High Availability
提高 PI 系统的可用性

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Introduction

High Availability (HA)

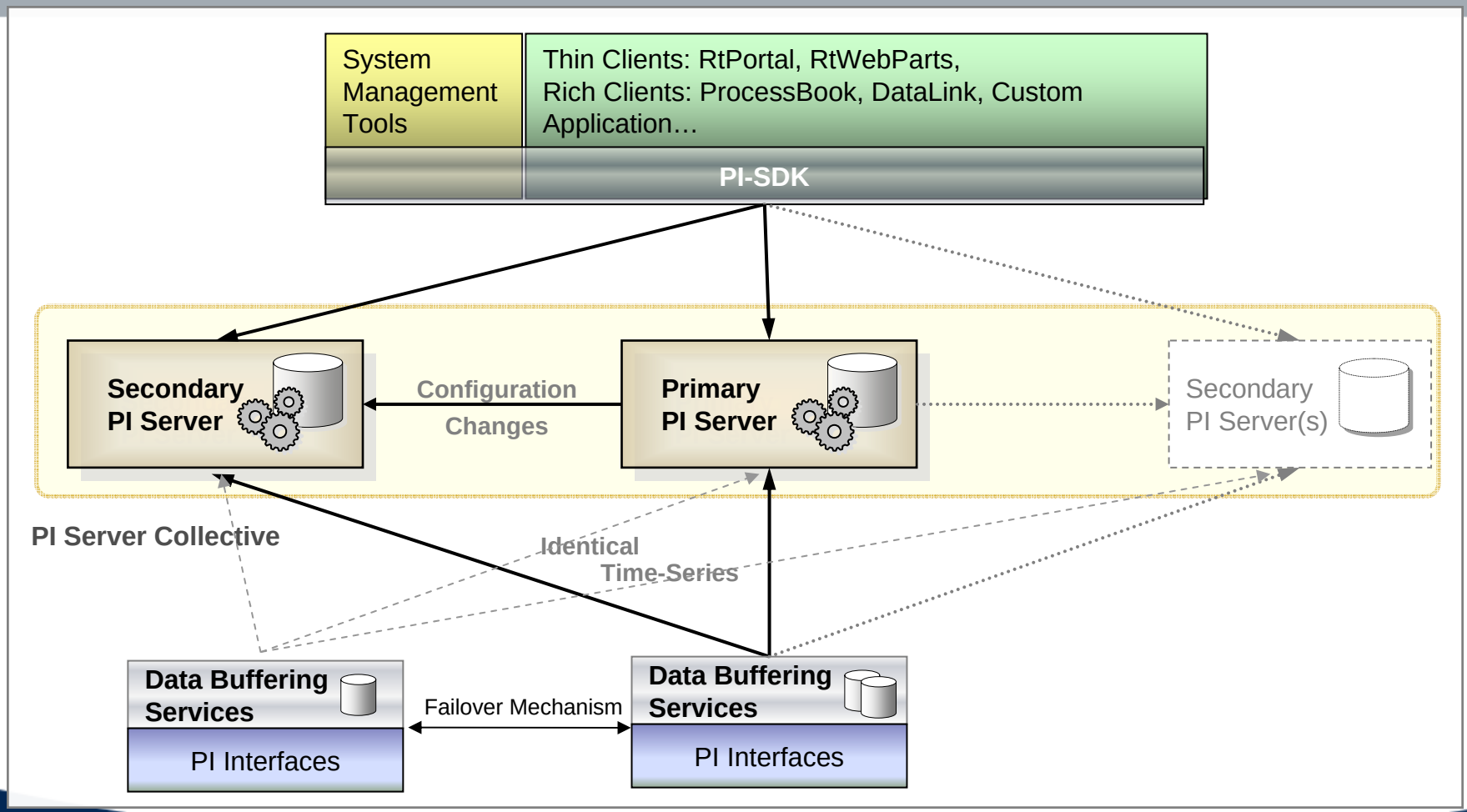
"Ability of a system to tolerate faults and continue to provide service according to its specifications"

Dr. Kalinsky "Design Patterns for High Availability"

Objective of the Day

- Review the HA architecture
- Benefits and Limitations
- Implementing a HA PI server
- Upcoming Enhancement

HA architecture



Values of HA

- High Availability to your PI System
- Peace of mind for Administrators
- Direct support for existing PI Clients
- Simple, scalable and flexible architecture

Limitations of HA

- No automatic replication of non-interface data
- No replication of batch records
- Post processed data calculated independently
- PI ACE management requires primary

Requirements

- The servers
  - Standard hardware and operating system is all that's required
- Upgrade underlying PI-API & PI-SDK on your interface nodes
- Consider upgrading your interface to the latest version
- Use SMT or ICU on the interface node to setup and monitor the test

Upgrade and Install PI

- Start your upgrades at the PI server
  - Prepare the server (O/S, network, etc)
    - Use documented procedure for moving PI to a new server
  - Upgrade PI to latest version
  - Install latest PI on secondary machine
  - Use PI collective manager to promote your PI clone into a collective with one member

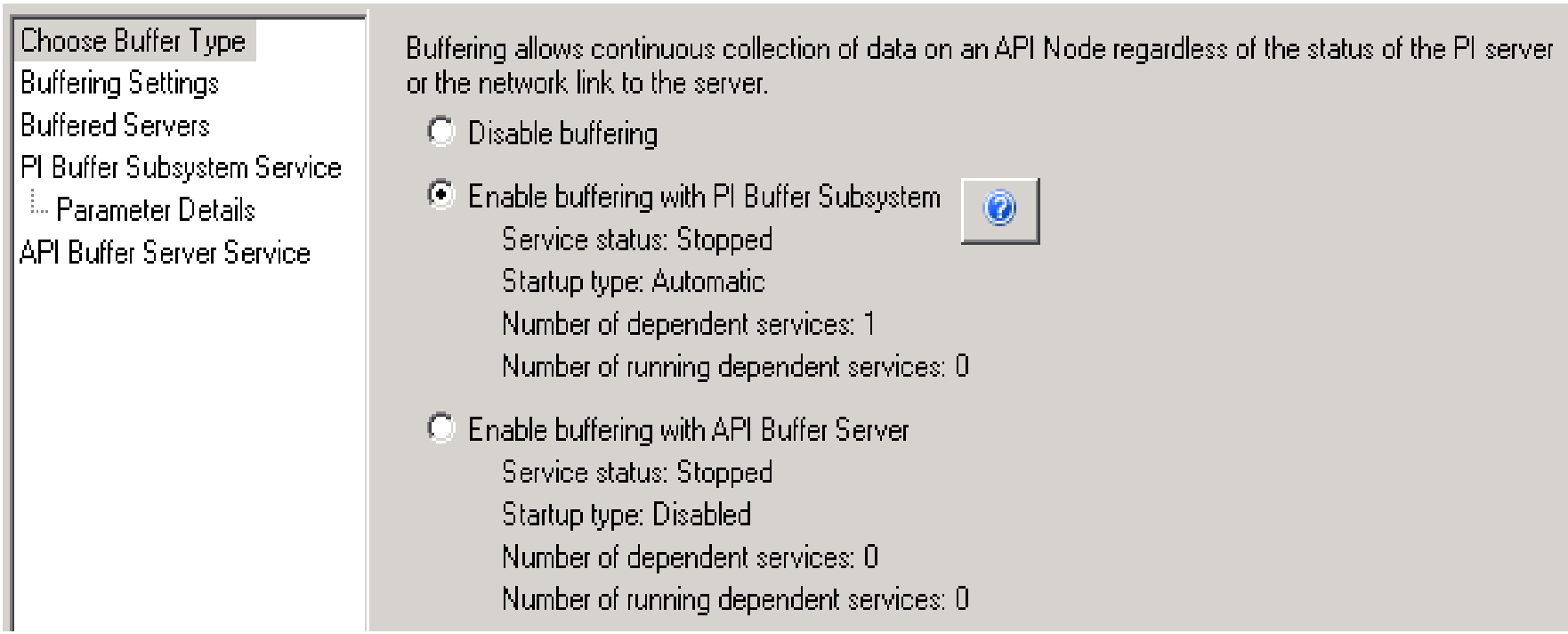
Using Collective Wizard

- Demo Video

Configure Interface

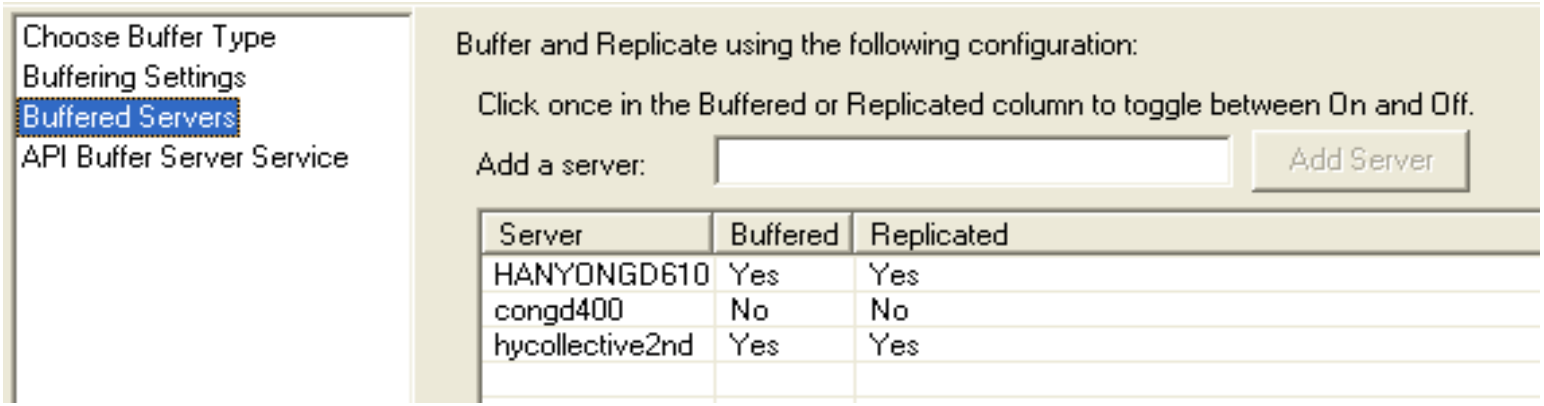
- If the interfaces aren't already on interface nodes, move them off of the PI server
- Upgrade PI-API & PI-SDK
- Optionally upgrade your interface(s) to latest version
- Set up N-Way buffering using latest PI-API Buffering version

Enable Buffer

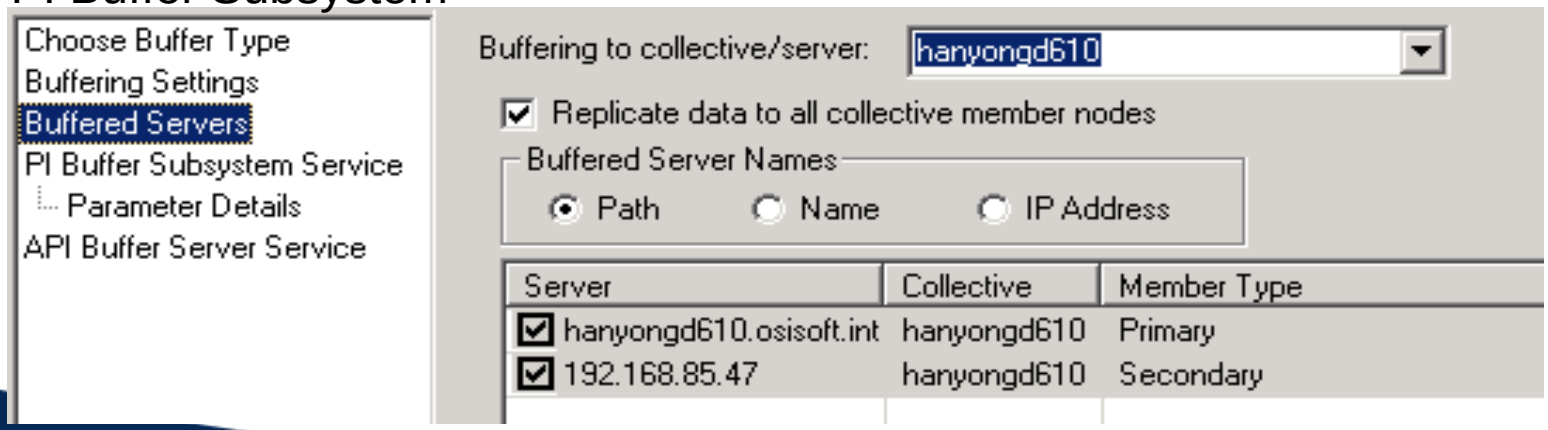


Buffer Settings

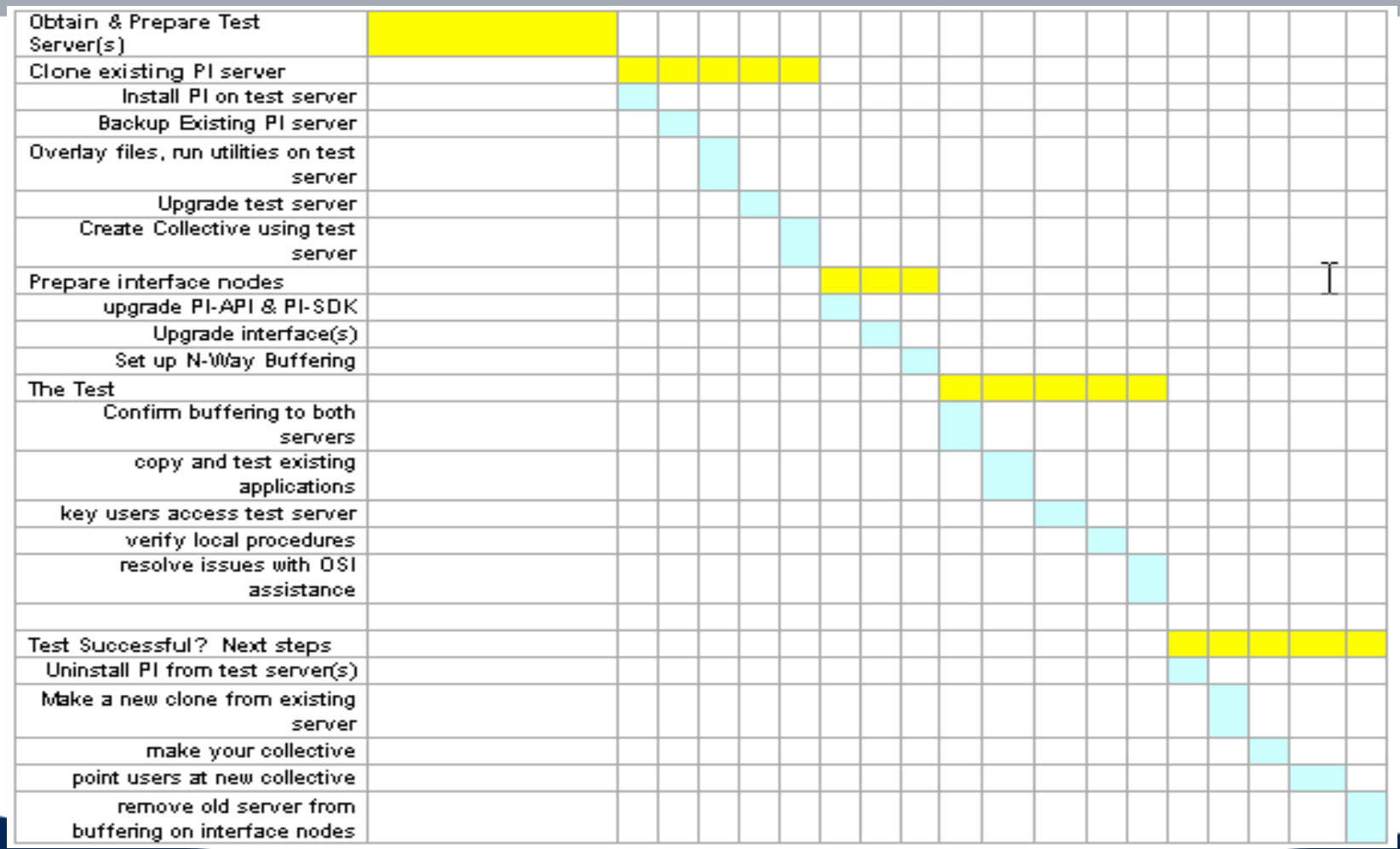
API Buffer



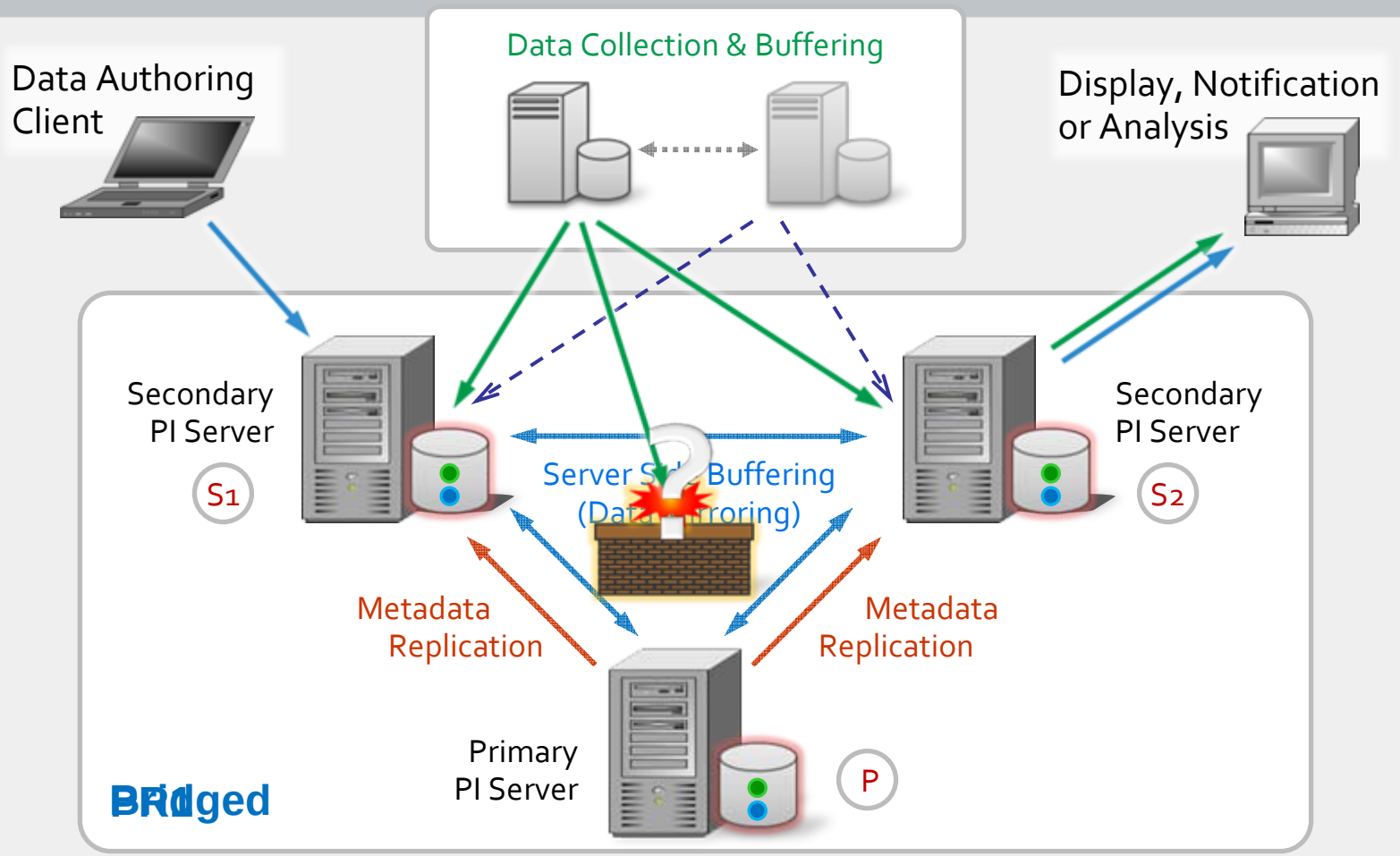
PI Buffer Subsystem



A Timeline


Obtain & Prepare Test Server(s)
Clone existing PI server
Install PI on test server
Backup Existing PI server
Overlay files, run utilities on test server
Upgrade test server
Create Collective using test server
Prepare interface nodes
upgrade PI-API & PI-SDK
Upgrade interface(s)
Set up N-Way Buffering
The Test
Confirm buffering to both servers
copy and test existing applications
key users access test server
verify local procedures
resolve issues with OSI assistance
Test Successful? Next steps
Uninstall PI from test server(s)
Make a new clone from existing server
make your collective
point users at new collective
remove old server from buffering on interface nodes

Upcoming enhancement



Conclusion

- Implement HA for:
  - improve reliability
  - better manageability