



*Florida's Department of Health
Bureau of Laboratories
Presents*

Implementation of PHIN Standards within Florida's PHL Infrastructure

**PHIN Conference – Atlanta, GA
May 24-27, 2004**



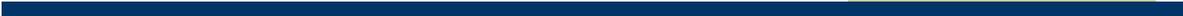
Today's Discussion



- Florida's PHL Background information
- Implementing the nine PHIN Functions and Specifications in Florida
- Some Challenges ...
- Also Benefits...
- Questions/Ideas?



Florida's PHL—Background



- ❑ The Bureau of Laboratories (BOL) provides services to 67 County Health Departments (CHDs) operating over 150 clinic sites, and to numerous community health clinics, hospitals, and private physicians across Florida.
- ❑ The BOL consists of five laboratories, located in Jacksonville, Lantana, Miami, Pensacola, and Tampa. We employ more than 300 workers Statewide.
- ❑ We test some 3.5 million specimens annually, testing services include Clinical Testing, Lead Screening, Newborn Screening, and Environmental Chemistry and Microbiology test services.



Background about Florida's PHL

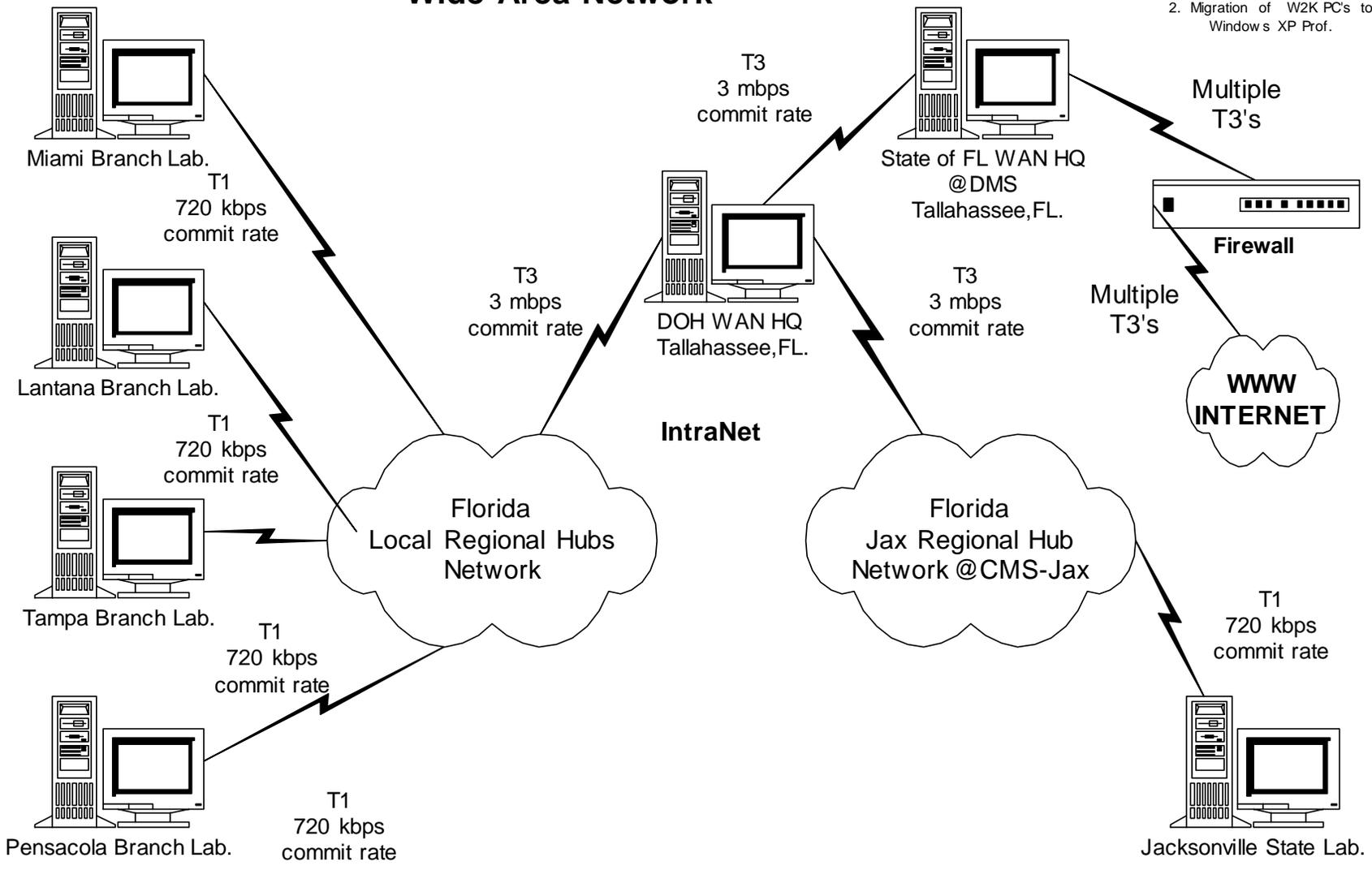
- ❑ The Florida Department of Health utilizes an Integration Broker, commonly known as *Cloverleaf* for electronic exchange of laboratory and billing data.
- ❑ Disaster Preparedness—Individual labs communicate via the DOH WAN, however our information systems can all be operated without WAN availability if required.
- ❑ System architecture includes hardened production servers at each lab, and redundant mirrored database servers for published results.
- ❑ SQL-Server Merge replication is used to replicate data.
- ❑ WAN Bandwidth is finite and must be considered throughout system design and implementation.

Bureau of Laboratories Wide Area Network

As of 5/06/2004:

IN PROCESS Upgrades

1. Migration of 98 PC's over to Windows 2K & A.D. Domain.
2. Migration of W2K PC's to Windows XP Prof.



IntraNet

WWW INTERNET

Firewall

Multiple T3's

Multiple T3's

T1
720 kbps
commit rate

T3
3 mbps
commit rate

T3
3 mbps
commit rate

T3
3 mbps
commit rate

T1
720 kbps
commit rate

Florida
Jax Regional Hub
Network @CMS-Jax

Florida
Local Regional Hubs
Network

State of FL WAN HQ
@DMS
Tallahassee, FL.

DOH WAN HQ
Tallahassee, FL.

Miami Branch Lab.

Lantana Branch Lab.

Tampa Branch Lab.

Pensacola Branch Lab.

Jacksonville State Lab.

Nine PHIN Functions and Specifications

Putting Processes
In Place





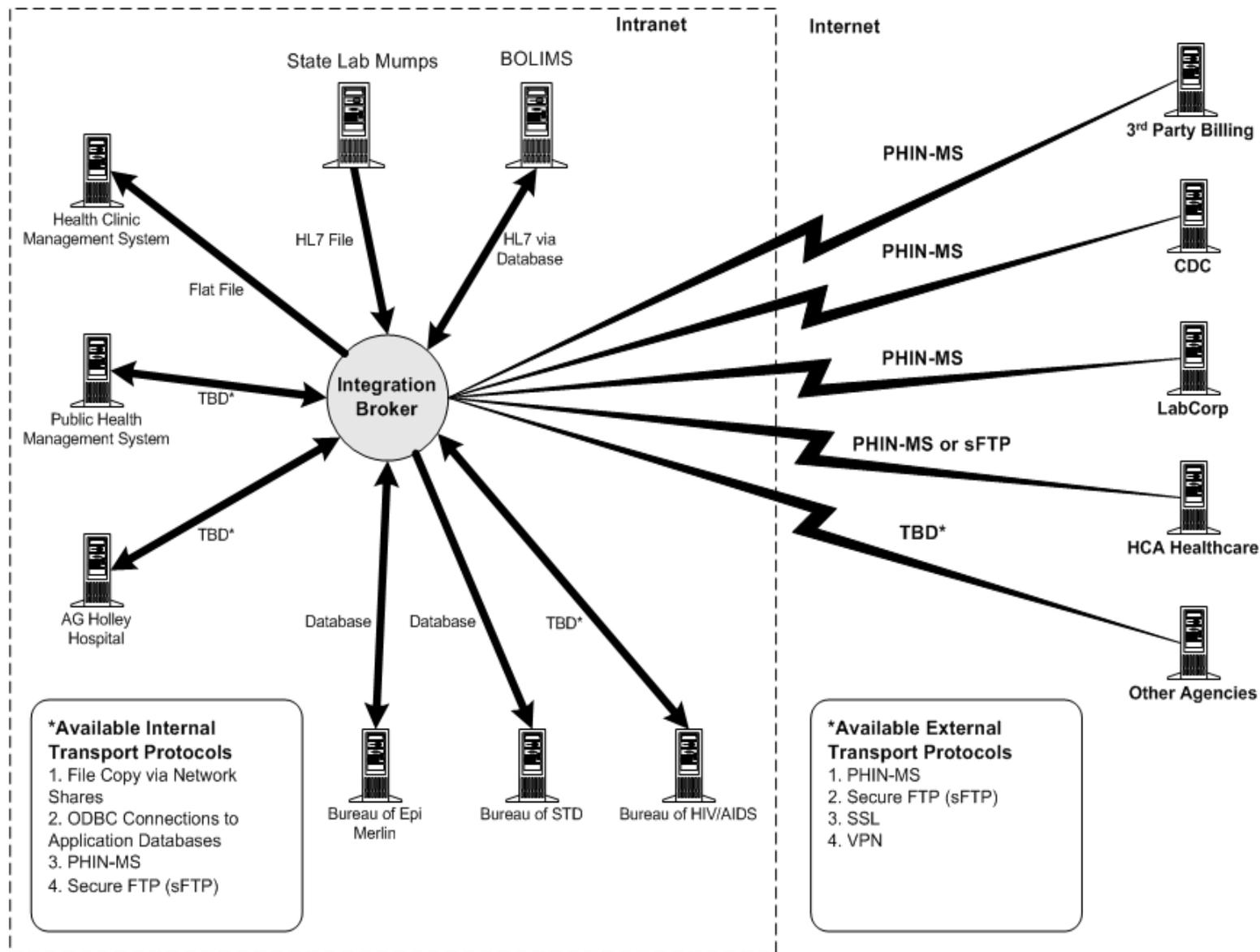
Implementing the Nine PHIN Functions and Specifications

#1 – The Automated Exchange of Data between Public Health Partners

- HL7 Messaging Code Sets and Transactions
 - Implemented Reportable Disease Format (Ver 2.3.x)
 - Jointly developed Chemical Terrorism/BioTerrorism Data Connectivity Format with the CDC (Ver 2.4)

- PHIN-MS for secure data communications exchange
 - PHIN-MS Client Installation – complete (*Cloverleaf* outbound to CDC)
 - PHIN-MS Server Installation - complete by May 2004

Lab Request & Result Source/Recipient Interaction





Implementing the Nine PHIN Functions and Specifications

#2 – The Use of Electronic Clinical Data for Event Detection

- ❑ *Cloverleaf* Integration Broker - Routing and distribution of lab results to ordering physicians and other partners in a near real-time.
- ❑ The integration broker also performs translation of proprietary and standard data formats (HL7, X12, X12 Small Pox/HIPAA, NCPDP, ASTM, ASAP, UN/Edifact, XML, etc.) either into another format, or into a DOH internal form for standardized internal data exchange.



Implementing the Nine PHIN Functions and Specifications

#2 – The Use of Electronic Clinical Data for Event Detection (cont)

- ❑ The broker behaves as a traffic controller, managing data flow, and assuring “Once and only Once” delivery of data. It is also the enforcer and library for data exchange business rules used for routing and delivery of health data.
- ❑ Cloverleaf is a security guardian, it that it provides encryption, user authentication, audit logs, controlled access, proactive monitoring, and alert management services.
- ❑ Florida DOH is implementing a PHIN-MS server, with plans to discontinue use of the PHILS application for event detection.



Implementing the Nine PHIN Functions and Specifications

#3 – Manual Data Entry for Event Detection and Management

- ❑ Patient information, test request, and other data such as risk factors, contact information, etc. will be captured at the source (clinic sites) via the *Lab Module* of Florida's new Public Health Management System (PHMS) and packaged as PHIN compliant HL7 messages and sent via the integration broker.
- ❑ The integration broker will route lab test requests to the labs, and patient, condition, and risk/contact data to additional DOH patient care and surveillance systems. Lab results will be processed by the broker to provide automated event notification through application of our trading partner's rules.



Implementing the Nine PHIN Functions and Specifications

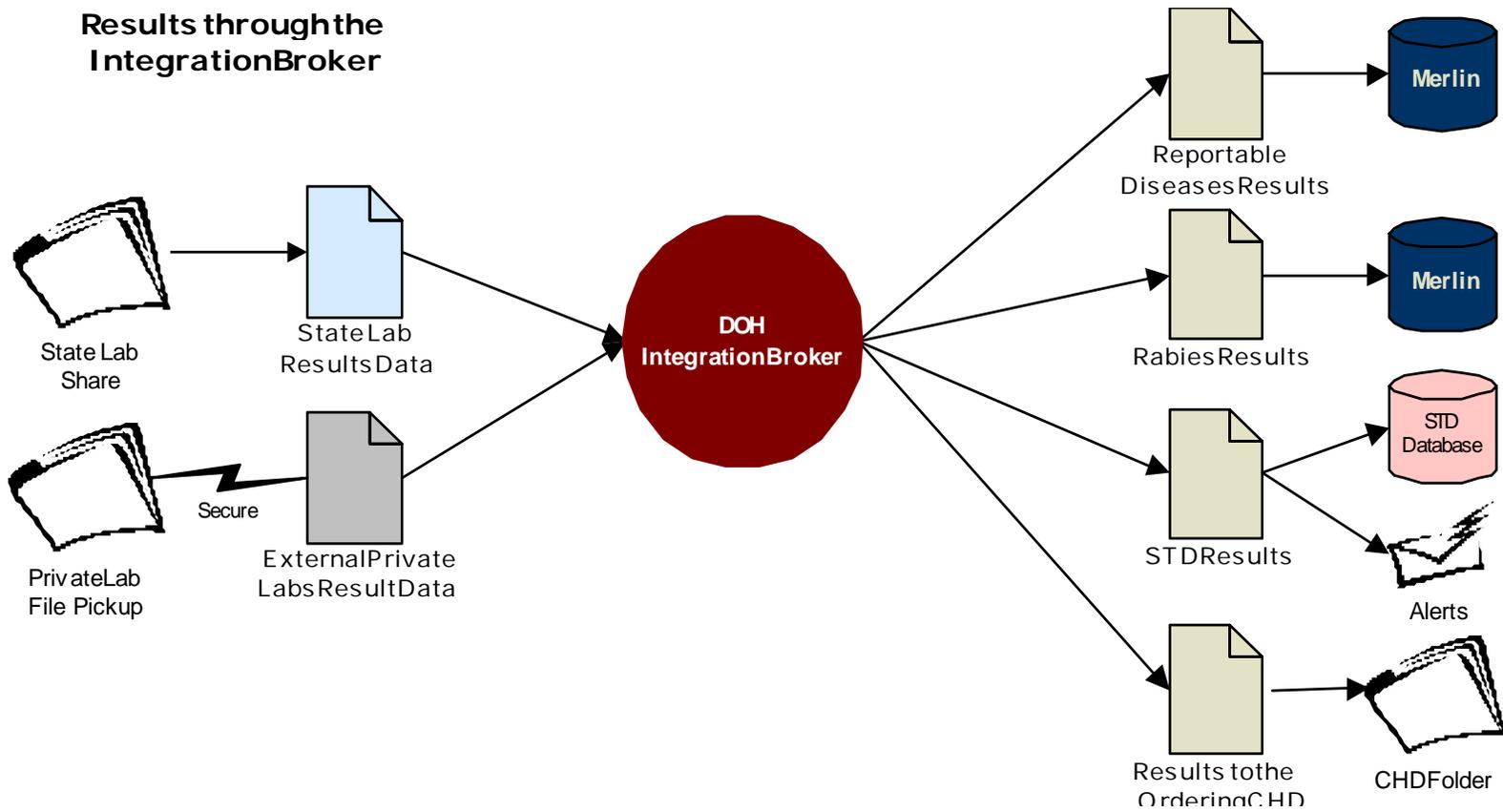
#4 – Specimen and Lab Result Information Management and Exchange

Separation of Data Storage

- De-identified production data is held separately and is only accessible to laboratory technicians and managers. Upon final approval test results are *published* to a read-only, “HL7-Friendly” database where they are added to their master record’s result collection.
- Published results will be exposed as aggregate, limited data sets for summary analysis; and individually in both de-identified and identified form for case management, surveillance, and other public health activities.



Results through the IntegrationBroker



Implementing the Nine PHIN Functions and Specifications

#5 – Management of Possible Case, Contacts and Threat Data

- ❑ In Florida this function is performed by a “program office” specifically our Bureau of Epidemiology. The Laboratories of course have significant participation and investment in this function, however we are not the driving force behind the implementation of this function (officially/sort of...).

PFHL7M²





Implementing the Nine PHIN Functions and Specifications

#6 – Analysis and Visualization

- BOLIMS will provide controlled access to published result data through views and parameterized stored procedures to permit any authorised user to obtain filtered record sets based upon a wide variety of selection criteria.
- Data will be available in de-identified form with all unique patient identifying information redacted, or for appropriately authorised personnel with patient information intact.
- Analysts and case managers will be able to use their tools and skill sets to manipulate data into the information they need.

Implementing the Nine PHIN Functions and Specifications

#7 – Directories of Public Health and Clinical Personnel and

#8 – Public Health Information Dissemination and Alerting

- ❑ Certainly vital to Public Health, however not laboratory specific functions, the Florida DOH has a number of initiatives planned and underway to meet these goals.

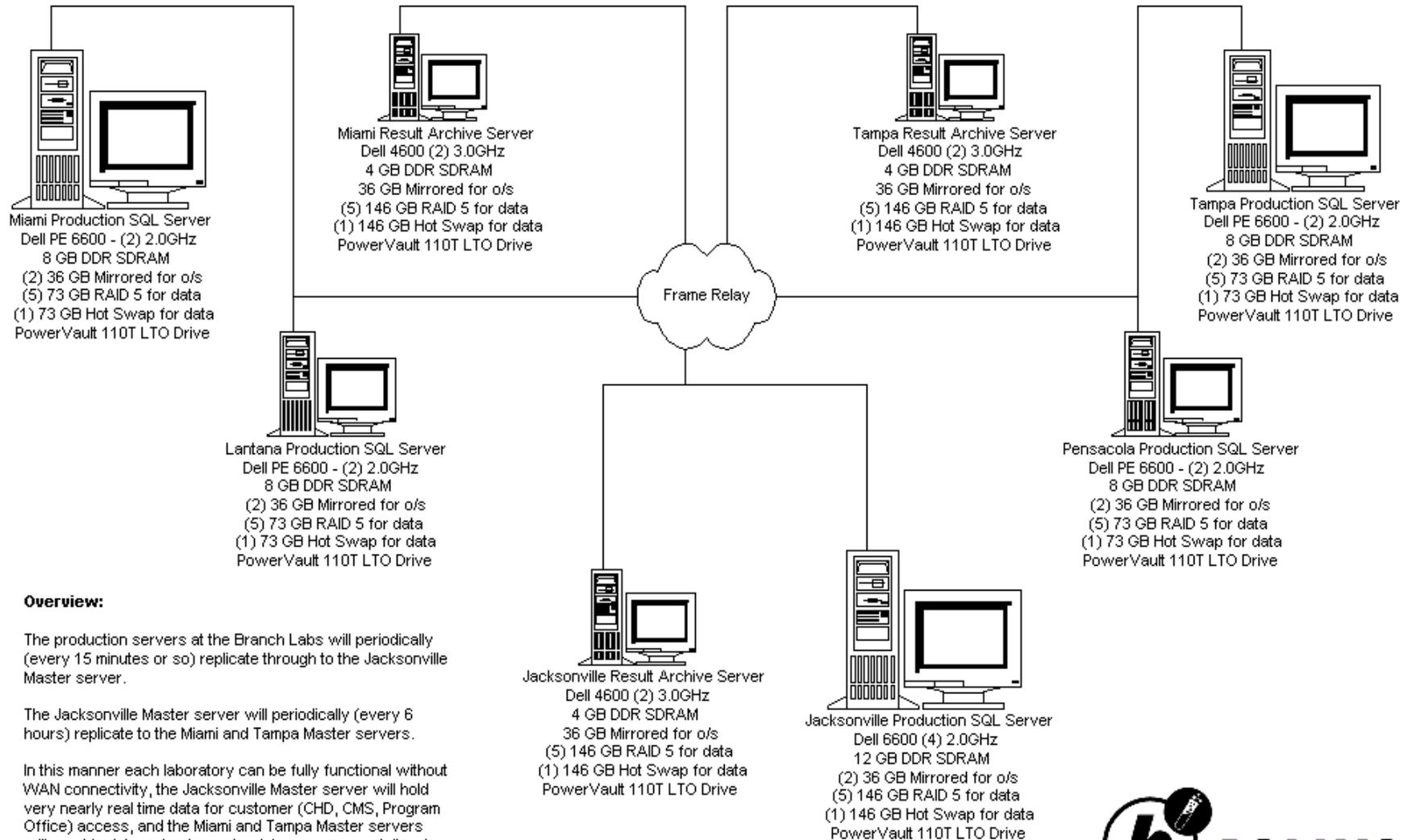


Implementing the Nine PHIN Functions and Specifications

#9 – IT Security and Critical Infrastructure Protection

- Secure network – DOH firewall, managed routers, Active Directory authentication for all access, automated or interactive.
- Use of strong encryption for selected internal and all external communications involving confidential and/or protected data.
- LIMS systems at five locations Statewide can operate in fully standalone manner with total WAN independence,
- Published results and other critical data are stored redundantly in Jacksonville, Miami, and Tampa via SQL Server replication and scheduled data file transfers.

BOLIMS Server Configuration



Overview:

The production servers at the Branch Labs will periodically (every 15 minutes or so) replicate through to the Jacksonville Master server.

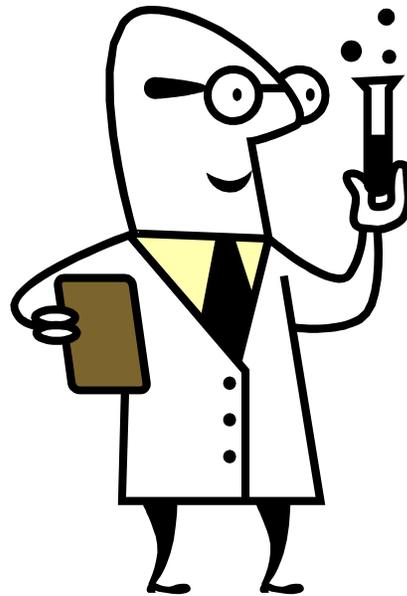
The Jacksonville Master server will periodically (every 6 hours) replicate to the Miami and Tampa Master servers.

In this manner each laboratory can be fully functional without WAN connectivity, the Jacksonville Master server will hold very nearly real time data for customer (CHD, CMS, Program Office) access, and the Miami and Tampa Master servers will provide data redundancy for data recovery and disaster recovery/continuation of business. An isolated T1 will be used for replication.



Some Challenges ... but Great Benefits

in Implementing PHIN
Functions in your PHL



Some Challenges ...

There will be Challenges...

- ❑ Standards are sometimes (sometimes?) difficult to implement
 - Technologically, due to database constraints of legacy systems and/or implementations
 - Systematically, due to user resistance (“Now we’ll have to learn something new”, “That’s NOT the way we do it”, “We don’t have the time”, etc.)
- ❑ Planning and implementation of transitions from legacy to PHIN compatibility can be an overwhelming “where do we begin”, process loaded with roadblocks and paradox.
- ❑ Funding (duh!)



but Great Benefits...



However, there will be one BIG benefit for us all...

- ❑ The use of standard data packaging formats, code sets, and vocabularies will eliminate the constant translations from “my” system to “your” system that have been perennial roadblocks to establishing a national public health information network.
- ❑ Their use will enable free interchange of information, and provide more accurate and reliable information ,through the elimination and reduction of data transformation, reformatting, re-packaging, and worst of all re-keying...
- ❑ Adoption of the PHIN standards will provide us all the ability to exchange data freely within our departments, and with our national public health partners using universal and readily extensible information sharing systems.

Feel free to Contact Us...



**Florida Department of Health
Bureau of Laboratories
1217 Pearl Street
Jacksonville, FL 32202**

**Cliff Knight
Director, Laboratory Informatics
904.791.1562
clifford_knight@doh.state.fl.us**

**Anna Dennis, Project Manager
904.791.1565
anna_dennis@doh.state.fl.us**