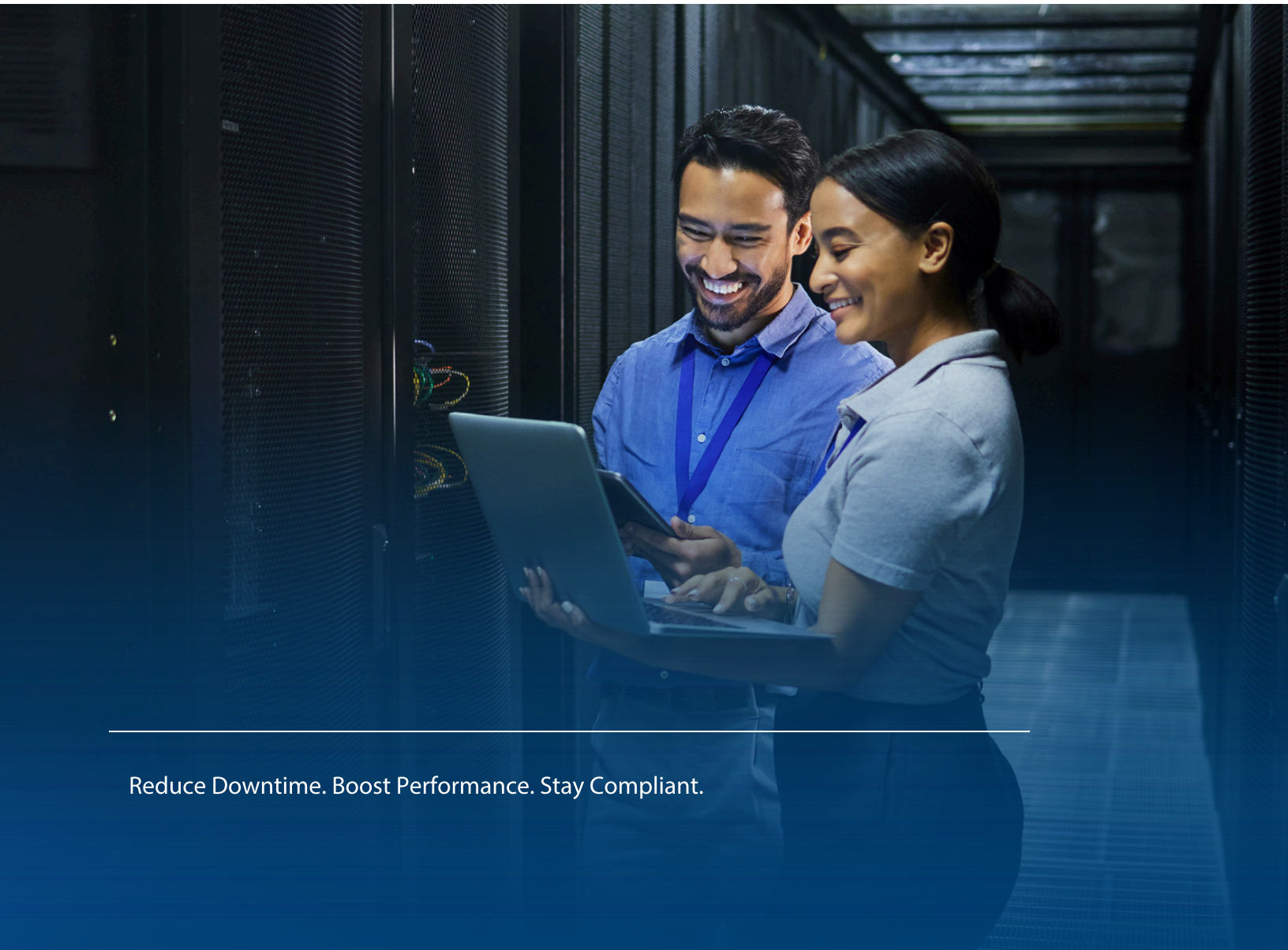
GDI AINSWORTH

Data Centers Checklist

GDI's complimentary resource developed to help facility managers and operation teams maintain review the most essential operational, safety, and maintenance best practices.



Reduce Downtime. Boost Performance. Stay Compliant.

Why Cleanliness Matters in Data Centers

A data center's performance is directly tied to its physical environment

CLEANLINESS IS CRUCIAL FOR:

- **Preventing Downtime:** Dust, debris, and contaminants can cause hardware failures and disrupt system operations.
- **Maintaining Airflow Efficiency:** Obstructions can increase cooling costs and reduce the lifespan of equipment.
- **Ensuring Compliance:** Adhering to cleanliness standards (like ISO 14644-1) is critical for meeting regulatory requirements.
- **Improving Reliability:** Regular cleaning ensures that equipment and systems are functioning at peak performance, minimizing the risk of costly repairs.

A proactive cleaning strategy is key to achieving these goals while maintaining a clean and controlled environment.

Daily/Weekly Cleaning Tasks

DATA HALLS AND HOT/COLD AISLES

- [ ] **Wipe down server racks and cabinets**
  Use anti-static microfiber cloths to clean flat surfaces and prevent dust buildup.

- [ ] **Organize cable trays and raceways**
  Remove clutter to prevent airflow blockages, which can lead to overheating.

- [ ] **Remove trash immediately**
  This includes any packaging materials, leftover cables, or non-essential equipment left in aisles.

- [ ] **Spot mop floors**
  Use an anti-static neutral pH cleaning solution to ensure that floor does not attract dust or debris.

ACCESS POINTS

- [ ] **Clean entryway surfaces**
  Wipe down door handles, card readers, and push plates to maintain a hygienic and secure environment.

- [ ] **Inspect and clean reusable tacky mats**
  These prevent contaminants from entering the white space and should be cleaned regularly.

ENVIRONMENTAL MONITORING

- [ ] **Check for dust accumulation**
  Inspect air vents, filters, and cooling units for visible signs of dust or dirt buildup.

- [ ] **Log and address airflow blockages**
  Keep a record of any issues and schedule follow-up maintenance if airflow is compromised.

Monthly Cleaning Tasks

RAISED FLOOR & SUBFLOOR CLEANING

- [ ] **Vacuum the subfloor**
  Use HEPA-filtered vacuums to remove dust and debris without disturbing sensitive equipment.

- [ ] **Inspect for dust buildup**
  Pay particular attention to cables, grounding wires, and tile supports—ensure that no dust or dirt is clogging pathways for airflow.

- [ ] **Ensure proper placement of airflow grilles**
  Make sure tiles and airflow grilles are properly aligned to ensure balanced air distribution.

CEILING PLENUM (IF APPLICABLE)

- [ ] **Clean overhead components**
  Use HEPA vacuums to remove dust from cable trays, lighting fixtures, ducts, and piping in the ceiling plenum.

- [ ] **Inspect for leaks or contaminants**
  Ensure no water or foreign substances are present that could affect cooling or equipment functionality.

AIR HANDLING UNITS (AHUS) & CRAC UNITS

- [ ] **Replace filters**
  Regularly replace or clean filters to ensure optimal airflow and to prevent allergens or particles from entering the data center.

- [ ] **Clean air grilles and surfaces**
  Inspect and wipe down coils and fans to maintain efficient cooling performance.

- [ ] **Check for condensation**
  Inspect cooling units for any signs of condensation buildup, which could lead to water damage or corrosion.

Quarterly / Biannual Tasks

DEEP CLEANING & PREVENTIVE MAINTENANCE SUPPORT

- [ ] **White Space Cleaning**
  Wipe hot aisle walls, lighting fixtures, and overhead cable trays using microfiber clothes to capture the finest particles. Use HEPA vacuum on areas that can't be easily accessed.

- [ ] **Subfloor and ceiling plenum deep Vacuuming and cleaning**
  This ensures that dust and contaminants in hard-to-reach places are addressed.

- [ ] **Coordinate around maintenance windows**
  Schedule cleaning activities during planned downtime or low-traffic periods to minimize disruption to operations.

- [ ] **Update cleaning logs**
  Document every cleaning session, including areas cleaned, time spent, and any maintenance performed. This is essential for audits and compliance tracking.

SPECIALTY EQUIPMENT & TOOLS

- [ ] **Calibrate particle counters and cleanliness sensors**
  If your facility uses monitoring equipment for cleanroom standards (like ISO 14644-1), ensure the particulate monitor is properly calibrated.

- [ ] **Clean electrical equipment**
  Carefully clean exterior surfaces of PDUs, UPS systems, and power distribution racks—avoid invasive cleaning techniques on sensitive electronics.

- [ ] **Non-invasive IT equipment cleaning**
  Use anti-static tools to clean the exteriors of IT equipment. Avoid disassembling hardware for cleaning purposes, as this can void warranties.

Recommended Best Practices

BEST PRACTICES

01 **Adopt ESD-Safe Materials**
Ensure that all cleaning tools, from mops and vacuums to cloths and wipes, are designed for electrostatic discharge (ESD) protection to prevent damage to sensitive components.

02 **Implement Proper PPE for Cleaning Teams**
Staff should wear personal protective equipment (PPE), such as shoe covers, gloves, and ESD-safe garments, to prevent additional contamination of the white space.

03 **Develop a Structured Cleaning Schedule**
Have a dedicated cleaning schedule based on operational needs—daily for high-traffic areas, weekly for common areas, and quarterly for in-depth cleaning. Document each of the cleanings that are performed.

04 **Communicate with IT and Operations Teams**
Always coordinate with the IT team to ensure that equipment is powered down safely before cleaning begins, and that no equipment is exposed to cleaning materials or debris.

05 **Ensure properly trained staff understand the process**
Ensure that everyone involved in the cleaning process, from specialized data center cleaning vendors to in-house technicians, is properly trained on the importance of cleanliness in data centers and how to execute best practices.

ADDITIONAL RESOURCES

- **ISO 14644-1:** Defines cleanroom classifications for airborne particles and offers guidelines for managing clean environments.
- **ASHRAE TC 9.9:** Offers guidelines for the design, operation, and maintenance of data centers, with an emphasis on energy efficiency and cooling performance.
- **Uptime Institute's Data Center Operations**: Offers insights into operational sustainability and best practices for uptime and risk mitigation.
- **Manufacturer Guidelines:** Always consult equipment manuals and manufacturer recommendations for cleaning protocols and warranty compliance.

A regular cleaning regimen is essential for preventing costly downtime, ensuring operational efficiency, and adhering to industry regulations. By following this guide, data centers can improve their overall environmental health and keep operations running smoothly.

If your team requires assistance with professional cleaning services or needs to establish a comprehensive data center cleaning program, GDI Ainsworth is here to help.

Contact us today to learn more about our specialized cleaning services.

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