OUTEREDGE TECHNOLOGY

Compliance Grade Infrastructure. Every Time.

Applying ALCOA Principles to Physical IT Infrastructure

This framework maps ALCOA (and ALCOA+) data integrity principles to physical IT infrastructure components such as servers, storage, memory, and networking to guide governance, compliance, and operations in regulated environments (e.g., GxP, FDA, EMA).



A – Attributable

- Access to data centers and equipment is tied to specific individuals via badges, biometrics, and logs.
- Infrastructure changes are linked to named engineers through ticketing and change management systems.
- Firmware updates, reboots, and component replacements generate auditable records.

L – Legible

- Rack layouts, cabling diagrams, and storage records are clear, current, and maintained.
- Physical asset labels remain durable and readable over time.
- Maintenance logs and SOPs are stored in standardized, accessible formats.

C – Contemporaneous

- Hardware activities are logged at the time of execution.
- Monitoring tools generate real-time, timestamped system logs.
- Change records are completed before or during the activity, not after.

O – Original

- Original monitoring and system logs are retained, not summarized.
- Vendor diagnostics and firmware version reports are preserved.
- Ticketing systems maintain the original request and approval trail.

A – Accurate

- Asset inventories are reconciled against deployed infrastructure.
- CMDB records align with discovery and monitoring tools.
- Time synchronization (NTP) is enforced across all infrastructure components.

ALCOA+ (Extended Principles)

- ☐ **Complete**
  Full asset lifecycle history is maintained from procurement to retirement.
- ☐ **Consistent**
  Standardized naming, documentation, and change practices are applied.
- ☐ **Enduring**
  Logs and records are retained in validated systems for required periods.
- ☐ **Available**
  Infrastructure records are readily retrievable for audits and inspections.

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