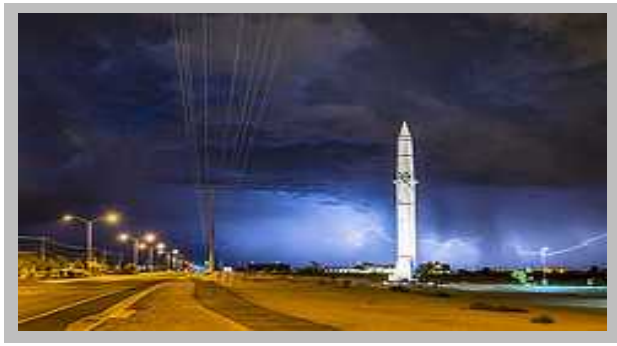
SAND2015-3059C

Exceptional service in the national interest

Sandia National Laboratories





VDI with Dedicated Graphics

Will Carpenter and Bob Malone

U.S. DEPARTMENT OF ENERGY

NNSA National Nuclear Security Administration

Sandia National Laboratories is a multi-program laboratory managed and operated by Sandia Corporation, a wholly owned subsidiary of Lockheed Martin Corporation, for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000. SAND NO. 2011-XXXXP

VDI Project

Sandia National Laboratories

- Provide a new “Diskless” computing solution for that provides increased functionality and improved performance over aging terminal server and diskless offerings
- ~35% of user community requires some level of graphics capability
- Cross Organizational team
  - Representation from: Infrastructure, Storage, Network, Applications, Image Management, and Client/Image Support
- Evaluate and select preferred architecture
  - Reference Architectures, Converged Solutions, Storage, Hypervisor, client hardware
  - Capability purchased with investment dollars

VDI Service Offerings

Sandia National Laboratories

Linked Clone	Persistent	Persistent W/GPU
< 30 second access time	< 30 second access time	< 30 second access time
Client Independence	Client Independence	Client Independence
Linked Clone w/ Persona	Full Persistence	Full Persistence w/ GPU*
Standard COE Apps	COE + user specific apps	COE + user specific apps
2D Graphics	2D Graphics	3D Graphics
Backend VM Mgt (patching)	User patching (automated)	User patching (automated)
Static Image	Administration via RDP	Administration via RDP
$400 Annual Support Fee	$1175 Annual Support Fee	$1175 Annual Support Fee

*We offer three tiers of direct mapped GPU. Demonstrated success supporting Graphics applications from Google Earth up to High End PTC Creo (ProE).

VDI Technology

Sandia National Laboratories

- VDI Success as Value Proposition
  - End User Experience vs TCO
- Key Technology Factors
  - Capabilities 
  - Performance 
  - Stability
  - Availability
  - Scalability 
  - Mobility 
  - Security

VDI Technology - continued

Sandia National Laboratories

- Impacts on the End User Experience
  - Chosen VDI Solution (Virtualization Environment)
  - ★ Compute, Memory, GPU (Virtual Host Servers)
  - ★ Storage (VDI, Data)
  - Network (Datacenter, Edge)
  - ★ Space, Power, Cooling
  - Backups (Data, Environment)
  - ★ Applications (COE, Custom CPU/GPU Intensive)
  - Application Delivery (Embedded, Thinned, Layered)
  - ★ Client Endpoints (Configurations, Peripherals)
  - Related IT Services (AD, Group Policy, DNS, DHCP)
  - ★ Advances in Technology (IT Service Evolution)
    - Benchmarking, Testing, Pilot Programs
  - Technical Support Team(s) and Processes

VDI – Sample Blueprint