

# Liebert Data Center Audit

## General

- 1) Size of data center: \_\_\_\_\_ square meters
- 2) Utilized floor space: \_\_\_\_\_%
- 3) Growth expected in the next 12 months: \_\_\_\_\_%
- 4) Plans to expand the data center in the next 12 months: Yes \_\_\_\_\_ No \_\_\_\_\_
- 5) Data center expansion completed in the past 12 months: Yes \_\_\_\_\_ No \_\_\_\_\_
- 6) Limiting factors preventing the addition of new equipment (select all that apply):  
Floor space \_\_\_\_\_ Rack space \_\_\_\_\_ Cooling capacity \_\_\_\_\_ Heat Density/hot spots \_\_\_\_\_ Power Capacity \_\_\_\_\_ None \_\_\_\_\_  
Other (please specify): \_\_\_\_\_
- 7) Access control (i.e. card swipes, contact closures, etc.): Room & Rack \_\_\_\_\_ Room only \_\_\_\_\_ Rack only \_\_\_\_\_ None \_\_\_\_\_
- 8) Fire suppression: Dry (clean agent) & Water \_\_\_\_\_ Dry (clean agent) only \_\_\_\_\_ Water only \_\_\_\_\_ None \_\_\_\_\_
- 9) Room layout: Electronic \_\_\_\_\_ Hand Drawn \_\_\_\_\_ None \_\_\_\_\_ (Will be included in report if provided)
- 10) Electrical/mechanical one-lines: Available and up-to-date \_\_\_\_\_ Available, but not up-to-date \_\_\_\_\_ Not available \_\_\_\_\_

## Racks and Cabling

- 11) Total number of racks: \_\_\_\_\_ If "0", skip to 19
- 12) Rack utilization: \_\_\_\_\_%
- 13) Blanking panel use in open U: 90-100% \_\_\_\_\_ 25-89% \_\_\_\_\_ 0-24% \_\_\_\_\_
- 14) Door type: Solid \_\_\_\_\_ Perforated \_\_\_\_\_ None \_\_\_\_\_
- 15) If perforated, percent perforation: <63% \_\_\_\_\_ 63-74% \_\_\_\_\_ 75% or greater \_\_\_\_\_
- 16) Rack cabling airflow blockage: Little/None (cables neatly bundled) \_\_\_\_\_ Some \_\_\_\_\_ Significant \_\_\_\_\_
- 17) Racks arranged in Hot/Cold aisle configuration: All \_\_\_\_\_ Some \_\_\_\_\_ None \_\_\_\_\_
- 18) Estimated kW per rack: Average per rack: \_\_\_\_\_ kW Max in any rack: \_\_\_\_\_ kW
- 19) Power cabling location: Above rack & Under floor \_\_\_\_\_ Above rack only \_\_\_\_\_ Under floor only \_\_\_\_\_
- 20) Power distribution via: Cables/power whips \_\_\_\_\_ Power Busway \_\_\_\_\_
- 21) Network / Communication cabling: Above rack & Under floor \_\_\_\_\_ Above rack only \_\_\_\_\_ Under floor only \_\_\_\_\_

## Monitoring

- 22) Site-level monitoring software used: Yes \_\_\_\_\_ No \_\_\_\_\_ If yes; what: \_\_\_\_\_
- 23) **Equipment monitoring**  
ATS/Genset: Via Network \_\_\_\_\_ On unit \_\_\_\_\_ None \_\_\_\_\_ N/A (no ATS/gen) \_\_\_\_\_  
UPS/PDU: Via Network \_\_\_\_\_ On unit \_\_\_\_\_ None \_\_\_\_\_ N/A (no UPS/PDU) \_\_\_\_\_  
Rack PDUs: Via Network \_\_\_\_\_ On unit \_\_\_\_\_ None \_\_\_\_\_ N/A (no rack PDU) \_\_\_\_\_  
Cooling: Via Network \_\_\_\_\_ On unit \_\_\_\_\_ None \_\_\_\_\_ N/A (no cooling) \_\_\_\_\_
- 24) Battery monitoring: Yes \_\_\_\_\_ No \_\_\_\_\_ N/A - No UPS \_\_\_\_\_
- 25) UPS shutdown software: Yes \_\_\_\_\_ No \_\_\_\_\_ N/A - No UPS \_\_\_\_\_
- 26) Environmental monitoring: Temperature/humidity & Leak detection \_\_\_\_\_ Temperature/humidity only \_\_\_\_\_ Leak detection only \_\_\_\_\_ None \_\_\_\_\_
- 27) Capacity tracking / trending: Cooling & Power \_\_\_\_\_ Cooling only \_\_\_\_\_ Power only \_\_\_\_\_ None \_\_\_\_\_
- 28) Dedicated data center staff to monitor alarms 24x7x365: Yes \_\_\_\_\_ No \_\_\_\_\_
- 29) Change Management: Software \_\_\_\_\_ Spreadsheet \_\_\_\_\_ None \_\_\_\_\_

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## Service

**30) Preventative maintenance frequency:**

**ATS/Genset:** Annually \_\_\_\_\_ Semi-annually \_\_\_\_\_ Quarterly \_\_\_\_\_ None \_\_\_\_\_ N/A (no ATS/Genset) \_\_\_\_\_ / Contract \_\_\_\_\_ Ad-hoc \_\_\_\_\_

**UPS/PDU:** Annually \_\_\_\_\_ Semi-annually \_\_\_\_\_ Quarterly \_\_\_\_\_ None \_\_\_\_\_ N/A (no UPS/PDU) \_\_\_\_\_ / Contract \_\_\_\_\_ Ad-hoc \_\_\_\_\_

**Battery:** Annually \_\_\_\_\_ Semi-annually \_\_\_\_\_ Quarterly \_\_\_\_\_ None \_\_\_\_\_ N/A (no Battery) \_\_\_\_\_ / Contract \_\_\_\_\_ Ad-hoc \_\_\_\_\_

**Cooling:** Annually \_\_\_\_\_ Semi-annually \_\_\_\_\_ Quarterly \_\_\_\_\_ None \_\_\_\_\_ N/A (no Cooling) \_\_\_\_\_ / Contract \_\_\_\_\_ Ad-hoc \_\_\_\_\_

**31) 3rd party remote monitoring service contract:** Yes \_\_\_\_\_ No \_\_\_\_\_

## Cooling

**32) Room vapor barrier:** Good vapor barrier (walls, doors & ceiling sealed) \_\_\_\_\_ Inadequate vapor barrier (wall, doors and/or ceiling not sealed) \_\_\_\_\_

**33) Hot spots:** Yes \_\_\_\_\_ No \_\_\_\_\_

**34) Average server inlet temperature reading:** \_\_\_\_\_ degrees Celsius

**35) High / low inlet temps:** Some >27 degrees Celsius \_\_\_\_\_ Some <18 degrees Celsius \_\_\_\_\_ All 18-27 degrees Celsius \_\_\_\_\_

**36) Average server inlet humidity reading:** \_\_\_\_\_%

**37) Average server inlet dew point reading:** \_\_\_\_\_ degrees Celsius

**38) Type of cooling used:** Precision \_\_\_\_\_ Room split system (no humidification) \_\_\_\_\_ Comfort/building only \_\_\_\_\_ *If "Comfort/building only", skip to 57*

**39) Data center cooling unit information:**

Brand \_\_\_\_\_ Model # \_\_\_\_\_ Capacity \_\_\_\_\_ kW % Loaded \_\_\_\_\_ Install Date \_\_\_\_\_ (DD/MM/YYYY)

Brand \_\_\_\_\_ Model # \_\_\_\_\_ Capacity \_\_\_\_\_ kW % Loaded \_\_\_\_\_ Install Date \_\_\_\_\_

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**40) Type of heat rejection:** Chilled water \_\_\_\_\_ Water-cooled \_\_\_\_\_ Glycol-cooled \_\_\_\_\_ Air-cooled \_\_\_\_\_

**41) Cooling unit age:** ≤10 years old \_\_\_\_\_ 11-20 years old \_\_\_\_\_ >20 years old \_\_\_\_\_

**42) Cooling capacity:** Total: \_\_\_\_\_ kW Non-redundant: \_\_\_\_\_ kW

**43) Approximate utilized cooling capacity:** \_\_\_\_\_%

**44) Supplemental high density cooling used:** Yes \_\_\_\_\_ No \_\_\_\_\_ N/A - No racks w/>5kW load \_\_\_\_\_

**45) Cooling redundancy:** Yes \_\_\_\_\_ No \_\_\_\_\_

**46) Cooling unit location:** Aligned with hot aisle / server exhaust (in row or perimeter): \_\_\_\_\_ Not aligned with hot aisle / server exhaust \_\_\_\_\_

**47) Cooling unit temperature set-point:** \_\_\_\_\_ degrees Celsius

**48) Humidity set-point:** \_\_\_\_\_%

**49) Variable capacity:** Variable capacity compressor (DX unit) \_\_\_\_\_ Variable airflow fan (chilled water unit) \_\_\_\_\_ None \_\_\_\_\_

**50) Economizer used:** Air \_\_\_\_\_ Water \_\_\_\_\_ None \_\_\_\_\_

**51) Air distribution isolation:** Cold air containment \_\_\_\_\_ Hot air containment \_\_\_\_\_ Ducted supply/Raised floor \_\_\_\_\_ Free blow (non-raised floor) \_\_\_\_\_

**52) Raised floor utilized for air distribution:** Yes \_\_\_\_\_ No \_\_\_\_\_ *If "No", skip to 57*

**53) Raised floor height:** <20cm \_\_\_\_\_ 20-43 cm \_\_\_\_\_ 46 cm or greater \_\_\_\_\_

**54) Obstructions under floor:** Little/none \_\_\_\_\_ Some (under hot aisle) \_\_\_\_\_ Significant (under hot and cold aisle) \_\_\_\_\_

**55) Leakage:** Little (90-100% holes sealed) \_\_\_\_\_ Some (50-89% holes sealed) \_\_\_\_\_ Significant (<50% holes sealed) \_\_\_\_\_

**56) Perforated tile usage outside cold aisle:** None \_\_\_\_\_ Some \_\_\_\_\_ Significant \_\_\_\_\_

