06/08/2025

**CLOUD COMPUTING WITH AZURE**

**Topic: Scalable and Elastic Infrastructure**

**Traditional On-Premise Setup**

* Feb: Initially, 2 servers provisioned (On-Premise setup).
* Apr: Load Testing & Stress Testing revealed the need for 3 additional servers.
* **Scaling required multiple manual steps:**

**Manual Scaling Steps:**

1. Approvals from Stakeholders
   * Involved: Directors, COO, CTO
2. Ordering Process
   * Vendor located in Germany
3. Server Setup
   * Retrofitting by network engineers
   * 24/7 support required → 3 Teams + 1 Support Team
4. Rent for physical server room space
5. Power Supply for additional servers

**Problem:**

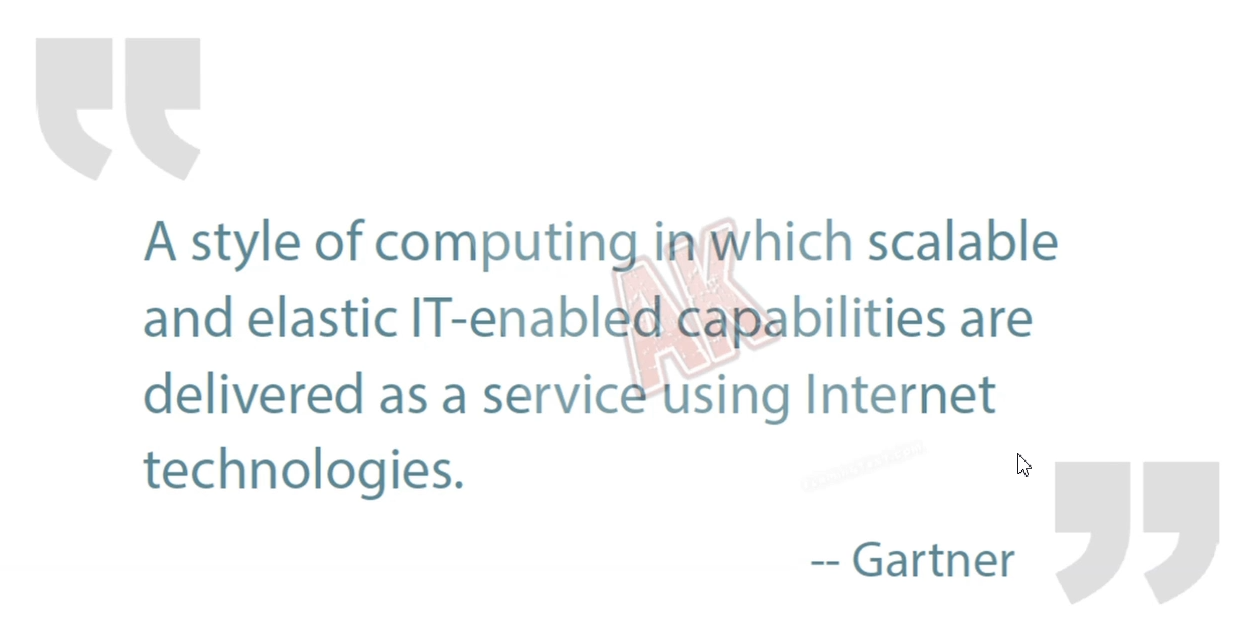
* Traffic reduced by August, leaving underutilized infrastructure and wasted resources.

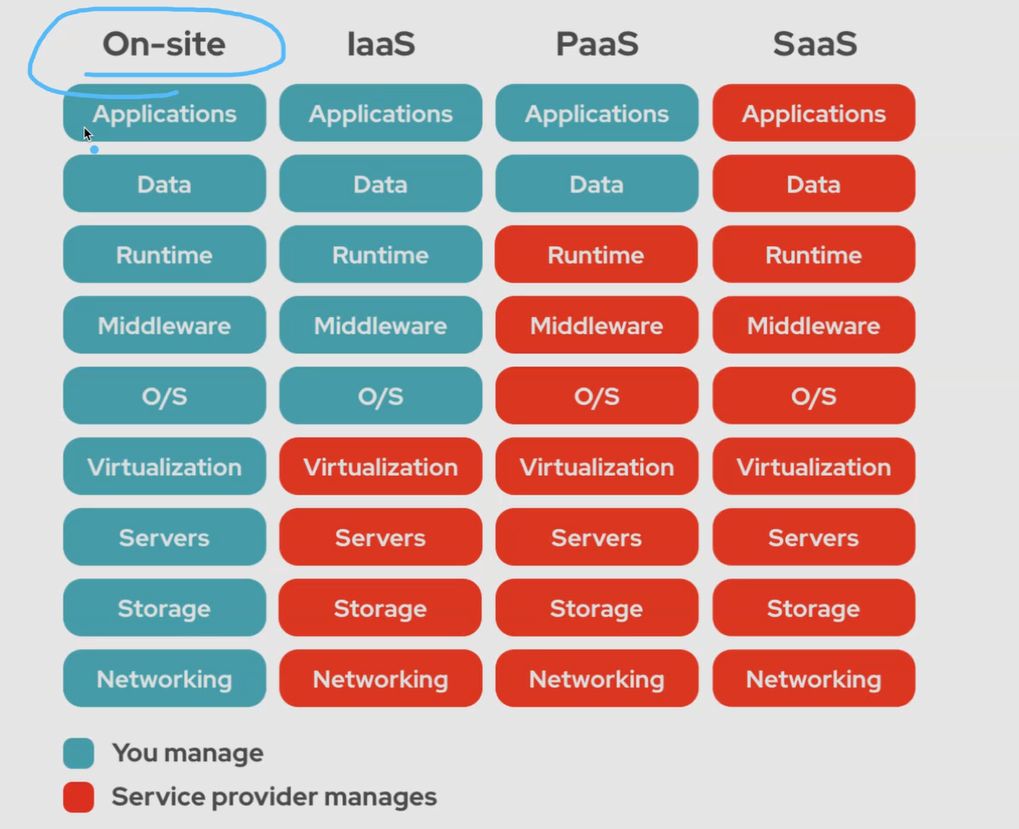
**AZURE CLOUD-BASED SETUP**

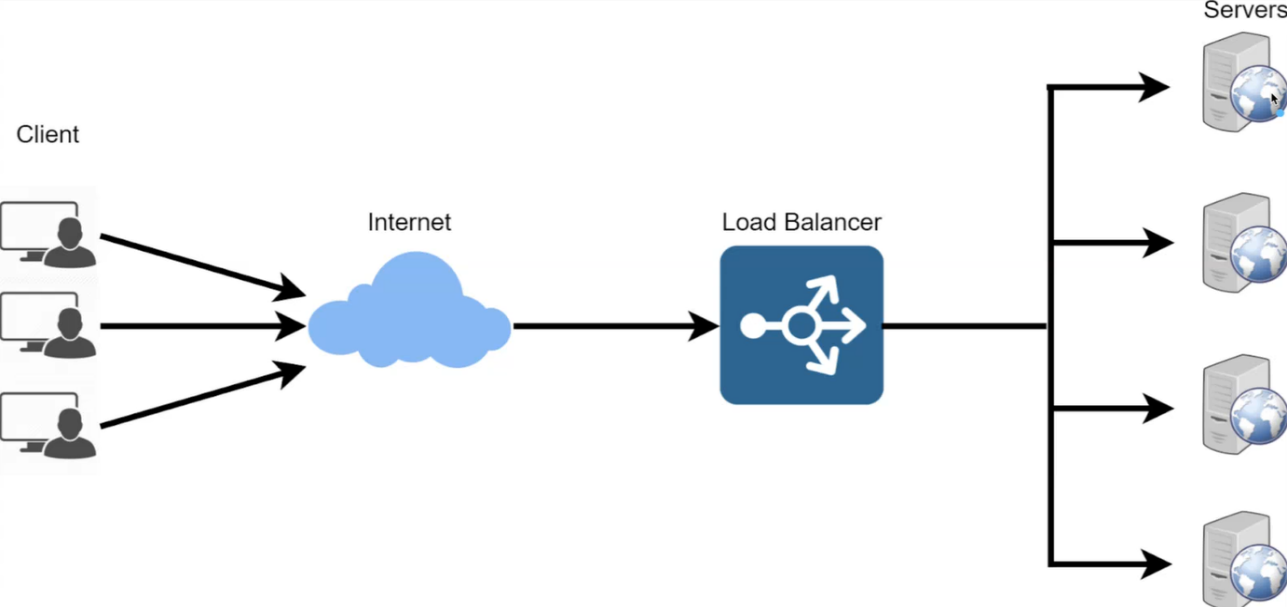
* **Feb**: Portal hosted on **Azure Cloud** with **2 virtual servers**
* Azure supports **scaling on demand** (elasticity):
  + e.g., Adding a **textbox and save button** in the Azure portal takes **less than 1 minute**.
* Elastic: Can scale up/down based on traffic
* Scalable: Easily provision resources on demand
* Cost-efficient: Avoids overprovisioning during low-traffic periods
* Fast Deployment: Features can be added in minutes

**Key Differences: On-Prem vs Azure Cloud**

| **Aspect** | **On-Premise** | **Azure Cloud** |
| --- | --- | --- |
| Server Provisioning | Manual (weeks/months) | Instant (minutes) |
| Approvals | Required from multiple stakeholders | Not required for elastic scaling |
| Hardware Setup | Manual by Engineers | Not needed |
| Resource Usage | Fixed, often underutilized | Pay-as-you-use (auto scale down) |
| Scalability | Static | Dynamic & Elastic |

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