



Mobile Data Center

* High-Performance * Low-Energy *
Modular Scalable Servers



www.leaddogengineering.com

6635 Cabin Creek Dr., Colorado Springs, CO 80923
USA Tel: +1.719.330.8371

Lead Dog Technologies, LLC (LDT) now offers very high density supercomputers and storage subsystems to commercial and government agencies. These are provided as low energy, high performance, reconfigurable, interchangeable modules for servers, storage, power and cooling systems. The **ECO-Sys** modular "building block" design offers scalability in all components. Our **ECO-Serv** server blocks scale from a "one-half U" 80 GigaFLOP server up to a 6,720 GigaFLOP single rack super computer server. Most versions may operate in either a rack mounted datacenter configuration or in a space--constrained, ruggedized, mobile configuration. **ECO-Stor HDD** storage blocks range from 8 TB to 24 TB; **Solid State Disk (SSD)** **ECO-Stor** blocks are also available. **ECO-Serve** and **ECO-Stor** modules combine with **ECO-Watt** power blocks and **ECO-Therm** cooling blocks for ultimate energy savings, performance, mobility, reliability, availability, serviceability and lifecycle extension.

Rugged Pelican Pod
19.5" x 36" x 28" ~ 285 lbs

Lead Dog Mobile Data Center Pod; example configuration includes:

Power Control: Staged & remote power on/off, voltage/current measurement & reporting

Backup Power: 3000 KVA Smart UPS

KVM: 16 port, IP-based

VESS: (*Video Editing and Storage System*) Lead Dog 4U chassis. HD / SD 3G video ingest & image processing, 8 high performance processor cores, integrated 1.2GB/sec 20 TB RAID

EVS-10: Lead Dog ECO-Serv 5U chassis with more than 880 GFLOPs of computing, 8 TB Hard Disk plus 1 TB Solid State Disk, 16x Gig-E plus 40G InfiniBand (8G dual fiber optional)

ECO-Stor: Lead Dog 4U chassis with 96 Terabyte removable RAID Storage



MOBILE DATA CENTER SOLUTIONS – HIGH PERFORMANCE, LOW ENERGY

Our Mobile Data Centers provide the ultimate in high performance and low energy packed into a small, mobile, ruggedized Pod allowing your applications to be deployed in challenging remote areas. Various configuration options using our **ECO-Serv**, **ECO-Stor**, **ECO-Watt** and **ECO-Therm** chassis provide mission critical support for your applications, data collection, analysis, processing, dissemination, high performance computing, storage and protection of your sensitive data.

AN ENTIRE DATA CENTER IN A SINGLE BOX RUNNING ON 110V, 220V OR DC POWER

ECO-Sys Machines pack integrated building block processors, storage, cooling and networking into a very small space, providing extreme scalability with rapid, easy deployment and flexibility. Various Pod sizes are available (e.g., 3 ECO-Sys Machines model EVS-10 chassis fit within a 15U pod, yielding more than 2,400 GFLOPs of CPU power with 240 processor cores). Smaller or larger Pods can be configured, with up to 8 EVS-10 chassis fitting into a 19 inch and rack yielding over 6,720 GFLOPs with 640 cores. Our flexible patent pending Modular Block design allows Processor and Storage Blocks to be interchanged so you can reconfigure any time with standard components. Processor Blocks and Storage Blocks used in the Pod can be removed and placed into a smaller hand carried EVS-1 chassis on DC power. Our removable 8 TB hard disk and 4 TB solid state Storage Blocks can be used to collect large volumes of data, removed and placed into another system for analysis.

Lead Dog Mobile Data Center Pods provide:

- Rapidly deployable ruggedized pre-loaded modules
- Small, lightweight (10 lbs) interchangeable Processing, Storage, Power and Cooling Blocks
- **Processor Blocks:** Intel x86, AMD x86, IBM Cell & FPGA
- **Storage Blocks:** Hard Disk or Solid State Disk
- 80% less facility cooling energy required
- 80% less electricity consumption than conventional systems. 8-16 times smaller than other servers
- Energy optimized Dynamic Power Management
- Reconfigurable, field upgradeable technology refresh

Lead Dog Technologies, LLC | (719) 330-8371

www.LeadDogEngineering.com | LDT@LeadDogEngineering.com

HIGH-P, LOW-E — COMBINES HIGH-PERFORMANCE AND LOW-ENERGY CONSUMPTION

ECO-Sys Machine models range from the standalone entry-level EVS-1 providing 80 GFLOPs of computational horsepower, up to the EVS-84 with 6,720 GFLOPs of muscle. **ECO-Serv** servers combined with **ECO-Stor** storage systems provide from 10 TB to more than 1,000 TB of high-speed disk storage and 40 Gbps of network bandwidth.

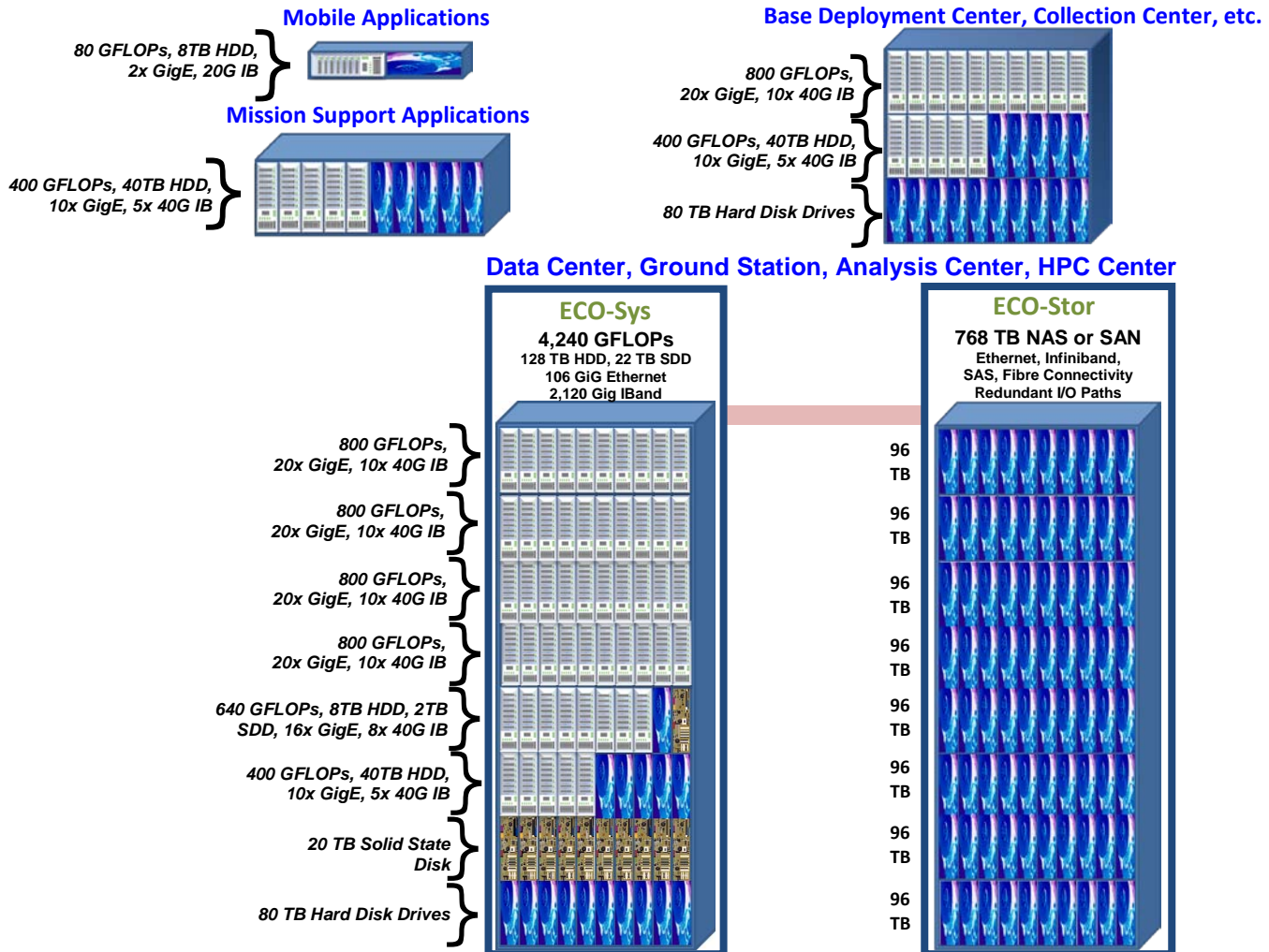
GREEN ECO-Sys MACHINES OVERVIEW

- **Scalable Building Blocks™** from the **80 GigaFLOP “One-half U” Block™** to **6,720 GigaFLOPs** in a standard 19 inch rack.
 - Racks may be clustered incrementally for an unlimited amount of computing capability. For example, 3 Green Machines model EVS-84 systems racks provide 19.65 TeraFLOPs of compute power. Expandable to 2,688 GB RAM.
- **Dynamic Power Management™** – Energy monitoring with rules-driven Dynamic Power On/Off for various server loads, times of the day or energy cost changes.
- **Eliminates or reduces need for computer room air conditioning (HVAC)** – Cool Green modules move heat outside of your data center, thereby reducing or eliminating air conditioning requirements.
- **Low initial cost, low operational cost** – Reduced hardware cost, space, power, cooling, software licenses and administration. Purchase price is typically recovered in less than 3 months of operation.
- **Minimal System Administration** – Green Machines independent Building Block™ modules (processors, storage, power, cooling and networking) are low maintenance and may be independently upgraded to maximize your investment.
- **FPGA Support** – For the ultimate in high-speed scientific computing, the EVS series servers provide Xilinx Field Programmable Gate Array (FPGA) options.
- **Integrated Storage Capability from 8 TB to 768 TB** – Up to 768 TB within a chassis, unlimited expandability with ECO-Stor NAS or SAN systems. Storage Blocks™ available as HDD, Solid State Drive (SDD) or Hybrid options.

COLOR BY SYSTEM CLASSIFICATION, AVOID SECURITY VIOLATIONS

Choose colors or custom graphics to organize systems by security classification to prevent accidental security compromises and security violations, e.g. Green for Unclassified, etc.

OTHER EXAMPLE CONFIGURATIONS Example configurations of ECO-Sys machines are shown below:



Lead Dog Technologies, LLC | (719) 330-8371

www.LeadDogEngineering.com | LDT@LeadDogEngineering.com