



# IT Emergency Preparedness: Data Preservation and Business Continuity




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## BC/DR Objectives

- Support business continuity and preserve critical IT data in the face of a disastrous event
  - Leverage participation in the Florida LambdaRail to utilize a remote site outside Florida (and inland!)
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## What is Florida LambdaRail?

Florida LambdaRail (FLR) is a statewide high-bandwidth optical network that supports large-scale research, education outreach, public/private partnerships, and information technology infrastructure essential to Florida's economic development.






## Florida LambdaRail

- The underlying optical infrastructure is owned by FLR equity Members - FAU, FIT, FIU, FSU, NSU, UCF, UF, UM, UNF, UWF.
  - FLR is deployed over 1540 miles of fiber with nodes in Pensacola, Tallahassee, Tampa, Miami, Orlando, Gainesville, Melbourne, Ft. Lauderdale, and Jacksonville.
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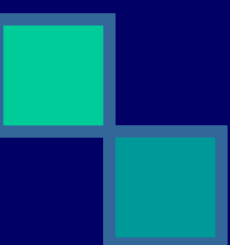



## Florida LambdaRail

- Each Equity Member is provided with a primary 10 Gbps, and a secondary 1 Gbps, connection to the FLR backbone
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## National LambdaRail

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- Florida LambdaRail (FLR) is one of the regional research networks that are members of the NLR (equity investor)
  - NLR/FLR interconnections are located in Jacksonville and [planned for] in Pensacola
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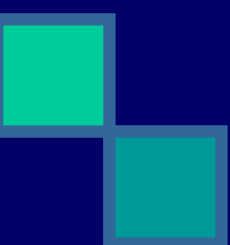


## FLR/NLR


- FLR is an equity investor in the NLR
  - FLR provides a 10 GE wavelength across NLR to ATL for member access to Internet2 and other services (including data backups)
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## The FLR/NLR Model



Equity ownership of networking infrastructure, coupled with the NLR access to services in Atlanta, allows for affordable bandwidth at a scale making it feasible to perform high volume remote backups of critical operational data and to provide for continuity of essential IT services should a disaster occur at our primary site.






## Mixed Solution

- Legacy mainframe applications
  - Newer server-based applications
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## Legacy Mainframe Applications

- NWRDC is a state-wide regional data center established to provide computing services to Florida K-20 entities on a cost recovery basis
  - Hosts applications requiring a traditional IBM mainframe environment
  - Utilizes a traditional BC/DR strategy contracted through IBM Business Continuity Recovery Services (BCRS)
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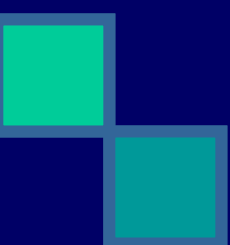



## Scope of FLR/NLR Solution

- All centrally provided services not hosted on the Data Center mainframe (server-based applications)
  - Encompasses various Unix environments, data bases, Windows, VMware and other systems
  - Includes Instruction, ERP and administrative services
  - Complements and extends legacy mainframe applications when applicable
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## Planning Imperatives

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- Start with a BIA (Business Impact Analysis)--include all stakeholders
  - Establish appropriate RPO and RTO
  - Prioritize - deliver only truly essential services from the remote site
  - Protect critical data by making remote copies of all backups performed at the central site
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## Aspects of FSU's Plan (as an example)

- RPO (Recovery Point Objective) identified to be recovering data which is no more than 24 hours old post event
  - RTO (Recovery Time Objective) identified to be resuming critical services within no more than 48 hours post event
  - TSM (Tivoli Storage Manager) selected as the standardized backup method
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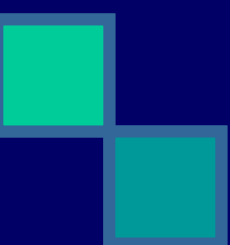

## Aspects of FSU's Plan (as an example)

- Remote on-disk copies of certain key data are synchronized directly with running production systems (Bb, DNS, Directory info)
  - Centralized backup services, including automatic remote backup, will be offered to other campus units
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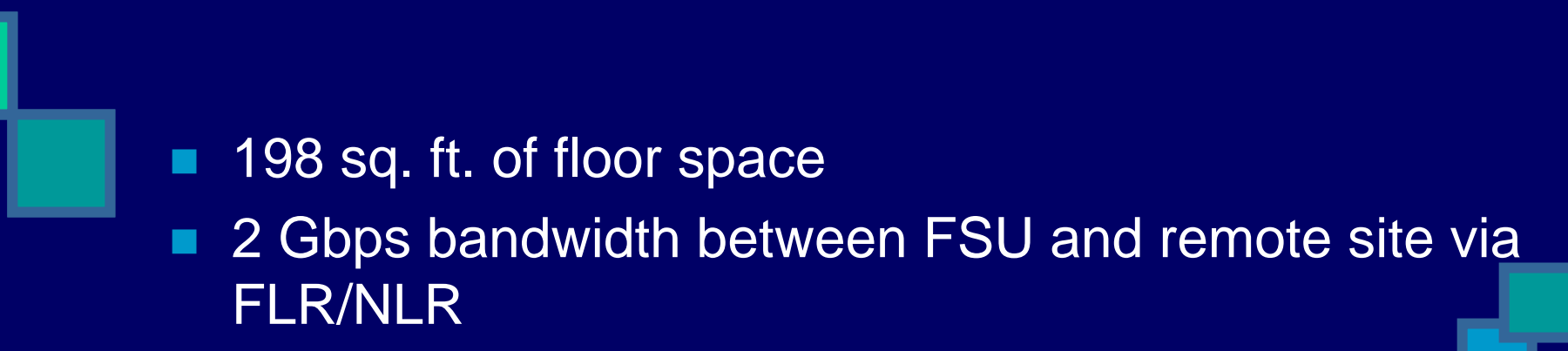
# Critical IT Services

(as identified at FSU)

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- [www.fsu.edu](http://www.fsu.edu)
  - Blackboard course management system
  - Directory Services
  - Automatic e-mail forwarding from FSU addresses to pre-determined non-FSU addresses
  - PeopleSoft HR and Financials
  - Web-based middleware access to mainframe-hosted services
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## FSU's Remote Site Configuration

- 198 sq. ft. of floor space
  - 2 Gbps bandwidth between FSU and remote site via FLR/NLR
  - Storage Area Network (SAN) with 10 TB disk storage,
  - 8 tape drives and 500 TB tape library
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## IT Recommendation

Each SUS institution maintain appropriately current copies of all mission-critical data and an appropriate set of mission-critical applications in one or more secure off-site locations sufficient to continue business operations in the aftermath of a disaster event



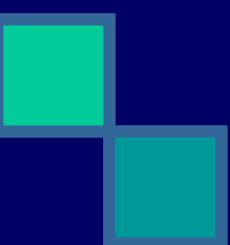



## One Possible LBR

- Estimated for a SUS DR/BC plan on the order of the FSU Model to include:
    - Remote backups
    - Essential IT services (limited capacity)
    - Facility costs
    - Hardware, Software, Network, Maintenance
    - 10 Institutions
  - 5 year ballpark cost: \$15-19M (1/2 in first year)
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## Assumptions Behind the Cost Estimates

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- Each institution will have its own dedicated equipment and network connection through FLR
  - Will add a second 10 GE connection through FLR/NLR
  - Equipment would be housed in same facility as FSU's
  - Aggregate transfers per day of ~20 TB
  - 6 institutions with a cost similar to FSU + 4 institutions with cost 1/2 of FSU = low end estimate (\$15M)
  - 10 institutions with cost similar to FSU = high end estimate (\$19M)
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## Exposure/Cost of NOT Doing This

- Difficult to assign a monetary cost
  - Puts university operations at risk
  - University reputation is at risk
  - Responsibility/obligation to students and their families
  - We live in Florida – it's not “if,” it's “when!”
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Questions?

