



ScaleUp Micro Data Center Platform

Integrated Infrastructure for Distributed IT Environments

SCALEUP INFRA TECH PVT. LTD.

A Cloud & IT Infrastructure Services Company

www.scaleupinfotech.com



The Evolution of Digital Infrastructure

Core Data Center
Centralized Compute
Large-Scale Processing



Enterprise IT environments were historically designed around centralized data centers, where data was generated, processed, and stored in core facilities.

Regional / Urban Hub
Aggregation & Filtering
Shared Services



This model is now evolving. With the growth of connected devices, intelligent systems, and real-time applications, large volumes of data are created closer to where it is consumed. Sending all data to distant cloud locations increases latency, operational cost, and compliance complexity.

Local / Edge Site
On-Prem Processing
Low Latency



Devices & Systems
Sensors • Machines • Applications



Modern infrastructure must support distributed processing closer to the edge.

Key Drivers of Distributed IT



- **High Data Volume Applications**
– AI, analytics, video processing



- **Experience-Sensitive Systems**
– Healthcare, BFSI, real-time platforms



- **Autonomous Machine Operations**
– Smart factories, IoT, automation



- **Mission-Critical Services**
– Government, healthcare, emergency systems

Why Traditional Cloud and Server Rooms Are Failing

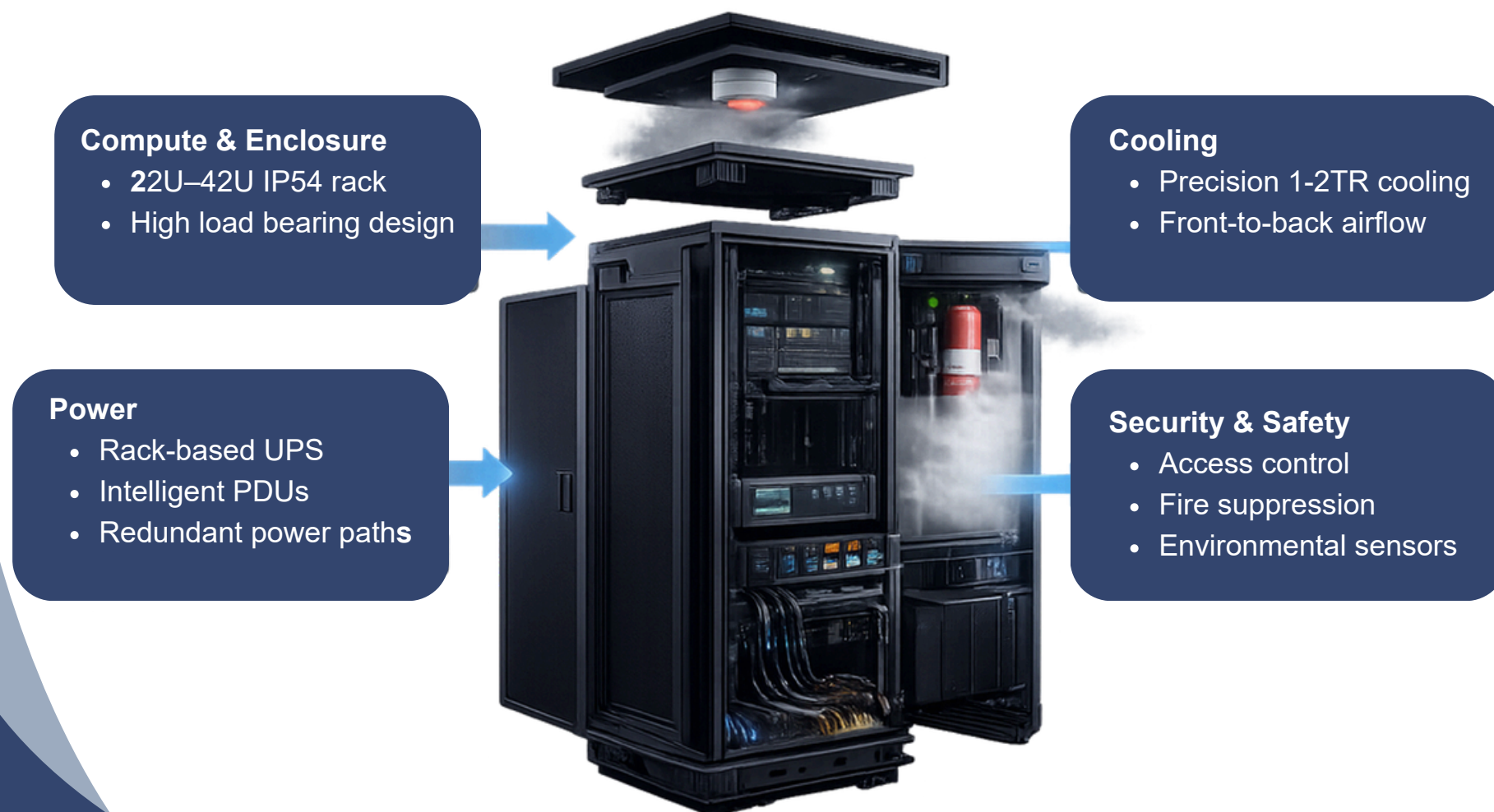
| Infrastructure Element | Traditional Centralized IT | Distributed / Edge IT |
|-------------------------------------|---|--|
| Compute Location | Centralized data center processing | Localized processing near workloads |
| Latency | High latency due to distance | Low latency for real-time response |
| Cost Model | Variable and unpredictable cloud costs | Predictable infrastructure operating costs |
| Scalability | Large upfront expansion required | Modular and incremental scaling |
| Infrastructure Visibility | Limited real-time monitoring | Continuous real-time visibility |
| Data Control | Partial control with third-party dependency | Full on-premises data ownership |
| Deployment Speed | Long deployment cycles | Rapid plug-and-play deployment |
| Compliance & Sovereignty | Challenging for regulated environments | Designed for compliance and data residency |

Organizations now require localized, intelligent, and self-contained infrastructure.

ScaleUp Micro Data Center Platform

Integrated Infrastructure for Distributed & Edge IT

ScaleUp InfraTech delivers a purpose-built Micro Data Center platform designed to support modern, distributed IT environments. The solution integrates compute, power, cooling, security, and monitoring into a single, factory-engineered system—enabling rapid deployment, predictable performance, and operational control.



Platform Capabilities

- Pre-engineered, factory-integrated Micro Data Center
- Modular and scalable architecture
- Integrated power, cooling, safety, and monitoring
- Designed for on-premises and edge deployments
- Suitable for regulated and mission-critical environments

Infrastructure Philosophy

Secure | Intelligent | Scalable

Infrastructure engineered to operate reliably where data is generated, processed, and consumed

Deployment Scenarios

- Government & Public Sector Infrastructure
- Enterprise & Industrial Facilities
- Edge & Remote Locations
- Mission-Critical IT Workloads

Reliable Power Architecture

ScaleUp MDC integrates conditioned power delivery with battery-backed continuity, protecting IT equipment from outages, fluctuations, and overload conditions.

Key Elements

- Online UPS
- Intelligent PDUs
- Load monitoring



Integrated Infrastructure Architecture



Compute & Enclosure



Power Systems



Thermal Management

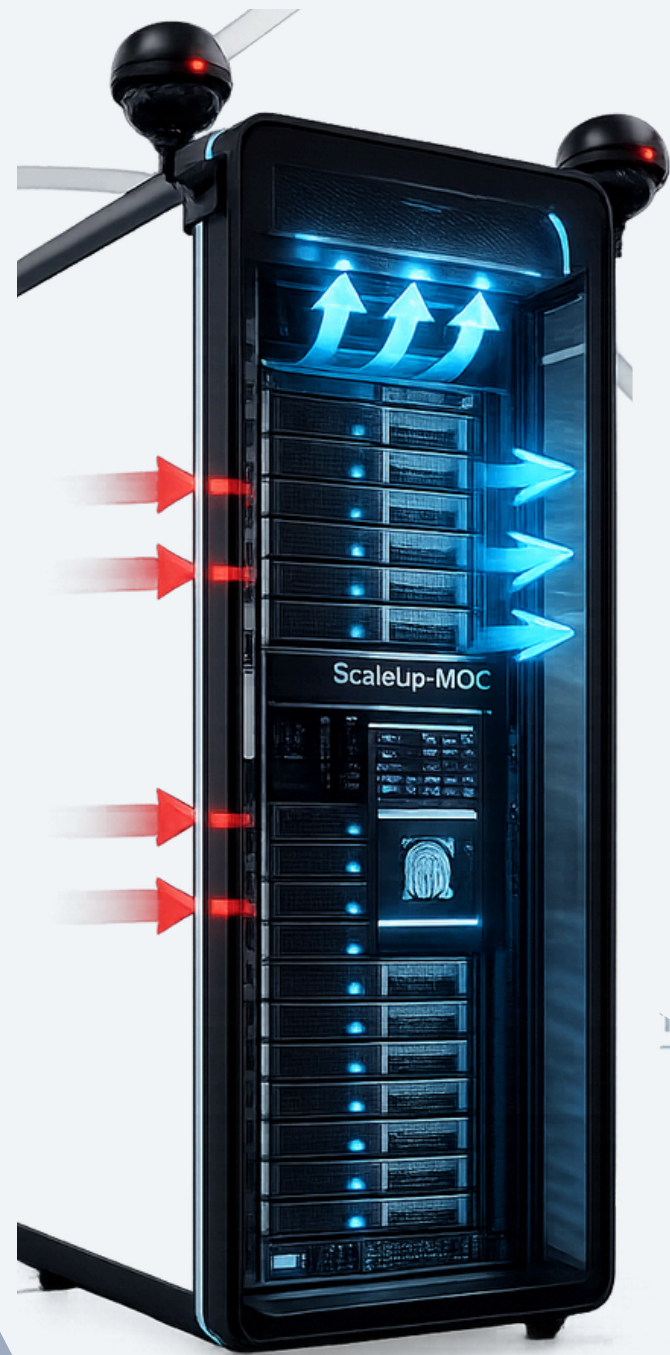


Safety & Security



Monitoring & Control

Targeted Cooling for IT Equipment



Unlike conventional facilities that cool entire rooms, ScaleUp MDC applies cooling directly where heat is generated.

This approach:

- Improves energy efficiency
- Maintains stable operating conditions
- Reduces unnecessary cooling overhead

Operating Range

18–27°C | 40–55% RH

Equipment-Safe Fire Protection

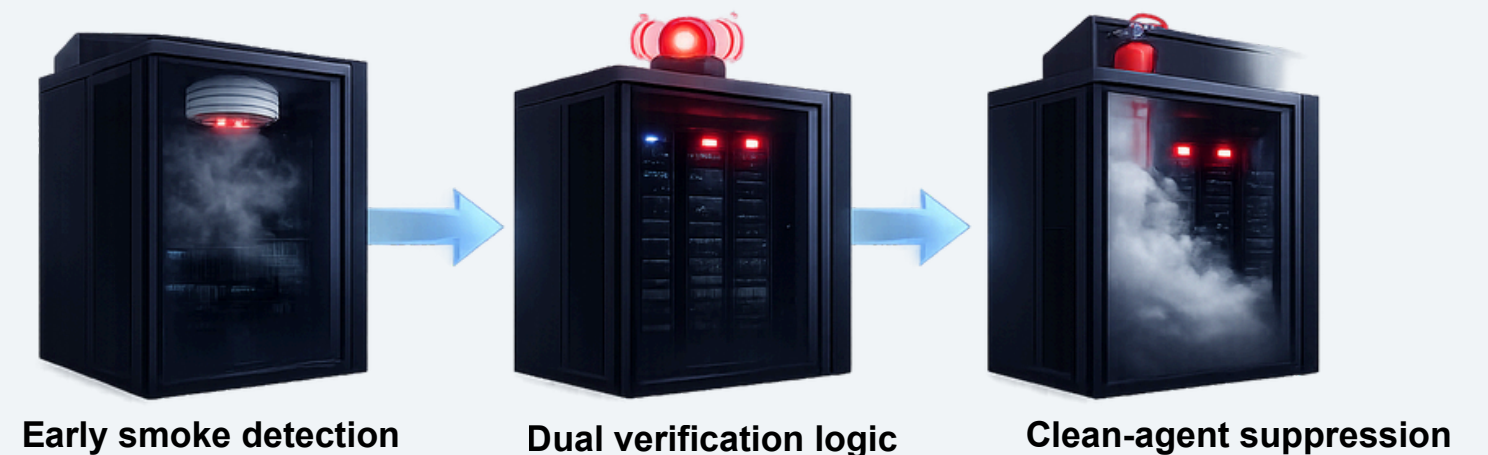
ScaleUp MDC integrates clean-agent fire suppression designed to detect and respond to fire events without damaging sensitive electronics.

System Features

- Early smoke detection
- Double-verification logic
- Localized discharge

Standards

UL | CE | LPCB | RoHS



Controlled Access Infrastructure

Physical security is implemented through layered access controls and continuous event logging.

Security Controls

1. Biometric and credential-based access
2. Dual authentication
3. Emergency override mechanisms
4. Complete audit trails

Infrastructure Visibility and Control

An integrated monitoring platform provides real-time insight into infrastructure health, environmental conditions, and security events.

Monitored Domains

- Power
- Cooling
- Environment
- Access
- Safety systems

Alerting

SMS | Email | SNMP



ScaleUp Edge MDC + SIMS: Integrated Platform



Factory-engineered Edge Micro Data Center integrated with SIMS to enable centralized, intelligent infrastructure management.

Integrated MDC Layers

- Compute: 22U–45U Rack, High Load
- Power: Online UPS, Intelligent PDUs
- Cooling: 18–27°C | 40–55% RH
- Security: Biometric + Dual Auth
- Monitoring: DCIM + Central Dashboard

SIMS – AI-Powered Layer

- Monitoring: Temp, Fire, RFID, Cameras
- IT Metrics: CPU, RAM, Network, Bandwidth
- Billing: Per-U, Power Billing, Invoices
- Remote Ops: SSH/RDP, Reboot, Site Control

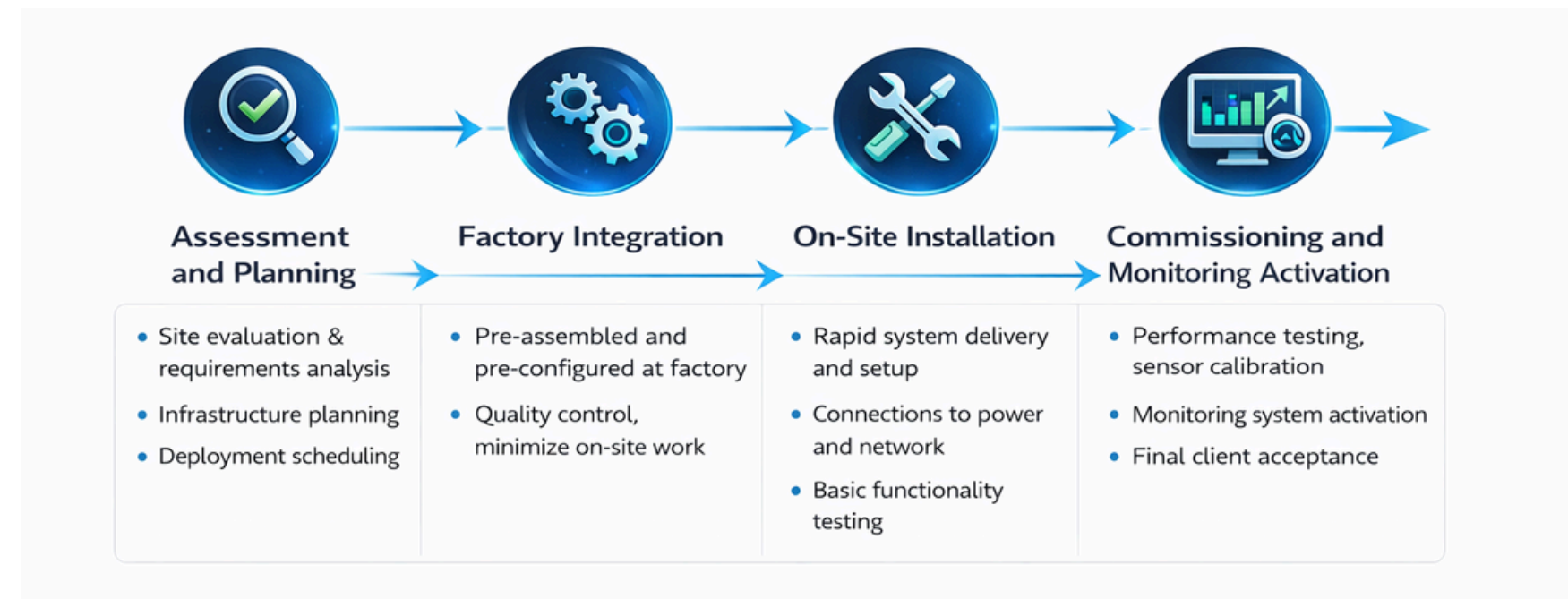
Alerting: SMS | Email | Webhook | Auto Escalation

Streamlined Deployment Approach

ScaleUp MDC is engineered for accelerated deployment cycles with minimal site disruption.

Deployment Phases

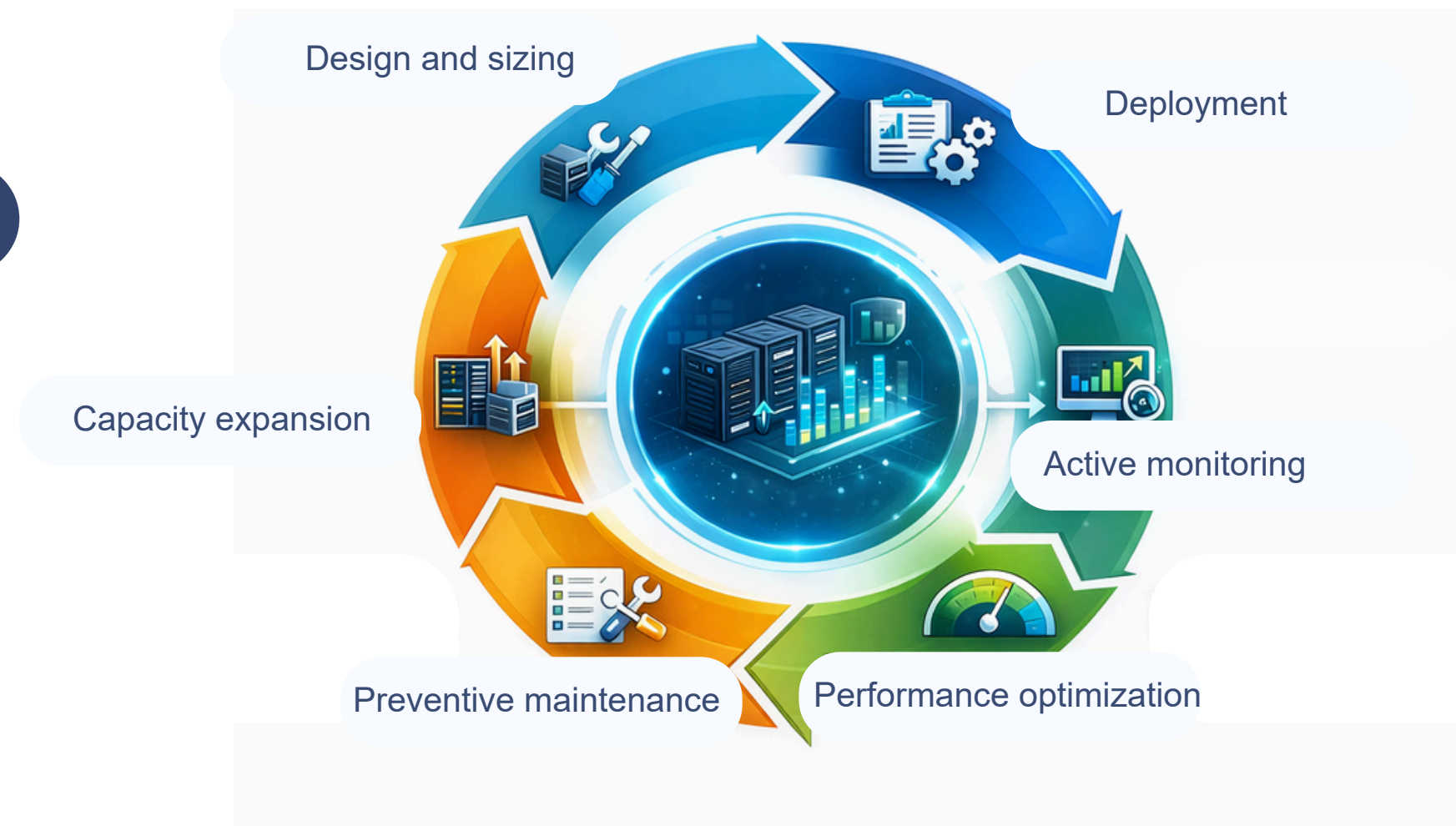
1. Assessment and planning
2. Factory integration
3. On-site installation
4. Commissioning and monitoring activation



Continuous Infrastructure Lifecycle

Lifecycle Stages

1. Design and sizing
2. Deployment
3. Active monitoring
4. Performance optimization
5. Preventive maintenance
6. Capacity expansion



Infrastructure Ownership and Data Control

ScaleUp MDC enables organizations to retain full control over data and infrastructure while achieving operational flexibility.

Key Outcomes

- On-premises deployment
- Reduced external dependency
- Alignment with regulatory frameworks
- Suitable for sensitive workloads



Designed to Grow with Demand

Infrastructure can be expanded incrementally without redesigning the environment.

Scalability Options

- Additional racks
- Power and cooling expansion
- Unified monitoring across sites



ScaleUp Edge MDC Benefits

SCALE

SPEED

SOVERIGNTY

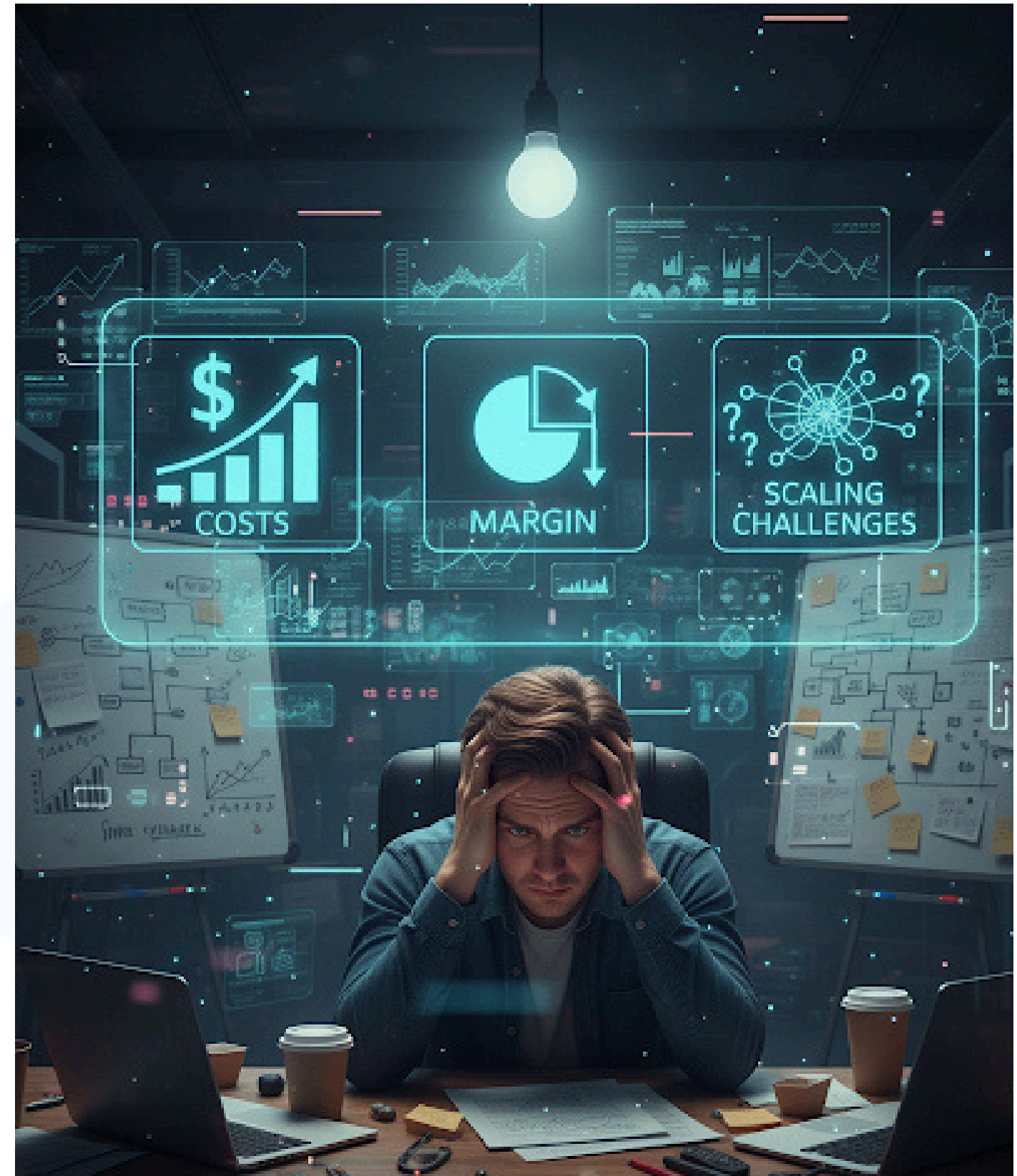
SUSTAINABILITY

SECURITY

SMART LOW
LATENCY

Designed to Grow with Demand

| | |
|--|--|
| Government Agencies Secure, compliant data storage for sensitive government operations | Smart Cities Edge computing infrastructure for IoT and real-time city management |
| Public Healthcare HIPAA-compliant infrastructure for digital health initiative | Education Sector Robust infrastructure for digital learning platforms |





ScaleUp InfraTech Pvt. Ltd. – Redefining Data Center Intelligence

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