High Availability & Disaster Recovery with Instrument Manager

Safeguard your lab with always-on continuity

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Reminders

- Phone lines will be muted
- Chat questions into me at any time
- Must have an 83% participation in order to receive PACE credits
- PACE certificates will be emailed to you Wednesday

Upcoming Webinars & Virtual Events

COVID-19 Rapid Response Platform: End-to-end integration for COVID-19 instruments, results, and the LIS

Oct. 28, 2020

10:00 AM PT /1:00 PM ET

Virtual Thought Leadership Event

The Lab's "New Normal": Thought Leadership to Navigate and Embrace Industry Change

Nov. 12, 2020

10:00 AM PT /2:00 PM ET

COVID-19 News Summary

Current trending topics

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COVID-19 News
Current trending topics

Seasonal Preparation

Laboratory Testing Volumes and Supplies

Individual vs Multiplex testing

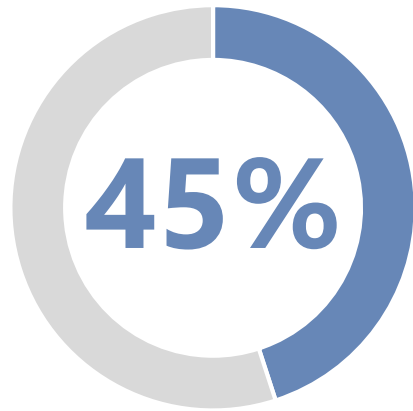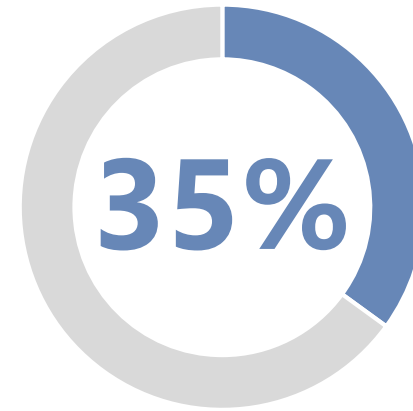Bio Safety Levels

Shipping of specimens

Unplanned outages happen

45%

caused by hardware failure

35%

caused by loss of power

Potential cost of an unplanned outage **$926 to $17K+** per minute

What if you could reduce risk?

- Better assure IM system availability

- Prevent impact to patient care

- Protect lab operations and productivity

Instrument Manager forms the foundation of lab operations

- Manages connectivity from instruments to LIS

- Supports clinical operations to analytics

Connectivity

Productivity

Quality

Performance & Reliability

Analytics & Intelligence

Support, Consulting, & Training

What is High Availability?

High Availability is a characteristic of a system which aims to ensure an agreed level of operational performance, usually uptime, for a higher than normal period. (source: Wikipedia)

High Availability with Instrument Manager utilizes Intersystems Mirroring Technology with automatic failover to enable.

Infrastructure you can count on for systems issues small and large
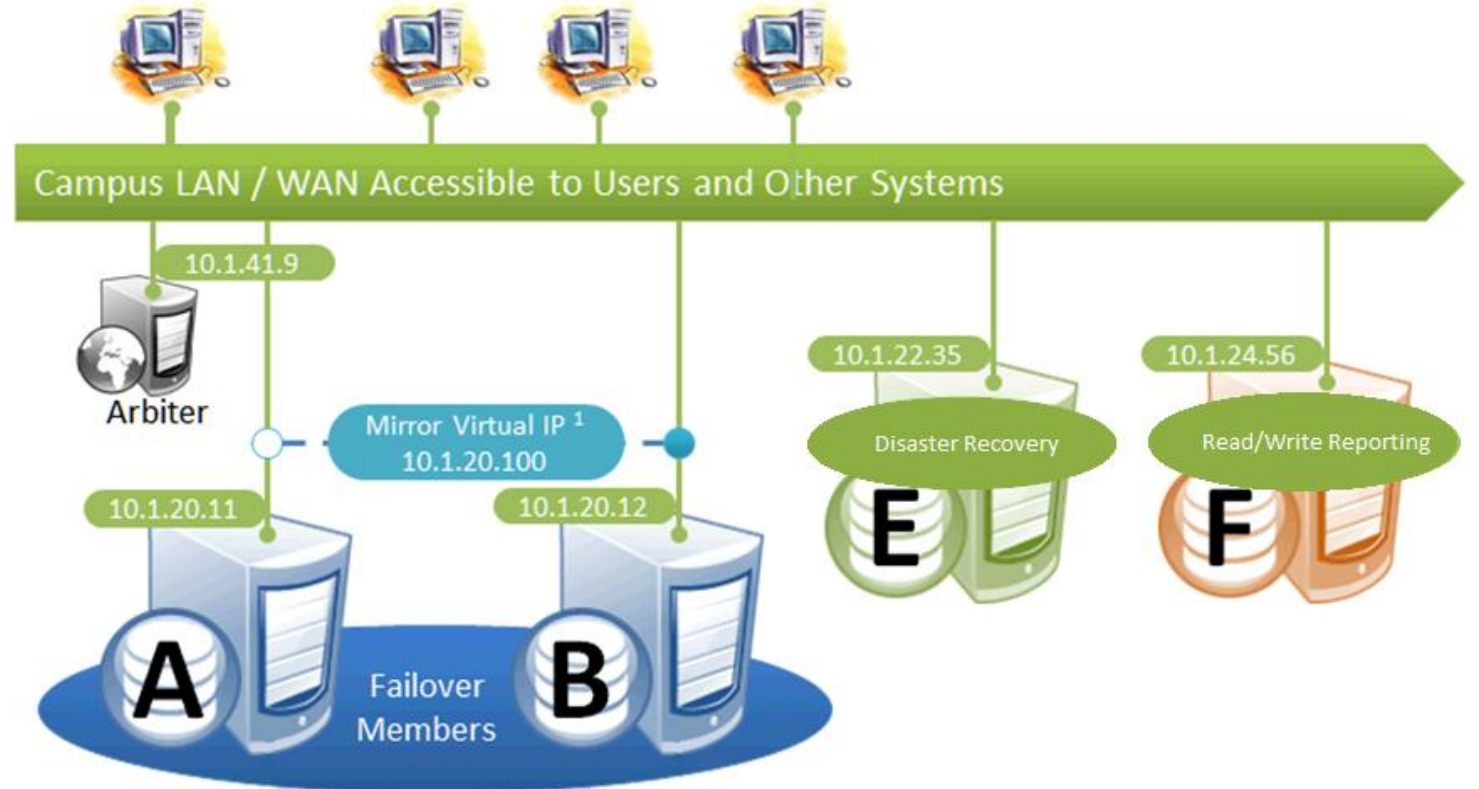
High Availability

- Approach 99% uptime
- On-site failover
- Triggered by hardware issues or system failures to maintain operations

Disaster Recovery

- Activated for major site issues, disasters
- Off-site activation and failover
- Enables recovery after site damage

Mirroring Network Topology

Campus LAN / WAN Accessible to Users and Other Systems

10.1.41.9

Arbiter

Mirror Virtual IP [1]
10.1.20.100

10.1.22.35

10.1.24.56

Disaster Recovery

Read/Write Reporting

10.1.20.11

10.1.20.12

A

B

E

F

Failover Members

Differences Between Mirror Members

Definitions

A Mirror Member can have different roles

- Failover
- Read-Write Reporting (Report Server)
- Disaster Recovery
- Arbiter

A Mirror Member can be in different states

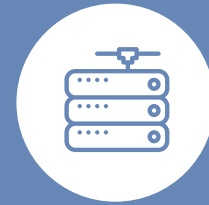- Primary
- Backup
- Connected

Setup

Pre-flight requirements

Installation of Instrument Manager and the Arbiter have been run on all systems

Locale settings

VIP and Hostname retrieved from IT

Network topology has been ironed out
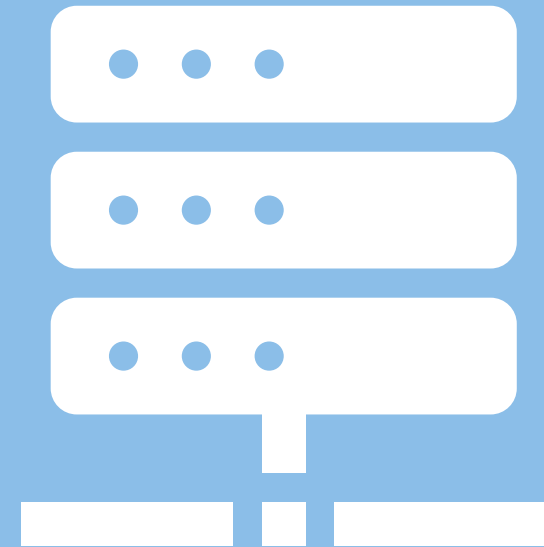
Setup

Arbiter System

Virtual Machine use

Use the Manage Mirror Members screen to add the primary

Other Mirror Members can be added from the Manage Mirror Member screen

Virtual IP and Hostname

- What is a Virtual IP?

- How is it used?

- How is the Virtual IP and Hostname used with the other devices on the network?

- How is the Virtual IP and Hostname used with End User Software (aka Thin Clients)?

- What happens to End User Software (aka Thin Clients) when the acting primary goes offline and another Failover member takes over?

Software Security Key Process Changes

Hardware Security Keys are not used in HA or DR environment

Utility needs to be run on the Failover systems and the Disaster Recovery system

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Monitoring

Status Display

Caché Management Portal:
System Operation -> Mirror Monitor

Unplanned Failover

During an unplanned Failover

Scenario includes two Failover systems

- Acting primary system goes down
- Any device / end user software (thin client) that is attached to the primary loses the network connection
- Arbiter sees that the heartbeat to that system has gone away
- Arbiter tells the other failover system to become the primary
- OS is informed to start responding to the Virtual IP address
- Connections with Autostart enabled are started up
- Notifier service is started

Failing Over Gracefully

Graceful Transition for Applying Updates/Maintenance

Upcoming Webinars & Virtual Events

Virtual User Group

Lab Intelligence

Oct. 6, 2020

11:00 AM PT /2:00 PM ET

Virtual Thought Leadership Event

The Lab's "New Normal": Thought Leadership to Navigate and Embrace Industry Change

Nov. 12, 2020

10:00 AM PT /2:00 PM ET

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