY COST
europe-west1	snap-vm-analytics-dev-01-boot-20251201	disk-analytics-dev-01-boot	50	2025-12-01	183	€1

REGION	SNAPSHOT NAME	SOURCE DISK	SIZE (GB)	CREATED	AGE (DAYS)	MONTHLY COST
europe-west1	snap-vm-analytics-dev-01-data-20251115	disk-analytics-dev-01-data	200	2025-11-15	199	€5
europe-west4	snap-vm-dataapp-dev-01-data-20260110	disk-dataapp-dev-01-data	350	2026-01-10	143	€10
europe-west1	snap-vm-payments-dev-01-data-20251020	disk-payments-dev-01-data	100	2025-10-20	225	€3
europe-west1	snap-vm-webportal-dev-01-boot-20260214	disk-webportal-dev-01-boot	50	2026-02-14	108	€1
europe-west4	snap-vm-dataapp-dev-02-data-20250915	disk-dataapp-dev-02-data	300	2025-09-15	260	€8
europe-west4	snap-vm-reporting-dev-01-data-20260125	disk-reporting-dev-01-data	150	2026-01-25	128	€4
europe-west1	snap-vm-legacy-dev-01-data-20251128	disk-legacy-dev-01-data	100	2025-11-28	186	€3
europe-west1	snap-vm-devtools-dev-01-data-20250805	disk-devtools-dev-01-data	80	2025-08-05	301	€2
europe-west1	snap-vm-monitoring-dev-01-20251220	disk-monitoring-dev-01-data	120	2025-12-20	164	€3
europe-west1	snap-vm-webportal-dev-02-data-20260201	disk-webportal-dev-02-data	100	2026-02-01	121	€3
europe-west4	snap-vm-analytics-dev-03-data-20251001	disk-analytics-dev-03-data	80	2025-10-01	244	€2

D-03 Old container images

RESOURCES	MONTHLY COST	EST. SAVING	EFFORT	RISK	CONFIDENCE
5	€24	No direct saving	Low	Low	High

WHY IT MATTERS

Old images accumulate storage cost and make it harder to find what is actually deployed.

RECOMMENDED ACTION

Add Artifact Registry cleanup policies that keep the most recent versions only.

REGION	REPOSITORY NAME	IMAGE NAME	SIZE (GB)	CREATED	AGE (DAYS)	MONTHLY COST
europe-west1	analytics-docker	analytics-api:v1.2.3	45	2025-08-14	292	€4
europe-west1	payments-docker	payments-service:v0.9.1	28	2025-09-22	253	€3
europe-west4	dataapp-docker	data-pipeline:v2.1.0	62	2025-10-05	240	€6
europe-west1	devtools-docker	build-tools:v3.0.0	85	2025-07-01	336	€8
europe-west4	webportal-docker	frontend:v1.0.0-beta	34	2025-11-18	196	€3

D-04 BigQuery datasets without partition expiry

RESOURCES	MONTHLY COST	EST. SAVING	EFFORT	RISK	CONFIDENCE
8	€1,600	No direct saving	Low	Low	High

WHY IT MATTERS

Tables keep every historic partition. Long term pricing softens the cost, but storage grows without limit.

RECOMMENDED ACTION

Set partition expiry where history is not needed, starting with temporary and legacy export datasets.

LOCATION	DATASET NAME	TABLES	SIZE (GB)	OLDEST TABLE (DAYS)	MONTHLY COST
EU	ds_analytics_events	45	12,400	847	€222
EU	ds_payments_transactions	23	8,200	623	€147
EU	ds_ml_training_data	12	45,000	412	€810
EU	ds_reporting_metrics	67	3,800	738	€68
EU	ds_dataapp_pipeline	18	6,500	285	€117
EU	ds_monitoring_logs	92	2,100	521	€38
US	ds_legacy_exports	34	9,800	1120	€176
EU	ds_temp_analysis	8	1,200	94	€22

FINDINGS · N

Network and architecture

Placement and connectivity issues. Mostly indirect cost, such as data transfer and operational risk.

N-01 Resources outside the main regions

RESOURCES	MONTHLY COST	EST. SAVING	EFFORT	RISK	CONFIDENCE
8	None	No direct saving	Medium	Low	Medium

WHY IT MATTERS

Resources in US regions are used by EU workloads, which adds egress charges and latency.

RECOMMENDED ACTION

Move or replicate these resources into the EU regions where their consumers run, and check data residency requirements.

RESOURCE NAME	RESOURCE TYPE	REGION	NOTE
bkt-contoso-us-exports	Cloud Storage	us-central1	Egress costs when accessed from EU workloads (~EUR 0.08/GB)
bkt-contoso-ml-backup	Cloud Storage	us-east1	Egress costs when accessed from EU workloads (~EUR 0.09/GB)
sql-analytics-replica	Cloud SQL	us-east1	Cross-region replication latency and egress charges
repo-ci-tools	Artifact Registry	us-central1	Container pull egress from EU CI/CD pipelines
repo-shared-base	Artifact Registry	us-central1	Container pull egress from EU CI/CD pipelines
ds_legacy_exports	BigQuery	US (multi)	Cross-region query data transfer costs
topic-external-events	Pub/Sub	us-east1	Message delivery egress when consumed from europe-west1
svc-integration-api	Cloud Run	us-central1	API call latency and cross-region egress from EU consumers

N-02 Idle VPC peerings

RESOURCES	MONTHLY COST	EST. SAVING	EFFORT	RISK	CONFIDENCE
3	None	No direct saving	Medium	Low	Medium

WHY IT MATTERS

Peerings with no recent traffic widen the network surface without serving a purpose.

RECOMMENDED ACTION

Remove peerings that are no longer required, starting with the external partner peering.

PEERING NAME	PEER NETWORK	LAST TRAFFIC (DAYS)
peer-contoso-dev-to-shared	projects/contoso-shared-394820/global/networks/shared-vpc	45
peer-contoso-dev-to-legacy	projects/contoso-legacy-394819/global/networks/legacy-net	92
peer-contoso-dev-to-partner	projects/partner-ext-123456/global/networks/partner-vpc	127

FINDINGS · G

Governance and visibility

Tagging, budgets and access hygiene. No direct saving, but needed to keep costs under control after the audit.

G-01 Label coverage by resource type

RESOURCES	MONTHLY COST	EST. SAVING	EFFORT	RISK	CONFIDENCE
12	None	No direct saving	Medium	Low	High

WHY IT MATTERS

Partial label coverage prevents reliable cost allocation by team or environment.

RECOMMENDED ACTION

Agree a label standard (env, owner, team, cost-center) and enforce it in infrastructure as code and Organization Policy.

RESOURCE TYPE	RESOURCES	LABELLED	COVERAGE	MISSING LABELS
Compute Engine Instances	34	26	76%	owner, cost-center
Persistent Disks	78	58	74%	owner
Cloud Storage Buckets	42	34	81%	cost-center
Cloud SQL Instances	4	3	75%	env
Cloud VPN Tunnels	5	4	80%	team
Load Balancers	8	6	75%	env, team
VPC Networks	3	2	67%	env, owner
VPC Firewall Rules	24	16	67%	env, team
BigQuery Datasets	8	7	88%	cost-center
Artifact Registry Repos	5	4	80%	env
Pub/Sub Topics	6	5	83%	env, owner
Cloud Run Services	2	1	50%	env, team

G-02 Resources missing required labels

RESOURCES	MONTHLY COST	EST. SAVING	EFFORT	RISK	CONFIDENCE
32	None	No direct saving	Medium	Low	High

WHY IT MATTERS

These resources cannot be attributed to an owner or cost centre.

RECOMMENDED ACTION

Backfill the missing labels on the listed resources.

RESOURCE TYPE	RESOURCE NAME	ZONE	MISSING LABELS
Compute Engine	vm-analytics-dev-01	europe-west1-b	owner, cost-center
Compute Engine	vm-payments-dev-01	europe-west1-b	cost-center
Compute Engine	vm-devtools-dev-03	europe-west1-b	env, owner
Compute Engine	vm-legacy-api-dev-01	europe-west1-c	env, team, owner
Persistent Disk	disk-analytics-dev-03-data	europe-west1-b	env, owner
Persistent Disk	disk-dataapp-dev-01-data	europe-west4-a	owner
Persistent Disk	disk-monitoring-dev-01-data	europe-west4-b	owner
Cloud Storage	bkt-contoso-backups-001	europe-west1	cost-center
Cloud Storage	bkt-contoso-ml-datasets-001	europe-west1	cost-center, owner
Cloud SQL	sql-legacy-dev-01	europe-west4	env, team
Firewall Rule	allow-internal-dev	global	env, team
Firewall Rule	allow-ssh-dev	global	env, team
BigQuery	ds_temp_analysis	EU	cost-center, owner
Pub/Sub Topic	topic-external-events	us-east1	env, owner
Cloud Run	svc-integration-api	us-central1	env, team

Showing 15 of 32 resources. The full list is in the accompanying spreadsheet.

G-03 Firewall rules with no hits

RESOURCES	MONTHLY COST	EST. SAVING	EFFORT	RISK	CONFIDENCE
8	None	No direct saving	Low	Low	Medium

WHY IT MATTERS

Unused rules, including broad legacy rules, increase exposure and make reviews harder.

RECOMMENDED ACTION

Confirm with Firewall Insights, then delete.

NETWORK	RULE NAME	DIRECTION	PRIORITY	TARGET TAGS
default	allow-all-internal-old	INGRESS	1000	(none)
default	allow-rdp-legacy	INGRESS	1010	(none)
contoso-dev-vpc	allow-debug-ports	INGRESS	900	dev-instances
contoso-dev-vpc	allow-analytics-test	INGRESS	950	analytics-vm
contoso-dev-vpc	deny-legacy-egress	EGRESS	1100	(none)
contoso-dev-vpc	allow-vpn-old	INGRESS	800	vpn-clients
default	allow-smtp-test	INGRESS	1050	(none)
contoso-dev-vpc	allow-partner-webhook	INGRESS	850	webhook-receivers

G-04 Services without budget alerts

RESOURCES	MONTHLY COST	EST. SAVING	EFFORT	RISK	CONFIDENCE
7	None	No direct saving	Low	Low	High

WHY IT MATTERS

Without budget alerts, unexpected spend goes unnoticed until the invoice arrives.

RECOMMENDED ACTION

Create budgets with alert thresholds at 50%, 90% and 100% of expected spend.

SERVICE	MONTHLY SPEND	RECOMMENDATION
Compute Engine	€3,840	Set EUR 3,500 budget with 50%, 90%, 100% threshold alerts
BigQuery	€1,600	Set EUR 1,400 budget; enable on-demand spend cap for dev
Cloud Storage	€1,200	Set EUR 1,000 budget with anomaly detection enabled
Cloud SQL	€205	Set EUR 200 budget alert: SQL often grows unnoticed
Networking/Egress	€385	Set EUR 300 budget; cross-region egress is a hidden cost
Artifact Registry	€24	Include in umbrella project budget alert
Cloud Run	€44	Include in umbrella project budget alert

G-05 Unused service accounts

RESOURCES	MONTHLY COST	EST. SAVING	EFFORT	RISK	CONFIDENCE
24	None	No direct saving	Medium	Low	High

WHY IT MATTERS

Inactive service accounts that keep their roles are an avoidable security risk.

RECOMMENDED ACTION

Disable them for 30 days, then delete if nothing breaks.

SERVICE ACCOUNT	LAST USED	AGE (DAYS)	ROLES
sa-analytics-pipeline@contoso-dev-394821.iam.gserviceaccount.com	2025-10-15	230	roles/bigquery.dataViewer
sa-payments-backup@contoso-dev-394821.iam.gserviceaccount.com	2025-08-22	284	roles/storage.objectCreator
sa-data-export-old@contoso-dev-394821.iam.gserviceaccount.com	2025-07-10	327	roles/bigquery.dataEditor
sa-monitoring-legacy@contoso-dev-394821.iam.gserviceaccount.com	2025-09-01	274	roles/monitoring.viewer
sa-deploy-v1@contoso-dev-394821.iam.gserviceaccount.com	2025-06-15	352	roles/clouddeploy.releaser
sa-test-automation@contoso-dev-394821.iam.gserviceaccount.com	2025-11-20	194	roles/compute.viewer
sa-reporting-export@contoso-dev-394821.iam.gserviceaccount.com	2026-01-05	148	roles/bigquery.dataViewer
sa-legacy-ci@contoso-dev-394821.iam.gserviceaccount.com	2025-05-20	378	roles/container.developer
sa-partner-integration@contoso-dev-394821.iam.gserviceaccount.com	2025-10-30	215	roles/pubsub.subscriber
sa-scheduler-v1@contoso-dev-394821.iam.gserviceaccount.com	2025-12-01	183	roles/cloudscheduler.admin

Showing 10 of 24 resources. The full list is in the accompanying spreadsheet.

G-06 Service accounts with broad IAM roles

RESOURCES	MONTHLY COST	EST. SAVING	EFFORT	RISK	CONFIDENCE
8	None	No direct saving	Medium	Medium	High

WHY IT MATTERS

Broad roles give these accounts far more access than their workloads need.

RECOMMENDED ACTION

Replace them with predefined least privilege roles, guided by the IAM role recommender.

SERVICE ACCOUNT	ROLE	RECOMMENDATION
sa-analytics-pipeline@contoso-dev-394821.iam.gserviceaccount.com	roles/editor	Replace with roles/bigquery.dataViewer + roles/storage.objectViewer
sa-deploy-prod@contoso-dev-394821.iam.gserviceaccount.com	roles/owner	Remove: no SA requires Owner; use Workload Identity Federation
sa-data-migration@contoso-dev-394821.iam.gserviceaccount.com	roles/editor	Replace with task-specific data access roles scoped to datasets
sa-ci-pipeline@contoso-dev-394821.iam.gserviceaccount.com	roles/editor	Replace with roles/container.developer + roles/storage.admin (bucket)
sa-monitoring-v2@contoso-dev-394821.iam.gserviceaccount.com	roles/viewer	Replace with roles/monitoring.viewer scoped to specific resources
sa-scheduler-v2@contoso-dev-394821.iam.gserviceaccount.com	roles/editor	Use Workload Identity Federation for CI/CD (avoid long-lived keys)
sa-backup-service@contoso-dev-394821.iam.gserviceaccount.com	roles/editor	Replace with roles/storage.objectAdmin scoped to backup bucket only
sa-external-api@contoso-dev-394821.iam.gserviceaccount.com	roles/viewer	Use fine-grained per-resource IAM bindings instead of project-level

FINDINGS · B

Behavioural patterns

Patterns in how teams run resources, such as leaving development machines on overnight.

B-01 Stopped instances still paying for disks

RESOURCES	MONTHLY COST	EST. SAVING	EFFORT	RISK	CONFIDENCE
45	€85	€85	Low	Low	High

WHY IT MATTERS

Stopped instances do not bill for compute, but their disks keep billing.

RECOMMENDED ACTION

Delete instances and disks that are no longer needed. Snapshot first if the data may be needed.

ZONE	INSTANCE NAME	MACHINE TYPE	DISKS	MONTHLY COST
europe-west1-b	vm-build-dev-01	n2-standard-4	2	€4
europe-west1-b	vm-staging-dev-01	n2-standard-8	3	€9
europe-west4-a	vm-test-old-dev-01	e2-standard-4	2	€5
europe-west1-c	vm-analytics-old-dev-01	n2-standard-4	2	€4
europe-west4-b	vm-payments-old-dev-01	n1-standard-2	2	€3
europe-west1-b	vm-dataapp-old-dev-01	n2-highmem-4	3	€8
europe-west1-c	vm-webportal-old-dev-01	e2-standard-2	1	€2
europe-west4-a	vm-legacy-batch-dev-01	n1-standard-4	3	€7

Showing 8 of 45 resources. The full list is in the accompanying spreadsheet.

B-02 Development VMs without a schedule

RESOURCES	MONTHLY COST	EST. SAVING	EFFORT	RISK	CONFIDENCE
12	€1,450	€870 overlaps other findings	Medium	Low	High

WHY IT MATTERS

These VMs run around the clock although they are used during working hours.

RECOMMENDED ACTION

Attach instance schedules that stop them outside working hours.

Some resources here also appear in a higher saving finding. Savings are not additive across those findings.

ZONE	INSTANCE NAME	MACHINE TYPE	LABELS	MONTHLY COST	EST. SAVING
europe-west1-b	vm-analytics-dev-02	n2-standard-8	env:dev, team:analytics	€200	€120

ZONE	INSTANCE NAME	MACHINE TYPE	LABELS	MONTHLY COST	EST. SAVING
europe-west1-c	vm-analytics-dev-03	n2-standard-4	env:dev, team:analytics	€130	€78
europe-west1-b	vm-payments-dev-02	n2-standard-4	env:dev, team:payments	€130	€78
europe-west4-a	vm-payments-dev-03	n2-standard-2	env:dev, team:payments	€65	€39
europe-west4-a	vm-dataapp-dev-02	n2-standard-8	env:dev, team:data	€200	€120
europe-west4-b	vm-dataapp-dev-03	n2-standard-4	env:dev, team:data	€130	€78
europe-west1-b	vm-webportal-dev-01	n1-standard-4	env:dev, team:frontend	€105	€63
europe-west1-c	vm-webportal-dev-03	n2-standard-2	env:dev, team:frontend	€65	€39
europe-west4-a	vm-api-gateway-dev-01	n2-standard-4	env:dev, team:platform	€130	€78
europe-west4-b	vm-scheduler-dev-01	n1-standard-2	env:dev, team:platform	€53	€32
europe-west1-b	vm-worker-dev-01	n2-standard-4	env:dev, team:processing	€130	€78
europe-west1-c	vm-worker-dev-02	e2-standard-4	env:dev, team:processing	€112	€67

APPENDIX

Method, scope and assumptions

Scope	One Google Cloud project (Contoso Dev EU) in europe-west1 and europe-west4. Billing data for 3 June 2025 to 2 June 2026.
Access	Read only. No changes were made to the environment during the assessment.
Data sources	Cloud Asset Inventory for resources, Cloud Billing for cost, Recommender for right sizing, and Cloud Monitoring for CPU utilisation (12 month trend and P99).
Savings estimates	Each finding applies an action specific savings rate to the resource's average monthly cost over the 12 month window. Provider recommendations are capped at the resource's actual cost.
Effort	Engineering time and coordination needed to make the change.
Risk	The chance of service impact if the change is made without further checks.
Confidence	How strongly utilisation and billing data support the finding. Findings marked to validate rely on assumptions, such as classifying workloads as development by naming and labels.
Currency	All amounts in EUR, excluding VAT.

Questions about a finding?

We are happy to walk your engineers through any item in this pack.

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This is an illustrative sample report. Contoso Ltd is a fictional organisation, and all names, figures and findings are representative only.