



FREE RESOURCE — TCO CALCULATOR

Cloud vs On-Premise Cost Comparison

Compare the true total cost of ownership of running infrastructure on-premise versus in the public cloud over a 3-to-5-year horizon. Capture every hardware, software, energy, staff, networking and project cost line; tick the hidden costs both sides routinely miss; and roll the figures into a year-by-year NPV summary you can defend in front of finance.

12

COST
CATEGORIES

5yr

TCO
HORIZON

NPV

DISCOUNTED
CASH FLOW

Fillable

TYPE FIGURES
IN ANY VIEWER

ON-PREMISE

PUBLIC CLOUD

TCO

5-YEAR HORIZON

PREPARED FOR

Cloudswitched Knowledge
Library

PREPARED BY

Cloudswitched Ltd.

VERSION

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FORMAT

Interactive PDF

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How to use this calculator

Total Cost of Ownership (TCO) is the only honest way to compare on-premise infrastructure with public cloud. A one-year line-item compare hides the lumpy cost of a server refresh, the after-hours engineer call-out, the egress bill that arrives in month 14, and the FTE day every week spent patching kit. Run the comparison over a **three to five year horizon**; that is the natural depreciation cycle of physical infrastructure and the typical payback window of a cloud migration.

Work through the four cost tables in order. Start with current invoices, supplier quotes and the last twelve months of accounts data. For the cloud side use the Azure or AWS pricing calculator output for a like-for-like environment; assume a sensible reserved-instance discount where the workload is steady. Tick the **hidden cost** checklist honestly — this is where most comparisons get the answer wrong. Then carry the subtotals into the 5-year horizon table and the NPV summary; the decision page on the final spread is the conversation you take to your board.

WHAT THIS CALCULATOR COVERS

The complete cost stack on both sides. **On-premise:** hardware capex, perpetual licences, electricity, cooling, floor space, internet, hardware maintenance, IT staff time, refresh provision and DR. **Cloud:** consumption-based compute, storage, database, egress, backup, networking, identity, monitoring, plus migration, BYOL and FinOps overhead. Every figure cell is fillable in any modern PDF viewer — type directly into the box.

COMPARING LIKE FOR LIKE

Most cloud-vs-on-prem comparisons quietly compare a **three-year-old depreciated server** against a **brand-new cloud environment**. To avoid that trap, cost the on-premise side as if it were being bought today (Year 0 capex full, not residual) and apply realistic refresh provisions. Equally, cost the cloud side at **steady-state run rate**, not the inflated Year 1 migration spend — otherwise cloud will always look more expensive.

The four cost tables & two summary pages

- **Section A — On-Premise TCO.** Upfront Year 0 capital expenditure plus annual operating cost (hardware maintenance, electricity, IT staff time, refresh provision).
- **Section B — Cloud TCO.** Monthly consumption-based cloud spend plus cloud-related project and people cost (migration, BYOL, FinOps, training).
- **Section C — Hidden Costs Checklist.** The cost lines neither side's default spreadsheet captures — tick the ones that apply.
- **Section D — 5-Year Horizon & NPV.** Year-by-year cash flow for each option, totalled and discounted at 7% to give a comparable net present value.
- **Section E — Decision Summary.** A scorecard plus headline recommendation and board sign-off.

A1

On-Premise TCO — CapEx

Capture the upfront cost of standing up your own infrastructure: hardware, perpetual licences, the install project, the server room itself. Year 0 capex is a single big cheque; if you refresh on a 5-year cycle, the amortised annual equivalent is this subtotal divided by 5.

01 Year 0 capital expenditure (CapEx)

Hardware, perpetual licences and the installation project. One-off spend — if you refresh on a 5-year cycle, divide the subtotal by 5 to get an amortised annual equivalent.

LINE ITEM	QTY	UNIT COST	YEAR 0 TOTAL	NOTES
Server hardware	_____	£ _____	£ _____	_____
Storage (SAN / NAS)	_____	£ _____	£ _____	_____
Network kit (switches, firewall, router)	_____	£ _____	£ _____	_____
UPS & rack PDU	_____	£ _____	£ _____	_____
Backup hardware (appliance / tape)	_____	£ _____	£ _____	_____
Server room fit-out (rack, AC, cabling)	—	£ _____	£ _____	_____
Perpetual software licences (OS, hypervisor, DB)	_____	£ _____	£ _____	_____
Installation & migration project	—	£ _____	£ _____	_____
SUBTOTAL — YEAR 0 CAPEX			£ _____	

CAPEX BENCHMARK

A typical UK SME server-room refresh for ~30–50 users lands in the **£25,000–£80,000** range depending on storage capacity, network redundancy and DR scope. Add another **£10,000–£25,000** for the installation and migration project. Carry the subtotal forward to the Year 0 column of the 5-year horizon table on page 7.

A2

On-Premise TCO — OpEx

The recurring cost of keeping the kit alive — maintenance contracts, power, cooling, IT staff time, DR site and insurance. This is the steady tax that the upfront capex hides; over a 5-year horizon it usually exceeds the original capex line by a factor of two or three.

02 Annual operating expenditure (OpEx)

Apply a realistic year-on-year inflator (typically 3–5% for power, 5–8% for staff time, 0% for fixed leases) and roll the 5-year column.

LINE ITEM	ANNUAL COST	INFLATOR %	5-YR TOTAL	NOTES
Hardware maintenance contracts	£ _____	_____%	£ _____	_____
Software maintenance / SA	£ _____	_____%	£ _____	_____
Electricity & cooling	£ _____	_____%	£ _____	_____
Floor space allocation	£ _____	_____%	£ _____	_____
IT staff time <i>(patching, monitoring, fixes)</i>	£ _____	_____%	£ _____	_____
Disaster recovery site	£ _____	_____%	£ _____	_____
Hardware insurance	£ _____	_____%	£ _____	_____
SUBTOTAL — ANNUAL OPEX	£ _____		£ _____	

THE LINE MOST UNDERCOSTED — IT STAFF TIME

For a 50-person SME running its own infrastructure, expect **20–40% of one IT engineer's FTE** to be consumed by infrastructure operations — patching, monitoring, backup verification, capacity planning, ticket triage on hardware issues. At a fully-loaded cost of £55,000–£75,000 per FTE, that is **£11,000–£30,000 per year** that often sits invisibly in payroll rather than the IT budget. Cost it explicitly here.

B1

Cloud TCO — Consumption

The monthly cloud bill is the operational core of the cloud TCO. Build it from a sized Azure or AWS pricing-calculator output for the steady-state workload — not the inflated Year 1 migration snapshot. Apply a sensible reserved-instance or savings-plan discount where the workload is predictable.

01 Monthly cloud consumption (Azure / AWS)

Take these figures from the Azure or AWS pricing calculator output, sized for steady-state load. Apply a reserved instance / savings plan discount where the workload is predictable — typically 30–55% off list for compute.

SERVICE LINE	MONTHLY	ANNUAL	5-YR TOTAL	NOTES
Compute (VMs, containers, AKS)	£ _____	£ _____	£ _____	_____
Database (Azure SQL / RDS / managed)	£ _____	£ _____	£ _____	_____
Storage (blob, disk, file)	£ _____	£ _____	£ _____	_____
Backup & archive (immutable, geo-redundant)	£ _____	£ _____	£ _____	_____
Egress & data transfer	£ _____	£ _____	£ _____	_____
Networking (VPN, ExpressRoute, load balancer)	£ _____	£ _____	£ _____	_____
Identity (Entra ID P1 / P2)	£ _____	£ _____	£ _____	_____
Monitoring & log analytics	£ _____	£ _____	£ _____	_____
SUBTOTAL — CLOUD CONSUMPTION	£ _____	£ _____	£ _____	

PRICING-CALCULATOR INPUTS TO CAPTURE

For a defensible cloud bill, record **VM family, vCPU and RAM size, OS, region, reserved-instance term, and committed storage tier** for every workload in the sizing. Apply Azure Hybrid Benefit / AWS BYOL where you already own Windows and SQL Server licences — this routinely shaves 30–40% off the compute line. Take the steady-state monthly figure here, not the Year 1 dual-running figure (that lands on the next page).

B2

Cloud TCO — Project & People

The transition and run-the-cloud cost most calculators forget. Migration consultancy, the dual-running overhead during cutover, FinOps tooling, training, and the architect or vCIO time it takes to keep the bill honest month over month.

02 Cloud project & people cost

Year 0 captures one-off migration spend; the annual recurring column captures the FinOps and architect time you carry forward indefinitely.

LINE ITEM	YEAR 0 / ONE-OFF	ANNUAL RECURRING	NOTES
Migration project <i>(consultancy + landing zone)</i>	£ _____	—	_____
Bring-your-own licensing <i>(Windows Server, SQL)</i>	£ _____	£ _____	_____
Cloud architect / vCIO time	£ _____	£ _____	_____
FinOps / cost-management tooling	—	£ _____	_____
Training & upskilling	£ _____	£ _____	_____
Year 1 dual-running overhead	£ _____	—	_____
SUBTOTAL — PROJECT & PEOPLE	£ _____	£ _____	

DUAL-RUNNING OVERHEAD

During cutover you pay for both environments at once — the on-premise kit you haven't yet decommissioned and the new cloud landing zone you are validating. Budget **3–6 months of dual-running** for a typical SME migration. Some calculators omit this; it is often the single largest Year 0 cost surprise. Land it explicitly so the board sees it.

C

Hidden costs both sides forget

These are the cost lines that don't sit in any finance system — the emergency call-out, the egress surprise, the idle VM that's been running since 2022. Tick honestly. Every box ticked on the on-premise side adds load to that subtotal; every box ticked on the cloud side is a FinOps action item before you migrate.

HOW TO USE THIS CHECKLIST

Tick a box if the cost line applies to your environment. The point is not to win — it is to make sure both columns are fairly costed. A clean on-premise comparison usually has 3–5 hidden costs ticked; a clean cloud comparison usually has 4–6. The presence of hidden costs on a side is not a vote against it — it is information about run-rate risk.

01 On-Premise hidden costs

- ☐ **Emergency hardware replacement** when a disk, PSU or server fails outside the maintenance window.
- ☐ **After-hours engineer call-out** for incidents your in-house team can't cover.
- ☐ **Datacentre / server room move** if the business relocates or expands during the horizon.
- ☐ **Rising power tariff** — 24/7 server load is exposed to wholesale electricity inflation.
- ☐ **Software licence audit** — Microsoft, Oracle or VMware true-up bills hitting mid-contract.
- ☐ **End-of-life upgrade project** when an OS or hypervisor leaves support.
- ☐ **Business interruption** during the refresh cutover — lost productivity, parallel running.
- ☐ **Capacity over-provisioning** — you sized for peak in Year 1 and now run at 35% utilisation.
- ☐ **Technical debt** on the operating system, drivers and firmware over a 5-year cycle.
- ☐ **Compliance certification** tied to the physical environment (*ISO 27001 facility scope, PCI*).

02 Cloud hidden costs

- ☐ **Egress / data transfer surprise** bill when a workload starts pulling data out cross-region.
- ☐ **Idle VM sprawl** — dev / test machines left running 24/7 because nobody owns shutdown.
- ☐ **Premium SKU drift** — storage tiers, DTU sizes and VM families upsized in an emergency, never resized back down.
- ☐ **Snapshot & backup accumulation** — orphaned snapshots and old backup chains never retired.
- ☐ **Portal-driven drift** from infrastructure-as-code — manual changes that defy cost guardrails.
- ☐ **BYOL audit risk** — bring-your-own Windows / SQL licences not properly assigned in Azure Hybrid Benefit.
- ☐ **FX / currency exposure** on USD-denominated cloud invoices for a GBP business.
- ☐ **Support plan upsell** — the free / dev support tier doesn't cover production incidents.
- ☐ **Reserved instance lock-in** — 1- or 3-year commitments locked in at a now-obsolete VM family.
- ☐ **FinOps maturity gap** — no monthly cost-tagging discipline, so nobody owns the bill until it's already big.

D

5-Year horizon & NPV summary

Carry the subtotals from Sections A and B into the year-by-year cash flow below. On-premise Year 0 is the capex spend; Years 1–4 are the annual operating cost with inflation. Cloud Year 0 is the migration project plus first-year consumption; Years 1–4 are the steady-state run rate. NPV uses a **7% discount rate** — the typical UK SME cost of capital for IT investment.

SCENARIO	YEAR 0	YEAR 1	YEAR 2	YEAR 3	YEAR 4	5-YR TOTAL	NPV @ 7%
On-Premise cash flow	£ _____	£ _____	£ _____	£ _____	£ _____	£ _____	£ _____
Cloud cash flow	£ _____	£ _____	£ _____	£ _____	£ _____	£ _____	£ _____
DIFFERENCE (ON- PREM – CLOUD)	£ _____	£ _____	£ _____	£ _____	£ _____	£ _____	£ _____

Headline summary

METRIC	ON-PREMISE	CLOUD	WINNER
5-year total cost of ownership	£ _____	£ _____	_____
NPV @ 7%	£ _____	£ _____	_____
Year 0 cash impact	£ _____	£ _____	_____
Break-even year (cloud cheaper from)	—	Year _____	_____
RECOMMENDATION _____			

A NOTE ON NPV

NPV converts a multi-year cash flow into today's money by discounting each future year against your cost of capital. For UK SMEs, 7% is a reasonable proxy — representing the blended cost of debt, opportunity cost of working capital, and a small risk premium. If your finance team uses a different rate (5–10% is the normal range), substitute it; the formula is $NPV = \sum (\text{cash flow}_n \div (1 + r)^n)$.

E

Decision summary

Cost is one input, not the whole decision. Score each non-cost criterion **1–5 for each option** (5 = strongly favours that option), then weight by importance to the business. Combined with the NPV figure from Section D, this is the framework you take to the board.

CRITERION	ON-PREM (1–5)	CLOUD (1–5)	WEIGHT (1–3)	NOTES
Capex appetite (<i>can you fund the upfront cheque?</i>)	-----	-----	-----	-----
Workload elasticity (<i>spiky vs steady</i>)	-----	-----	-----	-----
Data sovereignty / residency	-----	-----	-----	-----
In-house skills (<i>infra ops vs cloud</i>)	-----	-----	-----	-----
Disaster recovery posture	-----	-----	-----	-----
Speed of provisioning new capacity	-----	-----	-----	-----
Vendor lock-in tolerance	-----	-----	-----	-----
WEIGHTED TOTAL	-----	-----		

Decision & assumptions

PREPARED BY

DATE

APPROVED BY

Want a second opinion on your numbers?

Cloudswitched's vCIO service runs cloud-vs-on-premise TCO modelling for UK SMEs — Azure / AWS pricing-calculator builds, FinOps-grade assumptions, sensitivity analysis on the inputs that move the answer, and an independent NPV view your finance director will trust.

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