



ENERGY STAR Overview and Relationship to SNIA June 25, 2013

U.S. Environmental Protection Agency

ENERGY STAR Overview



- Federal government product and building labeling program
 - Established in 1992
 - EPA and DOE
 - Voluntary participation by private sector
 - Federal agencies required to buy ENERGY STAR products
- Label awarded for superior energy efficiency.
- Also promotes better practices.
 - Power management
 - Efficiency of buildings
- Save money, reduce greenhouse gases and protect environment, add value to products.
- Influential brand recognized by over 85% of Americans

ENERGY STAR Programs



- Products
- Commercial & Industrial Buildings
- ENERGY STAR Homes
- Low Carbon IT Initiative
- “Top 12” Data Center Efficiency Strategies
- ENERGY STAR Utilities
- Retailer outreach

What does the ENERGY STAR Label Mean?



- A labeled product is:
 - More energy efficient than a conventional one
 - Cost effective
 - Payback in energy saved
 - Capable of delivering same or better performance compared to non-labeled products.
 - Better for the climate.

Timeline of Data Center Specification Completion



- 2009:
 - Computer Servers Version 1.0
- 2011:
 - Data Center Buildings program launched
- 2012:
 - UPS Version 1.0
- 2013:
 - Computer Servers Version 2.0 (finalized March 2013)
 - Storage Version 1.0
- 2014:
 - Large Network Equipment Version 1.0
- 2015:
 - Data Center Cooling Version 1.0 (tentative)

Benefits of the ENERGY STAR Label



- Guarantees energy efficiency with same or better performance
- Standard test procedures applied to all products
 - Apples to apples comparison
 - UPS: IEC 62040-3, ATIS-0600015
 - Storage: SNIA Emerald™ Specification
 - Servers: SPEC Server Efficiency Rating Tool (SERT)
- Detailed, publicly available data
 - Ex: UPS products provide efficiency at 25, 50, 75, 100% load points
 - Soon to be available in XML, other machine readable formats
- Unbiased, 3rd party source for energy efficiency information.

Efficiency Measurements



- UPS
 - Measure power in vs. out at a variety of load points for AC, DC systems. Straightforward efficiency calculation.
- Servers
 - Idle power, direct measurement in watts.
 - Active power: SERT applies a variety of worklets, simulates common usage scenarios. Various performance per watt metrics.
 - <http://www.spec.org/sert/>
- Storage
 - Idle power, direct measurement in watts.
 - Active power: SNIA Emerald applies representative workloads.
 - Transaction (high I/O), sequential (large, continuous files), capacity (GB per watt)
 - <http://snia.org/emerald/download>

New Qualified Product Lists



- Enormous data set
 - One of the largest in the world
 - Lists all ENERGY STAR qualified products for the US market
 - All 65+ products types
- Transition in process to new system
 - Target completion date mid-2013
- “ENERGY STAR Product Finder”
 - Basic View
 - Compare Feature
 - Product Details
 - Advanced View
 - Export Options
 - Filter Options
 - Direct access to all datasets
 - Machine readable data export formats (XML, etc.)
- Automated updates Monday, Wednesday and Friday of each week

EPA and SNIA



- Collaboration over last 4 – 5 years
- SNIA developed Emerald™ Specification
 - Test procedure adopted by EPA for ENERGY STAR Storage v1.0
 - Planned to continue for future Storage revisions

EPA and SNIA



- Current ENERGY STAR Storage spec result of years of discussions between EPA, SNIA
 - How to use Emerald Specification in ENERGY STAR
- SNIA and its members have provided major contributions to the development of this specification.
 - Feedback on drafts, hosting face-to-face talks, system test data, conference calls, training, and more.
- EPA looks forward to continuing to work with SNIA.

References and resources



- Certification Body Resources (including application form): www.energystar.gov/CBresources
- ENERGY STAR Data Center Storage specification revision:
 - www.energystar.gov/NewSpecs
 - Select “Data Center Storage”

Questions?

Please send any questions to:
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Thank You!



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