

VMS Deployment Model Decision Guide

On-premises, cloud (VSaaS), or hybrid — the four bills, the 40-camera math, and the order to decide in.

Factor	On-premises	Cloud (VSaaS)	Hybrid
Upfront cost	High — one-time CapEx: servers, storage, licenses	Low — little or no on-site hardware	Medium — local recording, lighter than full on-prem
Recurring cost	Low — power, maintenance, spares	High — per-camera monthly fee; grows with retention	Medium — cloud management + partial storage
Internet bandwidth	Minimal — video stays on the LAN	High — every camera uploads continuously	Low — only events + management cross the WAN
Resilience to outage	Recording unaffected; remote view lost	Recording may stop without a local buffer	Records locally, syncs to cloud on reconnect
Data residency	Fullest — you hold footage, one jurisdiction	Provider holds it; confirm region + transfer basis	Sensitive footage stays local; choose what goes up
Scale ceiling	Very high — limited by your own build	~100 cameras before bandwidth/cost bite	Very high — heavy video never leaves the site
Maintenance	You — patching, capacity, hardware	Provider — managed service	Shared — local gear yours, cloud theirs
Best fit	Large/regulated single sites; strict residency	Small sites, multi-site chains, no IT staff	Multi-site, mixed sensitivity, weak links

Worked example — 40 cameras, 4 MP at ~2 Mbps (H.265), 30-day retention

Storage: 2 Mbps x 10.8 = 21.6 GB/camera/day -> x 40 x 30 = ~26 TB. Upload: 2 Mbps x 40 = 80 Mbps sustained for pure cloud; ~0 on-prem; ~8 Mbps hybrid (events only). Cost: cloud at ~\$20/camera/month = ~\$9,600/year (~\$48,000 over five years); on-prem is a one-time spend then minimal running cost. The cloud subscription typically overtakes the one-time on-prem cost around year three at this scale.

Decide in this order

1. Residency - must footage stay on your hardware or in one jurisdiction? Yes -> on-prem, or hybrid with sensitive footage kept local.
2. Bandwidth - can the link carry every camera continuously with headroom? No -> on-prem or hybrid.
3. Scale & growth - many cameras, or growing? -> on-prem or hybrid; a few with no IT staff -> cloud.
4. Cost shape - capital budget -> on-prem; predictable monthly OpEx -> cloud or hybrid.
5. Sites - many locations -> hybrid or cloud for one console.

Engineering guidance, not legal advice. Cloud storage across borders engages GDPR Chapter V (an adequacy decision or Standard Contractual Clauses). Confirm specifics with qualified counsel.