

Exploring the cost benefits
associated with a cloud solution.



NUVEQ CLOUD-BASED ACCESS CONTROL SOLUTIONS

TOTAL COST OF OWNERSHIP

TCO OF CLOUD VS. ON-PREMISE SERVER SYSTEMS



IT and Security Managers prefer Cloud technology due to its security, reduced downtime, and cost-effectiveness compared to On Prem solutions. However, convincing upper management of these benefits can be challenging. Experts suggest using a TCO analysis to demonstrate the long-term payoff of investing in Software as a Service (SaaS).

On-premise systems can be costly due to design, purchase, and implementation expenses, as well as recurring costs for electricity and maintenance. Moving towards a SaaS Cloud Solution can lower the Total Cost of Ownership (TCO) over five years.



Five-year calculations are commonly used for IT equipment TCO calculators because IT servers typically have a long-term useful life. SaaS offers quick scaling with no increase in hardware or implementation costs, leading to cost savings when an on-prem system requires a hardware refresh.

Challenges with On-Premise Systems:

1. Upfront Costs:

- Server Hardware: RM 8,000–RM 20,000
- Includes high-performance servers (with redundancy features) required for door access systems.
- Software Licenses: RM 5,000–RM 10,000
- Includes server operating system (e.g., Windows Server or Linux) and door access management software.
- Implementation & Configuration: RM 3,000–RM 8,000
- Covers installation, network configuration, and initial setup of the access control system.
- Peripherals: RM 2,000–RM 5,000
- UPS (uninterruptible power supply), storage devices, and networking equipment.

Estimated Upfront Cost: RM 18,000–RM 43,000

2. Recurring Maintenance Costs (Over 5 Years):

- **Electricity Costs: RM 482.23/year/server**

For a server consuming ~250W running 24/7, over 5 years:

RM 482.23 \times 5 = RM 2,411

- **Maintenance Contracts: RM 3,000–RM 5,000/year**

Includes hardware servicing, software updates, and troubleshooting. Over 5 years: RM 3,000 \times 5 = RM 15,000 low-end to RM 25,000 high-end

- **Hardware Replacement: RM 5,000–RM 10,000**

Covers potential repairs or upgrades (e.g., failed drives or memory modules)

- **Software Upgrades: RM 3,000–RM 6,000**

Security patches and new features.

Estimated Recurring Cost: RM 25,000–RM 43,000

3. Total Cost Over 5 Years:

- **Upfront Costs: RM 18,000–RM 43,000**
- **Maintenance Costs: RM 25,000–RM 43,000**

Total (5 Years): RM 43,000–RM 86,000

A typical on- premise server costs RM482.23 a year, in electricity expenditure alone!

The cost of electricity to run and cool servers has increased by roughly 67% in the last 20 years. Even with more efficient servers, heat dissipation in an IT room with racks of servers is expensive, and IT planners now double the power consumption of a server to calculate the power needed for its cooling.

Assumptions for a Typical On-Premise Server:

1. Average Power Consumption:

A standard server typically consumes around 200W to 400W (0.2–0.4 kW) under normal workloads. For simplicity, let's assume 300W (0.3 kW) as an average.

2. Operating Hours:

Servers usually run 24/7, making it 365 days/year or 8,760 hours/year.

3. Electricity Tariff in Malaysia:

Using the first-tier TNB tariff of RM 0.218/kWh, applicable for most residential or small business setups.

Calculate Annual Electricity Cost:

1. Energy Usage (kWh):

$$0.3 \text{ {kW}} \times 8,760 \text{ {hours}} = 2,628 \text{ {kWh/year}}$$

2. Electricity Cost:

$$2,628 \text{ {kWh/year}} \times \text{RM } 0.218 \text{ {kWh}} = \text{RM } 572.90$$

3. Cost Adjustment for RM 482.23:

If the electricity cost is RM 482.23/year, the server's average consumption would be:

$$\text{Average Power Consumption} = \frac{\text{RM}482.23}{8,760 \text{ hours} \times \text{RM}0.218/\text{kWh}} \approx 253 \text{ W (0.253 kW)}$$

Maintenance Cost Structure

1. Maintenance Contracts: Key Inclusions

- Software Updates:
 - Regular updates to the door access management software.
 - Security patches to address vulnerabilities.
 - Feature enhancements or compatibility updates for evolving hardware.
- Hardware Servicing:
 - Periodic inspection and cleaning of hardware components like servers, readers, and controllers.
 - Replacement of worn-out or damaged parts (may include additional costs for non-warranty items).
- On-Site Troubleshooting:
 - Diagnosis and resolution of system malfunctions (e.g., faulty controllers or server issues).
 - Emergency support for access control failures.
 - Training staff on basic troubleshooting.

2. Factors Influencing Costs

- Number of Doors & Readers: More components increase service scope and costs.
- Geographic Coverage: On-site support in remote locations may involve travel fees.
- Response Time in SLA: Faster response times (e.g., 4-hour vs. next-day) cost more.

SaaS Cloud Solution Comparison:

With a SaaS Cloud Access Control Solution:

- No upfront server costs or high maintenance fees.
- Subscription costs are predictable, typically RM 50.00–RM 1,000/year, depending on the number of users.

Estimated SaaS Cost Over 5 Years: RM 250.00–RM 5,000 (scalable, but with reduced operational complexity and better ROI).

Conclusion:

For businesses looking to reduce costs, complexity, and maintenance burdens, SaaS Cloud-based solutions like NUVEQ offer a compelling alternative to on-premise servers, particularly when Total Cost of Ownership (TCO) and scalability are critical considerations.

Reducing energy costs by migrating to cloud-based solutions could be a viable alternative, especially with eco-friendly options like NUVEQ's solutions.

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