

Storage Services  
Infrastructure Services

Backup Services

Support

Non-Profit

Disaster Recovery

Security Services

Services

Florida Lambda Rail

40-Years

Innovation

Colocation

Server

Cloud

Connectivity Technology

Cost Recovery

Data Center

NWRDC

Network Services

Mainframe

# Community Clouds

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# Once upon a time....

- ❖ Big iron was a shared environment

- ❖ Laid the groundwork for today's

environment, with virtualization

introduced on the mainframe in the

mid 1960's with IBM System/360 Model 67



# Change in Technology models

- ❖ Move to client-server computing
  - ❖ Computing power and workload is distributed
- ❖ Move to web-based computing
  - ❖ Smaller footprint needed at the desktop, but workload is still distributed
- ❖ Cloud computing
  - ❖ Core systems are...somewhere....

# However...

- ❖ So easy to deploy, did we create “server sprawl”?
- ❖ System silos?
  - ❖ Application or political?
- ❖ Some shared infrastructure
  - ❖ Storage
  - ❖ Database servers (but not always)

# Rediscovery of virtualization...

- ❖ Provides isolated environments for applications
- ❖ Creates generic platforms for systems, allowing greater portability

# Rediscovery of virtualization...

- ❖ Allows resource “ceilings” to be assigned
- ❖ Consolidates and combines workloads on systems, recovering wasted computer cycles
  - ❖ less power consumption, less heat

# Full circle...

- ❖ Rediscovery of Cloud
- ❖ This is no different than the shared mainframe model of 40 years ago



# Types of Clouds

- ❖ Public
- ❖ Private
- ❖ Community
- ❖ Hybrid

# Public Clouds

- ❖ Multiple client types
- ❖ Greater resource sharing
- ❖ Concerns over data\client separation
- ❖ Concerns over data location and control

# Private Clouds

- ❖ Single organization
- ❖ Greater control
- ❖ Greater cost, as it is a dedicated infrastructure
- ❖ Can result in idle, wasted resources

# Community Clouds

- ❖ Shared by multiple organizations of a common type or mission
- ❖ Greater focus on security
- ❖ Common type of controls
- ❖ Resource sharing

# Hybrid Clouds

- ❖ A mixture of the other three....
- ❖ For sake of this discussion, a community cloud that pulls in public resources is still considered a community...

# Northwest Regional Data Center



Located in Tallahassee, Florida, NWRDC was founded in 1972 as one of four regional data centers serving State University System of Florida. We have been providing services for over 40 years.

Data Center  
**NWRDC**

# NWRDC: Who we are...

- ❖ Operates as a 100% self funding auxiliary of Florida State University
- ❖ Provide services to universities, colleges, K12, as well as city, county, and state government entities
- ❖ NWRDC was designed and engineered to be a state-of-the-art data center that could guarantee customers' security, accessibility and connectivity

# NWRDC: Who we are...

- ❖ Shared governance
  - ❖ Organizationally report to Assoc. VP & CIO of FSU, Michael Barrett
  - ❖ Operationally report to a Board comprised of our customers (Chair, Mehran Basiratmand, CTO of FAU)
  - ❖ Shared Governance is the KEY to success.



# NWRDC: In the beginning...

- ❖ Founded in 1972 as 1 of 4 regional data centers to provide shared computing facilities for the State University System
- ❖ Expanded to serve state agencies in 1976

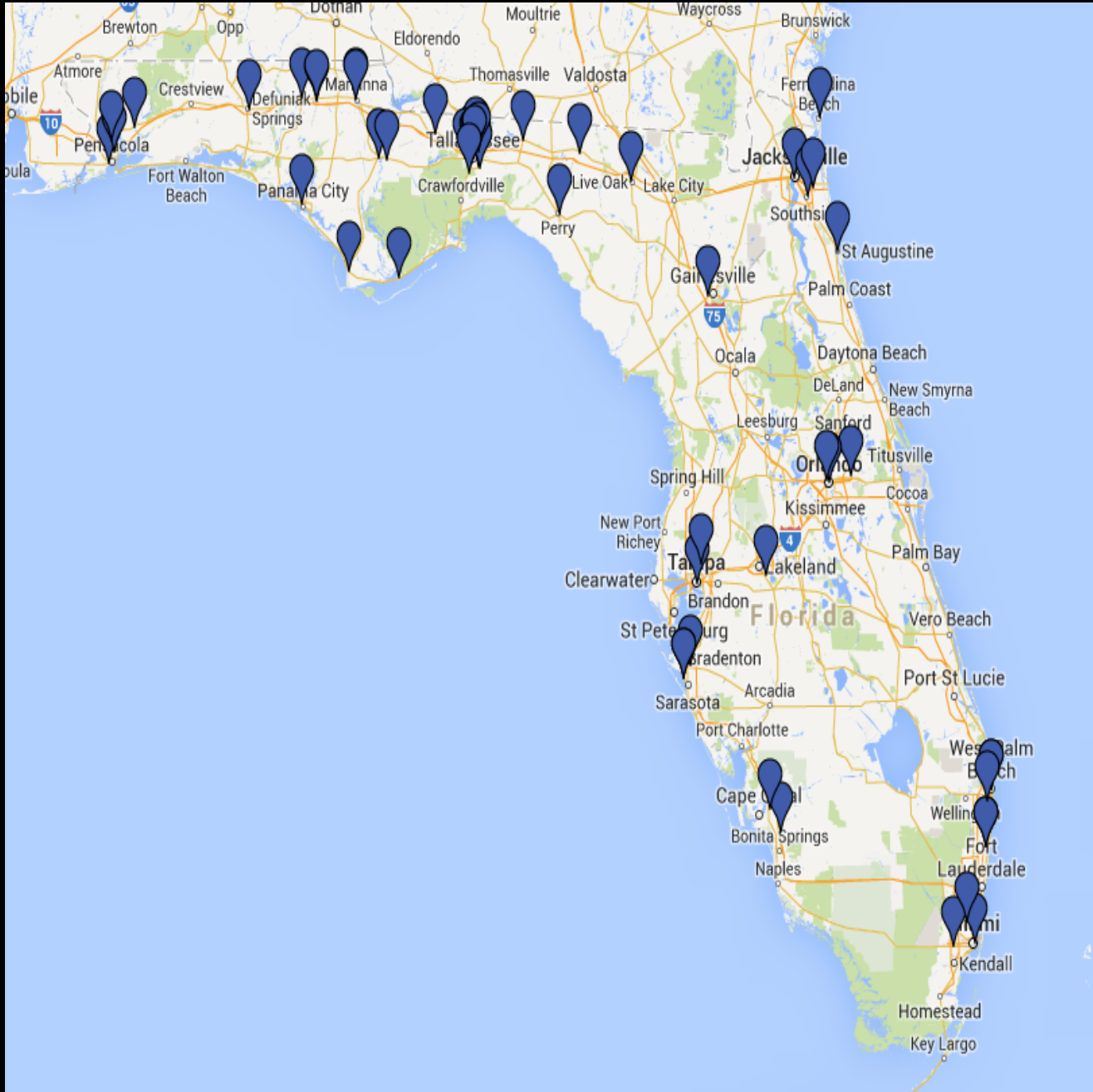
# NWRDC: In the beginning...

- ❖ FAU housed ERP systems on NWRDC mainframe
- ❖ In the distributed system model, FAU moved to local implementation of Banner, with NWRDC as its DR site

# NWRDC: Board

- ❖ Board meets quarterly
- ❖ Management subcommittee meets monthly
- ❖ Other ad hoc committees as needed
- ❖ All Board members are customers

# Customer Distribution



Data Center  
**NWRDC**

# NWRDC Services

- ❖ Server Hosting
  - ❖ Collocation and Disaster Recovery site (hot, warm, or cold)
  - ❖ Managed services
- ❖ Storage on Demand
  - ❖ Capacity on Demand
  - ❖ IOPS (Performance) on Demand
  - ❖ Backup as a Service

# NWRDC Services

- ❖ Cloud Infrastructure as a Service
- ❖ Mainframe Hosting
  - ❖ Primary application hosting
  - ❖ Application “sun setting”
- ❖ Tallahassee Fiber Loop
  - ❖ Connectivity to the FLR (10Gb)

# NWRDC Cloud

- ❖ Cloud Infrastructure as a Service
  - ❖ Storage
- ❖ Backup as a Service

# NWRDC Advantages

- ❖ Can achieve great pricing when large # of customers using a service
- ❖ Handle the utility computing stuff, freeing up customer to concentrate on more specific needs



# NWRDC Advantages

- ❖ By working together, we can implement services that would be very difficult\expensive for organizations to do on their own
- ❖ More leverage in contract negotiation

# NWRDC Disadvantages

- ❖ Since we are self-funded, there is no “seed” money to start a service
- ❖ While customer 4,5,6 are easy, customer 1 ,2 are difficult

# NWRDC Disadvantages

- ❖ Commercial organizations are not really our biggest competition
  - ❖ Internal IT staff reluctant to give up “the fun stuff”
  - ❖ Customers sometimes think of us as a commercial organization

# NWRDC Future?

- ❖ Contract Management
- ❖ License Management
- ❖ Application management
  - ❖ DBA?

# Thank You

## Questions?

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**NWRDC**

# References

- **Above the Clouds: Managing Risk in the World of Cloud Computing; Kevin T. McDonald**
- **NWRDC Charter,**  
**<http://www.nwrdc.fsu.edu/nwrdc/northwest-regional-data-center-charter>**