Minimum Attributes of an Existing UW Madison Data Center

Data centers are an expanding, critical infrastructure supporting administrative, instructional, and research computing on campus. Data centers must be operated securely, efficiently, and reliably not only to reduce costs, but to most effectively support the mission of the University.

Below is a list of minimum attributes and specifications for UW Madison data centers recommended by the Administrative Excellence Data Center Aggregation (AE DCA) Facilities sub-team, a working group primarily composed of data center service providers from across campus. Their recommendations are based on work completed in 2012 by a prior AE DCA team, new interview data collected in early 2013, peer benchmarking information, and an assessment of the current landscape of campus data center facilities. Please note that the Facilities sub-team was charged with performing an assessment of physical facilities only, so related topics outside this scope such as staffing and computing resources for data centers are not included in this document.

While the long-term vision is that all facilities operating as data centers will meet or exceed a set of minimum requirements, the set of requirements below represents the first public version and is meant to be a Request For Comments, a starting point for discussion. This work product will also serve as an input to the work of the AE DCA Governance / Organization sub-team as it continues through its work, and all recommendations will be vetted by several campus groups, and must pass through an established approval process before being adopted by campus.

Adopting these minimum requirements will provide improvements in the following areas:

- Energy usage
- Computing availability
- Safety
- Reliability
- Security
- Cost

For more background please visit the AE DCA project site at http://datacenterservices.wisc.edu

The team welcomes your comments, questions, and suggestions at DCAFeedback@lists.wisc.edu
Recommended Minimum Attributes and Specifications for UW Madison Data Centers

Physical Space
- Dedicated to data center purposes
- Floor load capacity >= 100 lbs. / sq. ft.
- Physical accessibility Pathway: 81” height, 30” width minimum (in order to allow a 42RU enclosure to pass)
- Floor space to allow four, 4’ X 2’ cabinets w/ all required code and manufacturer required clearances

Security
- Camera at entrance
- Limited physical key access
- Campus Card Access System (CCAS) with PIN
- Door logging
- Secured support locations (breaker panels / mechanical rooms)

Network
- Single mode fiber available

Power and Cooling
- Power/Energy efficiency (PUE benchmarking)
- Power Capacity (4kW per rack)
- Dedicated circuits for each rack
- Qualified supplemental cooling (TBD)
- Monitoring and metering of power and cooling
- Emergency Power Off (EPO) if required by code
- Emergency Water Off (EWO) when chilled water or glycol are in close proximity to powered IT equipment

Environmental
- Temperature and humidity metering (including trending) and monitoring
- Water detection

Availability
- 24x7 with best effort support

Fire suppression / general safety
- Based on code requirements

Compliance with all relevant codes (NEC, IEBC, NFPA, etc)