**DC PRO QUESTIONS CHECKLIST**

Below is a checklist of questions to be answered for DC Pro Steps 1 and 2. Questions that are mandatory to answer are indicated with an asterisk. Questions that their answers impact the PUE calculation are identified by a yellow background. Questions that require certain answers from a previous question will be noted.

**Step 1**

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| **General Information** |
| Profile Name\* | Enter name |
| Organization\* | Enter name |
| Climate Zone (Asked only if you check the toggle switch on the right of Address) | Select from the List |
| State/Region | Select from the list of States |
| County | Select from the list of Counties for each State |

**Step 2**

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| **Energy Management** |
| Has an energy audit been conducted within the last 2 years? | Yes or No |
| Is there a written energy management plan? | Yes or No |
| Is there an energy manager directly responsible for the energy management plan? (Only asked if you have an energy management plan) | Yes or No |
| Has upper management accepted the energy management plan? (Only asked if you have an energy management plan) | Yes or No |
| Is there an energy measurement and calibration program in place? | Yes or No |
| Is there a preventative maintenance program in place? | Yes or No |

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| **IT Equipment** |
| Do you measure and track IT equipment (storage, server & network) utilization? | Yes or No |
| Do you have a process for identifying abandoned/un-used servers and taking them offline? | Yes or No |
| What is the average age at which you replace your servers | Select from the list: 0-2yrs, 3yrs, 4yrs, or 5+ years |
| Are you using virtualization to consolidate your server workloads? | Yes or No |
| How extensive is your storage consolidation? | Select from the list: 0%, 1% to 50%, 51% to 99%, or 100% |
| What storage tiers have you implemented? (mark all that apply) | Select from the list: More than one production tier, Archiving tier, Near-line storage |
| Have you implemented storage optimization techniques such as thin provisioning, incremental snapshots, or de-duplication? | Yes or No |

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| **Environmental Conditions** |
| What is the typical (average) air temperature leaving the cooling coils (supply)? | Select from the list: 55 F (13 C), 60 F (16 C), 65 F (18 C), 70 F (21 C), 75 F (24 C), 80 F (27 C), 85 F (29 C), 90 F (32 C), 95 F (35 C), 100 F (38 C), 105 F (41 C), 110 F (43 C), 115 F (48 C), or >115 F (>48 C) |
| What is the typical (average) air temperature entering the cooling coils (return)? | Select from the list: 55 F (13 C), 60 F (16 C), 65 F (18 C), 70 F (21 C), 75 F (24 C), 80 F (27 C), 85 F (29 C), 90 F (32 C), 95 F (35 C), 100 F (38 C), 105 F (41 C), 110 F (43 C), 115 F (48 C), 120 F (49 C), 125 F (52 C), 130 F (54 C), 135 F (57 C), 140 F (60 C), or >140 F (>60 C) |
| What is the typical (average) IT equipment intake air temperature? | Select from the list: 55 F (13 C), 60 F (16 C), 65 F (18 C), 70 F (21 C), 75 F (24 C), 80 F (27 C), 85 F (29 C), 90 F (32 C), 95 F (35 C), 100 F (38 C), 105 F (41 C), 110 F (43 C), 115 F (48 C), or >115 F (>48 C) |
| What is the typical (average) IT equipment exhaust air temperature? | Select from the list: 55 F (13 C), 60 F (16 C), 65 F (18 C), 70 F (21 C), 75 F (24 C), 80 F (27 C), 85 F (29 C), 90 F (32 C), 95 F (35 C), 100 F (38 C), 105 F (41 C), 110 F (43 C), 115 F (48 C), 120 F (49 C), 125 F (52 C), 130 F (54 C), 135 F (57 C), 140 F (60 C), 145 F (63 C), 150 F (66 C), 155 F (68 C), 160 F (71 C), 165 F (74C), 170 F (77 C), 175 F, (79 C), 180 F (82 C), or >180 F (>82 C) |
| Data Center Class | Select from the list: A1, A2, A3, A4, B, C |
| Adopted IT Intake Air Temperature Maximum | Select from the list: 65 F (18 C), 70 F (21 C), 75 F (24 C), 80 F (27 C), 85 F (29 C), 90 F (32 C), 95 F (35 C), 100 F (38 C), 105 F (41 C), 110 F (43 C), 115 F (48 C), or >115 F (>48 C) |
| Do the readings from cooling system temperature sensors represent the IT equipment intake air conditions? | Yes or No |
| Does your air management scheme, your economizing system (if present), and your IT equipment allow your data center to operate near the ASHRAE max Recommended IT equipment intake temperature, and occasionally between the ASHRAE max Recommended and max Allowable intake temperature (per your data center Class) during 100% mechanical cooling? | Yes or No |
| Do you have active, working humidification controls? | Yes or No |
| What type of humidifier do you have? (Only asked if you have active, working humidification controls) | Select from the list: Electric Resistance Heating/Infrared Lights, Steam from Boiler, Direct Evaporation, or Ultrasonic |
| Do you have active, working dehumidification controls? | Yes or No |
| Is there a continuous source of outside air admitted to the data center for ventilation? (Only asked if you either have active, working humidification or dehumidification controls) | Yes or No |
| Humidity control sensor location? (Only asked if you have a continuous source of outside air for ventilation) | Select from the list: Outside Air Stream Only, Recirculation Air Stream Only, or Outside Air Stream and Recirculation Air Stream |
| Are the current cooling system high and/or low humidity limit setpoints for the IT intake air tighter than the ASHRAE recommended limits for your data center Class? | Yes or No |
| Do CRAC/H units have centralized (networked) or distributed controls? | Select from the list: Centralized or Distributed |
| Are CRAC/Hs fighting each other (for example, simultaneously humidifying and dehumidifying)? | Yes or No |
| Do the cooling system controls allow you to apply correction factors (Slope and Offset) to the signals from the temperature and humidity sensors? | Yes or No |

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| **Air Management** |
| Can your adopted Recommended IT equipment intake air condition be maintained if you turn off one or more selected CRAC/H units? | Yes or No |
| Is there any supplemental cooling? | Select from the list: None, In-Row, Modular, Overhead, Rear-Door, or Liquid-Cooled Cabinet |
| Does the CRAC/CRAH/AHU have a free cooling coil (water side economizer)? | Yes or No |
| Is there air-side free cooling? | Yes or No |
| Air Supply Path | Select from the list: Overhead Ducts, Overhead Plenum, Underfloor Plenum, In-Row, Free |
| Is there a floor-tightness (sealing leaks) program in place? (Only asked if you employ an Underfloor Plenum as your Air Supply Path) | Yes or No |
| Degree of sealing for cable penetrations? (Only asked if you employ Overhead Plenum, Underfloor Plenum, In-Row, or Free as your Air Supply Path) | Select from the list: Poor to None, Fair, Good |
| Is the cable build-up in the floor plenum or the over-head plenum more than 1/3 of the plenum height? (Only asked if you employ an Overhead Plenum or Underfloor Plenum as your Air Supply Path) | Yes or No |
| Is there a program in place for regularly managing cables to allow unobstructed air flow? (Only asked if you employ an Overhead Plenum or Underfloor Plenum as your Air Supply Path) | Yes or No |
| Degree that IT equipment is arranged in rows? | Select from the list: Poor to None, Fair, Good |
| Is there a rack/lineup-tightness (using blanking panels) program in place? (Only asked if your IT equipment row arrangement is Fair or Good) | Yes or No |
| Degree of current implementation of alternating hot and cold aisles? (Only asked if your IT equipment row arrangement is Fair or Good) | Select from the list: Poor to None, Fair, Good |
| Degree that blanking panels are in place? (Only asked if your alternation of hot and cold aisles is Fair or Good) | Select from the list: Poor to None, Fair, Good |
| Where is the supply placed? (Only asked if your alternation of hot and cold aisles is Fair or Good) | Select from the list: Cold Aisles Only, Hot Aisles Only, Hot and Cold Aisles, Not Applicable |
| Is there a diffuser/tile-location (to conserve hot and cold aisles) program in place? (Only asked if your alternation of hot and cold aisles is Fair or Good) | Yes or No |
| Degree to which hot and cold aisles are currently fully enclosed? (Only asked if your alternation of hot and cold aisles is Fair or Good) | Select from the list: Poor to None, Fair, Good |
| What kind of supply fans are in use? | Select from the list: Constant Speed, Equipped with VSD |
| Do some areas of the data center have load densities that are more than 4 times the average load density? | Yes or No |
| Is the air-delivery system balanced to ensure correct airflow rates? | Yes or No |
| Is there an air-balancing (allow proper airflow distribution) program in place? | Yes or No |

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| **Cooling** |
| Cooling System Type? | Select from the list: Air-Cooled DX, Water-Cooled DX, Evaporatively-Cooled DX, or Chilled Water |
| Condenser cooling system (Only asked if your Cooling System is Water-Cooled DX) | Select from the list: Cooling Tower, Dry Cooler |
| Chiller Type (Only asked if your Cooling System is Chilled Water) | Select from the list: Air-Cooled, Water-Cooled |
| Chilled Water Supply Temperature (Only asked if your Cooling System is Chilled Water) | Select from the list: 45F (7C), 50F (10C), 55F (13C) |
| Water-side Economizer (Only asked if Water-Cooled is your Chiller Type) | Select from the list: None, Integrated, or Non-Integrated |
| Cooling tower fan control (Only asked if you answer Cooling Tower for your Condenser Cooling System or Water-Cooled for your Chiller Type) | Select from the list: Fixed Speed, Two-Speed Motor, Variable Speed Drive |
| Type of Valves (Only asked if your Cooling System is Chilled Water) | Select from the list: 2-Way, 3-Way |
| Do you have premium efficiency motors on all cooling supply fans, pumps, and cooling towers that serve the data center? | Yes or No |
| What is the redundancy level for the HVAC systems? | Select from the list: N, N+1, Exceeds N+1, 2N |

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| **IT Equipment Power Chain** |
| Is there an Uninterruptible Power Supply (UPS)? | Yes or No |
| UPS Technology Type (Only asked if you have a UPS) | Select from the list: Double Conversion, Double Conversion + Filter, Delta Conversion, Rotary |
| UPS Size (kVA) (Only asked if you have a UPS) | Select from the list: 50, 100, 150, 225, 300, 400, 500, 600, 750, 800, 900, 100 |
| UPS Voltage (Only asked if you have a UPS) | Select from the list: 480, 208 |
| What is the average load factor per active UPS module? (Only asked if you have a UPS) | Select from the list: 1% to 10%, 11% to 20%, 21% to 30%, 31% to 40%, 41% to 50%, 51% to 60%, 61% to 70%, 71% to 80%, 81% to 90%, 91% to 100% |
| UPS Redundancy Configuration (Only asked if you have a UPS) | Select from the list: N, N+1, 2N |
| Is there a standby generator? | Yes or No |
| Standby Generator Power Configuration (Only asked if you have a standby generator) | Select from the list: N, N+1, 2N |
| Is there a generator block heater? (Only asked if you have a standby generator) | Yes or No |
| Is there a thermostat on the generator block heater? (Only asked if you have a generator block heater) | Yes or No |
| Are there PDUs with built-in transformers? | Yes or No |
| What are the types of MV and LV transformers? (Only asked if you have PDUs with built-in transformers) | Select from the list: Temp rise 80C, Temp rise >80C, TP1, EPACT 2005 |
| Average Load Factor per Active PDUs/Transformers? (Only asked if you have PDUs with built-in transformers) | Select from the list: 0% to 24%, 25% to 49%, 50% to 100% |
| What is the load imbalance between phases? (Only asked if you have PDUs with built-in transformers) | Select from the list: ≤ 20%, > 20% |

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| **Lighting** |
| Lighting Type | Select from the list: Fluorescent, LED, Other |
| What type of lamps are used? (Only asked if you have Fluorescent lights) | Select from the list: T-12, T-8, or T-5 |
| What type of ballasts are used? (Only asked if you have Fluorescent lights) | Select from the list: Magnetic, Electronic |
| How are the lights controlled? | Select from the list: Hard-Wired, Manual Wall Switch, Occupancy Sensor, Timer |

**Checklist for DC Pro (V4) updated September 18th, 2015**