Computing Services and Assured Computing

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Chief of Operations
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Overview

- Computing Services
  - Background
  - Computing environment
  - Chain of Command

- Assured computing
  - Defined
  - Data and Software
  - Facilities
  - Communications
  - Processes

- Net-Centricity
- Summary
Mission Statement

Computing Services

“To deliver computing information products and services that enable and enhance the war-fighters’ ability to execute the mission.”
We run IT Systems that:

- provide command and control
- provision ships
- manage transportation
- pay the warfighters
- provide medical care
- manage parts and replenish supplies
- manage maintenance
Our Battlefield

- 3.2 million+ registered users
- 1,400 applications
- 18 facilities
- 180 software vendors
- 18,000+ copies of executive software products
- Virtually every type of mainframe and server
  - 45 mainframes and 4,600+ servers
- Every type of storage device
- Supporting dozens of development activities
- $700 million annual budget
Geographic Locations

- Systems Management Center (SMC) – mainframes and servers
- Processing Element
- Infrastructure Services Center
- OCONUS Defense Enterprise Computing Center (DECC)

Locations:
- Headquarters
- Ogden
- San Diego
- Denver
- Oklahoma City
- Rock Island
- Columbus
- Dayton
- NCR
- Mechanicsburg
- Chambersburg
- Norfolk
- Warner Robins
- Pensacola
- Jacksonville
- Puget Sound
- Hawaii
- Pacific
- Europe
Workloads by Customer

- Air Force: 26%
- Army: 6%
- DISA: 12%
- DFAS: 17%
- DLA: 14%
- Navy: 9%
- Health Affairs: 9%
- Marines: 1%
- Other: 6%
Defense Information Systems Agency
Director, Lt Gen Charles E. Croom Jr.
Vice Director MG Marilyn Quagliotti

Global Information GRID Combat Support
Principal Director, Mr. Gene Stefanucci

Center for Computing Services
Directorate
Director, Mr. Alfred Rivera

* DECCs
System Management Center (SMC)
Processing Element (PE)
Infrastructure Services Center (ISC)
OCONUS Enterprise Computing Center (DECC)

Engineering & Architecture Division
Logistics Division
Operations Division
Business Management Center (BMC)
Programs & Implementation Division

Central Communication Center (CCC)

(* Defense Enterprise Computing Centers)
Pre-Transformation Reporting Chain

Inherited DIVERSITY of 194 SITES
SECDEF designated DISA Director as Commander, JTF-Global Network Operations

One Team, One Fight
Assured Computing
• The last two decades --
  – Increasing day-to-day reliance on IT by warfighter
  – Information has become fundamental to prosecution of the nation’s will
    • Inextricably threaded into warfighter processes
    • Enables joint task force deployment, employment, sustainment

• Warfighter IT support today
  – A single system of data processing
  – Systems known as “combat support” now essential to successful combat operations
“We need to prevent disruptions, and when they occur, we need to make sure they are infrequent, short, and manageable.”

*Thomas Ridge, Director of Home Security Act*
Non-disruptive service to the end user, achieved through reliable, secure, and virtualized processing and networking environments.
Assured Computing

The Pillars
- Processes
- Communications
- Data Availability
- Software
- Facility

The Foundations
- Capacity on Demand
- Smart Sourcing
- Enterprise Acquisition
- High Bandwidth Communications
Assured Computing

System Availability

Processes
Communications
Data
Software
Facility

Capacity on Demand
Smart Sourcing
Enterprise Acquisition
High Bandwidth Communications
Data and Application Replication

- **Unisys mainframes**
  - Application and data replication between DECCs operational since Dec 2001
    - 24 TB < 2 min data loss

- **IBM mainframes**
  - Application and data replication between DECCs operational since Sep 2005
    - 83 TB < 1 sec data loss
    - Also includes backup CPUs, capacity for production and testing, silo capacity, and peripheral support

- **Servers** – case by case
Mainframe Example

Unisys

DECC Ogden

Unisys Dorados

Production

EMC Frames

Storage

Comm equipment

Remote site’s data
Production data

SRDF over IP
(1 DS3)

Wide Area Network

Unisys Dorados

Fail-over Production processors

DECC Oklahoma City

Unisys Dorados

Production

EMC Frames

Storage

Comm equipment

Remote site’s data
Production data

All Applications and Data
Server - Example 1

Air Force Depot Maintenance

DECC
Oklahoma City
Primary

DECC
Warner Robins Failover

Web and Application Servers

External Interfaces

Mirrored Disk Array

OO Data
OC Data
WR Data

OO Data
OC Data
WR Data

Dataguard
Ahlta (Military Health Care System)
Assured Computing

System Availability

Processes
Communications
Data Availability
Software
Facility

Capacity on Demand
Smart Sourcing
Enterprise Acquisition
High Bandwidth Communications
Typical DECC Facility

DECC Oklahoma City

98,000 square feet; 68,500 of raised floor
Power Infrastructure

DECC Oklahoma City (as a typical DECC)

- Sub Station A 12,470 Volt Feed
- Automatic Transfer Switch
- Sub Station B 12,470 Volt Feed
- 1200 Batteries/5000 kVA UPS
- UPS Control Panel
- Main Switch-Gear
- Four 1750 kW Diesel Generators
- 22k Gallon Fuel Reserve
Facilities Environment

DECC Oklahoma City (as a typical DECC)

- Engineered fault tolerant, high availability
  - Four, 350-ton chillers and cooling towers provide 100 percent redundancy
  - 40 air units distribute conditioned air throughout facility
  - Power distributed to 25 power distribution modules
  - Dual, independent electrical feeds to each platform, - each platform with dual power supplies

- “Smart” automated facility management system
  - Moisture, under floor water, temperature sensors and alarms
Facility Security

- **Physical Security**
  - 24 x 7 Security Guards
  - Controlled/Alarmed Access
  - Security Cameras

- **Information Assurance**
  - Security Professionals
  - DoD/NSA Compliant Policies and Tools
  - Security Readiness Reviews
  - Network Monitoring / Intrusion Detection
Wide Area Network

DECC Oklahoma City (as a typical DECC)

- Vendor Diversity (COX + SBC)
- Path Redundancy
- Self-healing fiber architecture
- High bandwidth (OC192)
• Local Infrastructure
  – Redundant DISN hubs
  – Redundant NIPRNet core routers
  – Fault-tolerant internal routers and switches
  – Gigabit switching
  – Multiple Virtual Private Network implementations
  – Redundant SIPRNet connections
  – Separate management VPN
“Process” Tenants

- Virtualized management: technical capability
  - From any location (secure)
  - Of all platforms/comms at any location (secure)

- Virtualized systems management: staff
  - Application, operating system, database, & communications expertise hot “failover”
  - Help desk hot “failover”

- COOP/BCP
  - Systems, sites, headquarters
  - Tested until SOP
( = Net-Centricity )

Within Computing Services:
- Geographic location has become irrelevant
- Management from anywhere is SOP

because we are
Supporting Net-Centric Warfare
Who We Are
What We Do
Why We’re Here

Which Is
Assured Computing provides:

- Net-centric computing and operations
- Customer service and support
- Information mart
  - Data availability
  - Data integrity
  - Data accessibility
  - Data recovery
- Content to the ‘Edge’, around the globe

**Always “there” exactly when needed!**