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# Empowering Business in **Real Time.**

**PI Infrastructure** for the Enterprise.

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# High Availability

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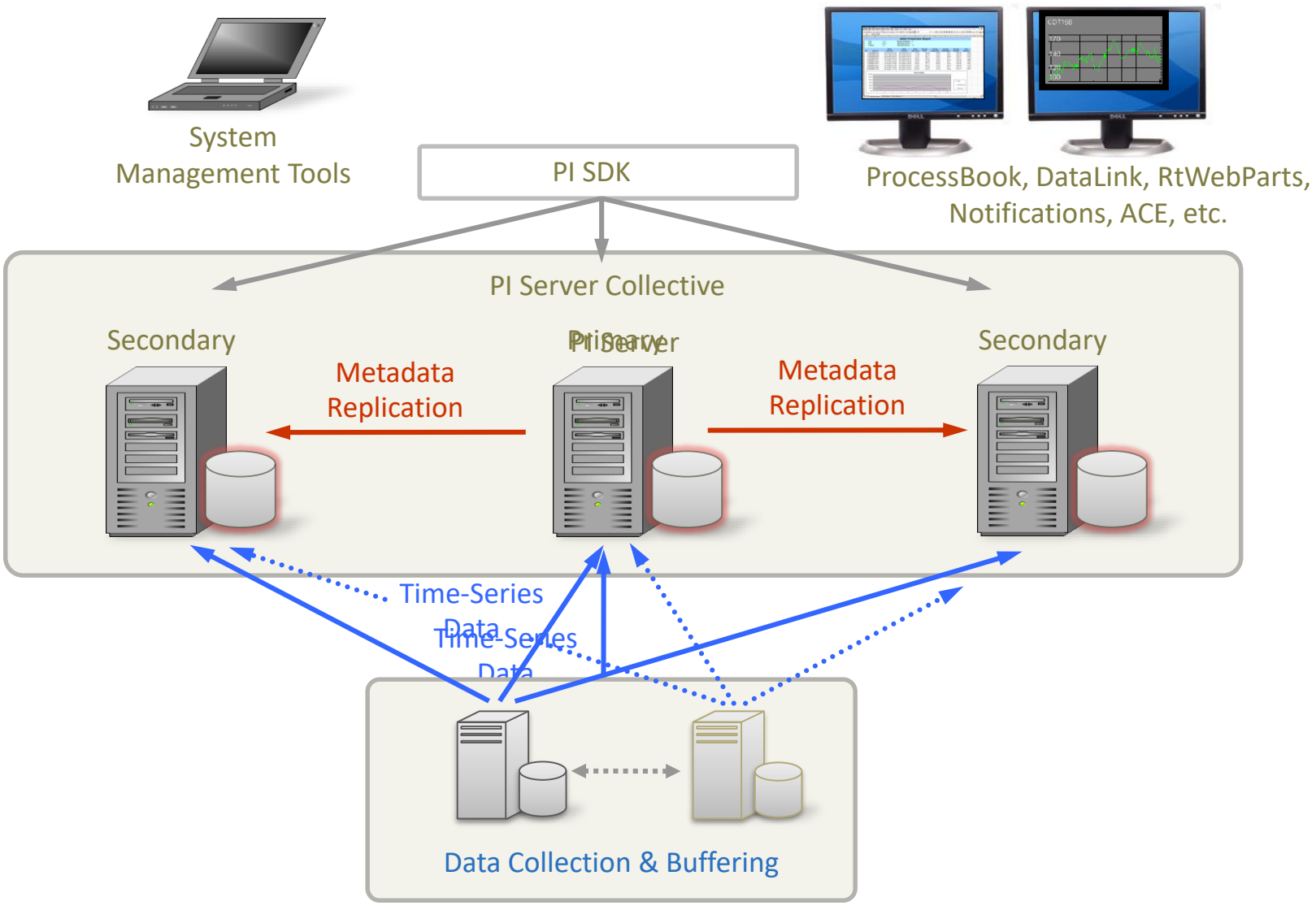
# Introduction

- PI High Availability (HA) has been available for approximately two years
  - Adoption has been rapid
  - HA has greatly enhanced the PI Infrastructure
- Outline
  - Review HA Infrastructure
  - Highlight HA adoption and deployment
  - Answer common questions
  - Future development directions

# PI High Availability: Infrastructure



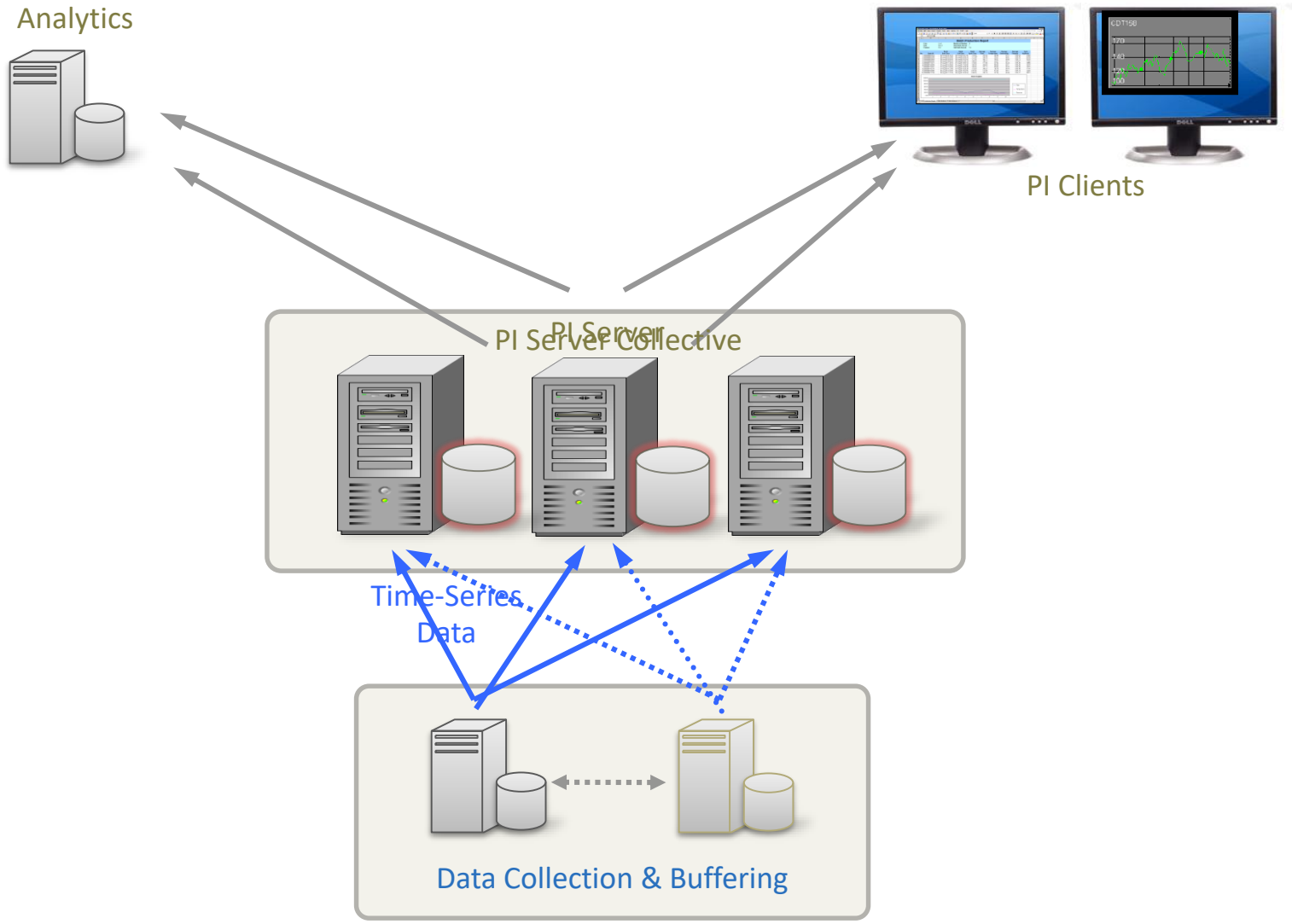
# PI High Availability: Releases

- PI Server PR1 and Buffer Subsystem PR1 (3.4.375.38)
  - December, 2006
- PI Server PR1 SP1a (3.4.375.80)
  - May, 2008
- Buffer Subsystem SP1 (3.4.375.84)
  - September, 2008

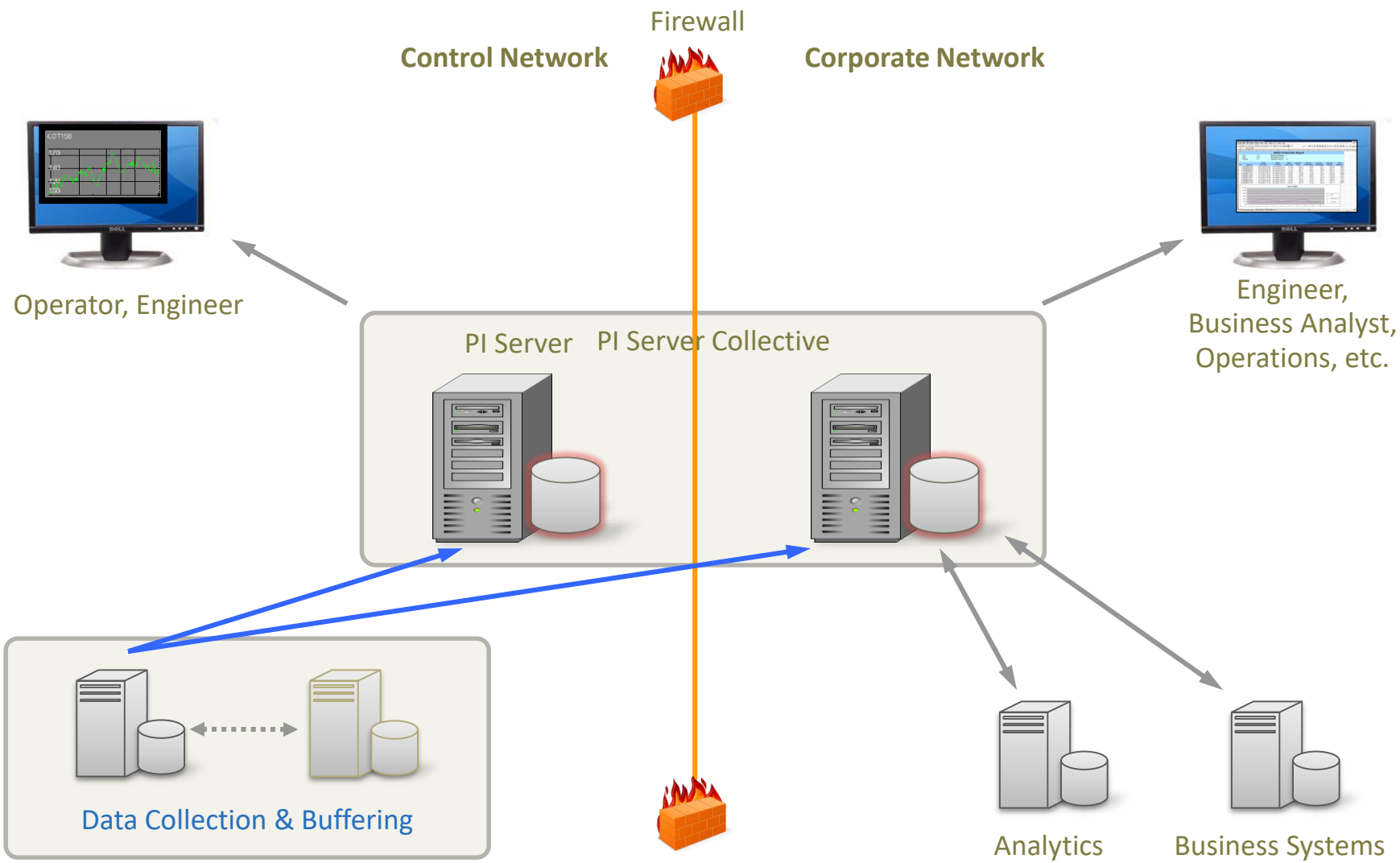
# PI High Availability: Adoption

- Hard to provide accurate numbers…but we can provide minimum numbers
- Independent customer downloads
  - PI Server PR1 1000+
  - PI Server PR1 SP1 1000+
  - Buffer Subsystem PR1 500+
  - Buffer Subsystem PR1 SP1 200+
- Licenses for PI Server Collectives
  - 1 secondary 250+
  - 2 secondary 15+
  - 3+ secondary 5+

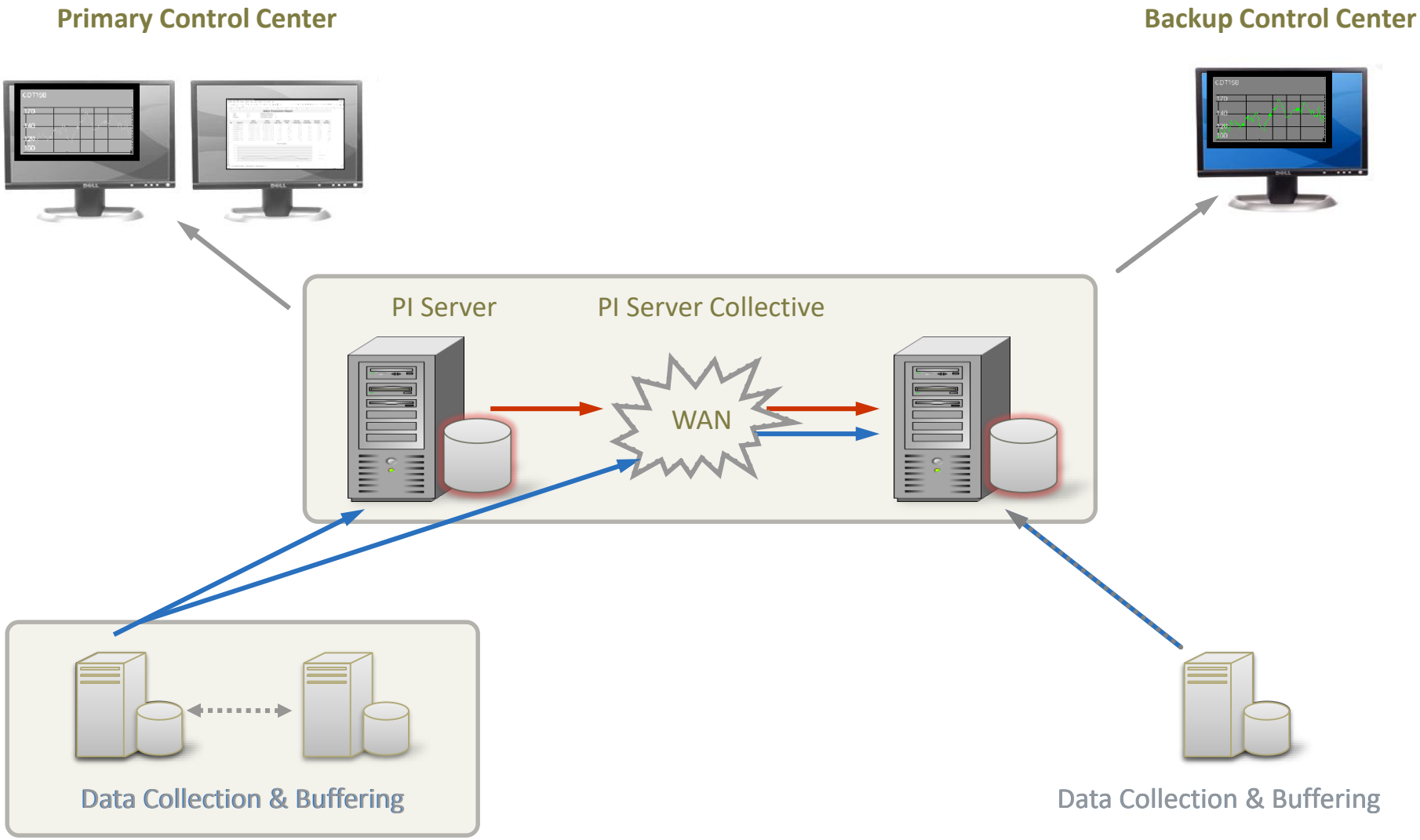
# Deployment: High Availability



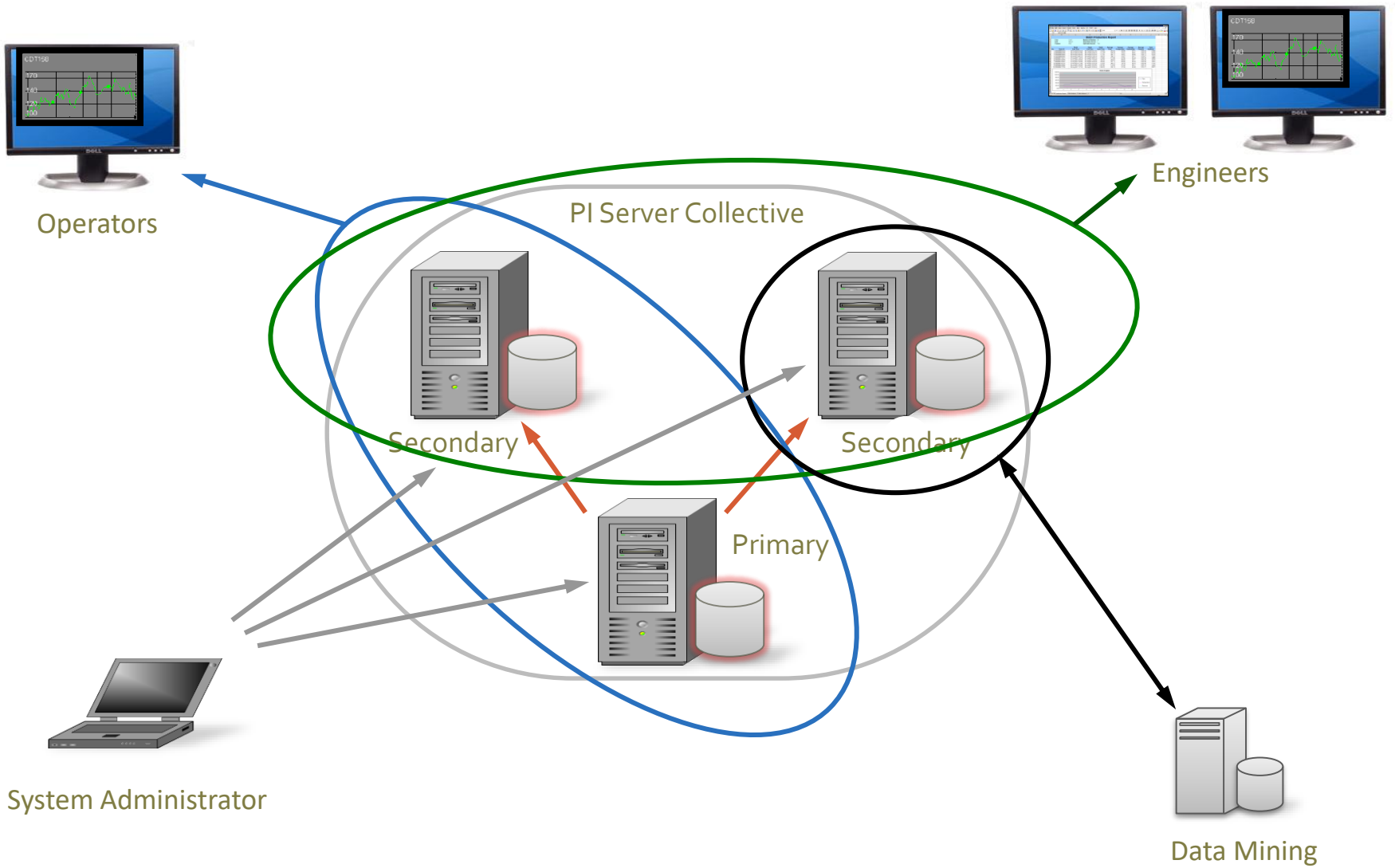
# Deployment: Server Replication



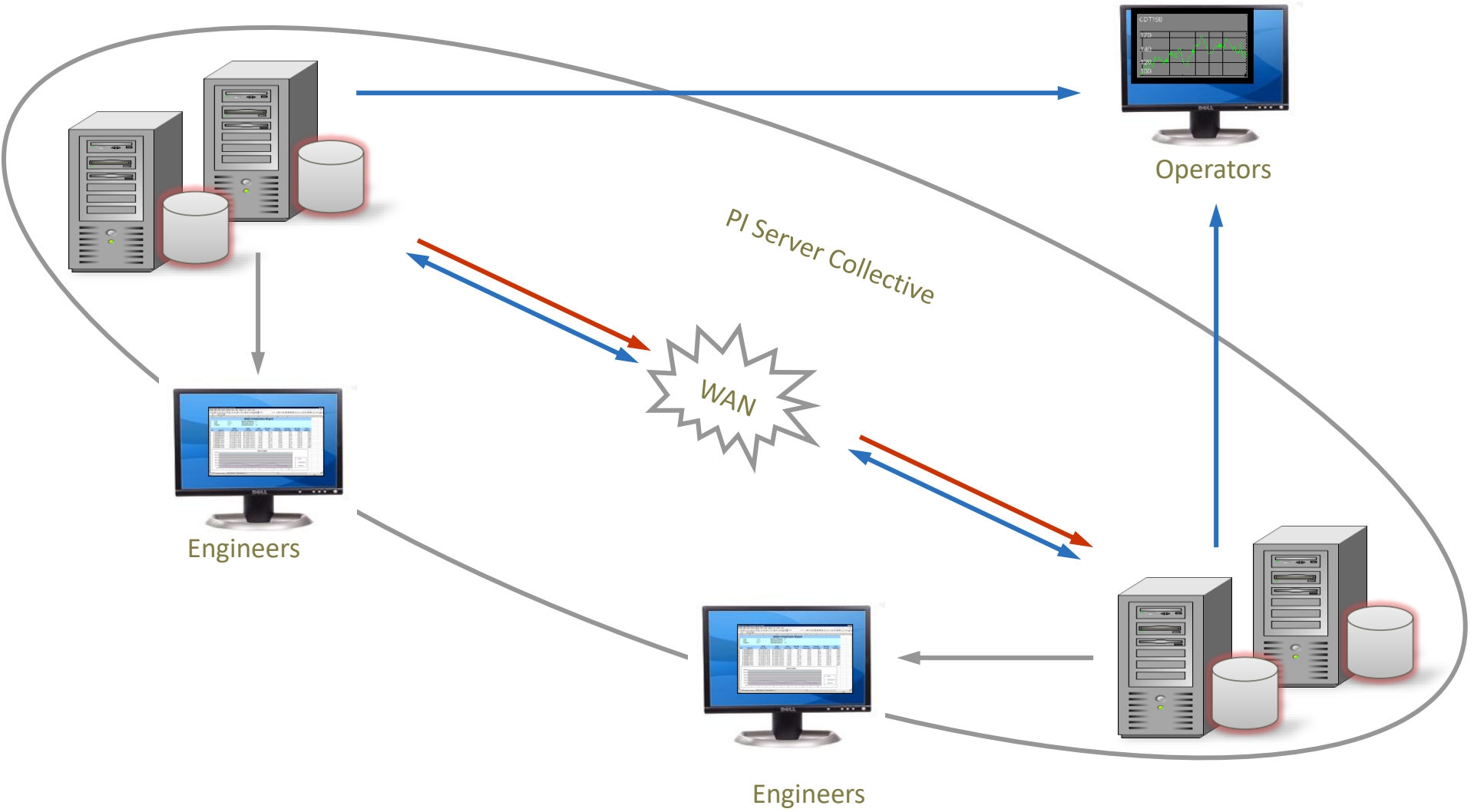
# Deployment: Backup/Disaster Recovery



# Deployment: Load Distribution



# Deployment: All of the Above



# Common Questions

- Bufserv or Buffer Subsystem?
  - Two options for interface buffering: Bufserv and Buffer Subsystem
  - Buffer Subsystem is OSIsoft's flagship data buffering technology
  - Use **Bufserv** when:
    - Operating System is UNIX, Linux, Windows NT4
    - PI Server is pre-PR1 (3.4.375)
    - Buffering to multiple, non-HA PI Servers

# Common Questions

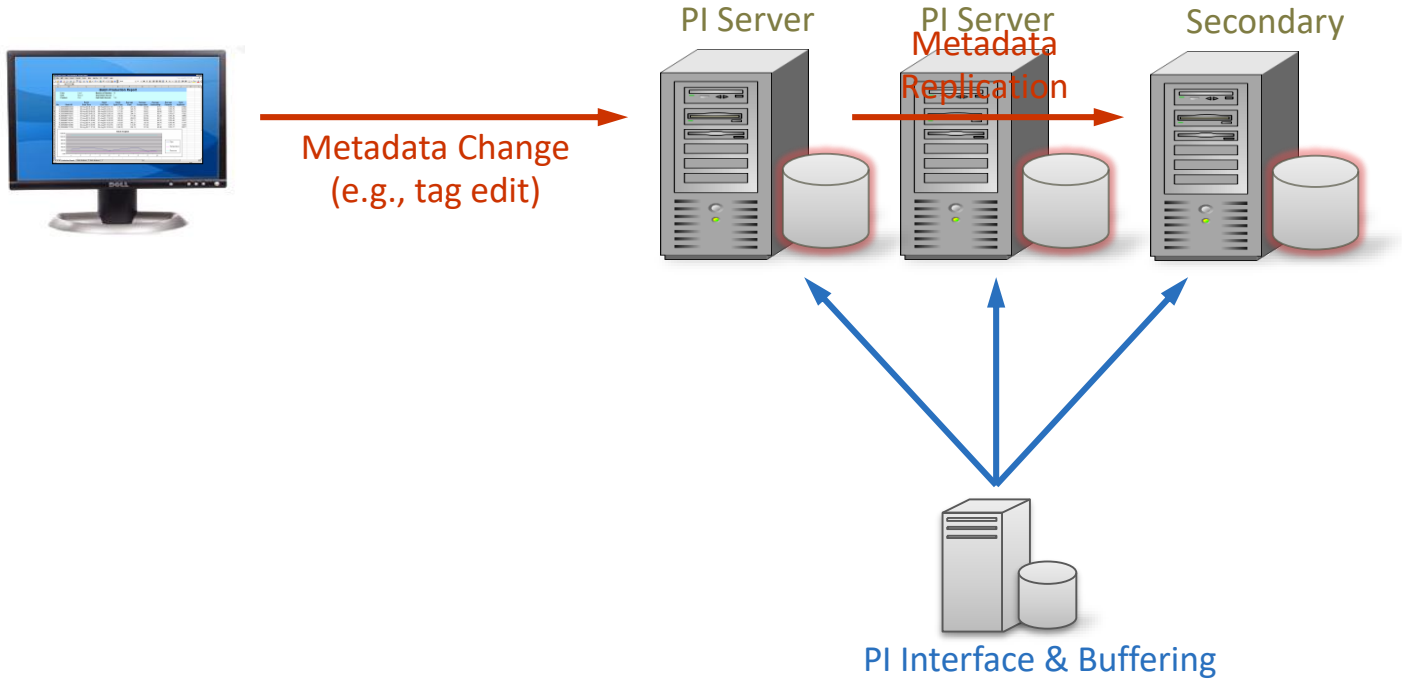
- Buffer Subsystem Advantages
  - Compression is performed on the data collection node, guaranteeing identical data among collective servers
  - Buffering capacity is limited only by disk space
  - PI3 protocol between data collection node and PI server
  - Automatic HA configuration
  - Higher data throughput (~10 times)
  - Performance Counters
  - Tools for examining/recovering buffer files

# Common Questions

- Do I still need PI backups?
  - HA expands the options for backup and recovery
- Backups remain important
  - Disaster recovery (e.g., delete tags or data)
  - Local backups when PI Collective is geographically distributed
  - Virtual machine snapshots are not sufficient

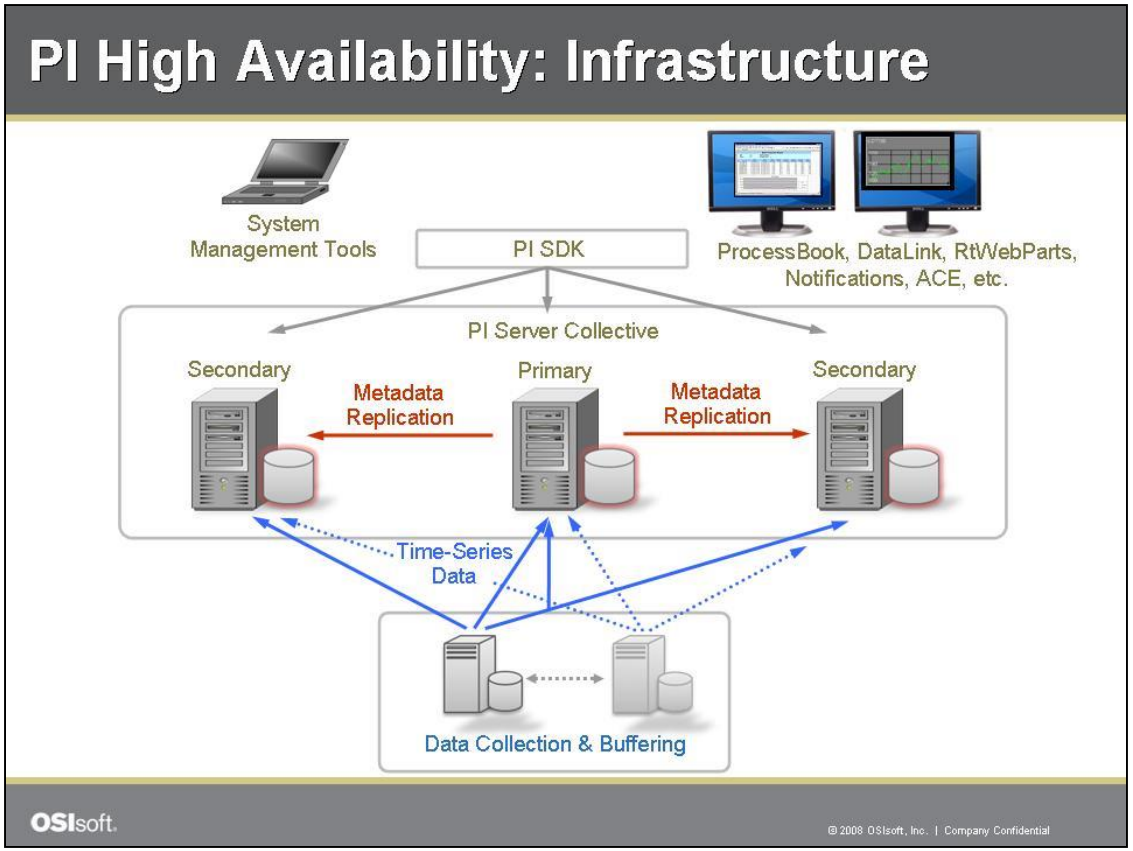
# Common Questions

- How do I size the hardware for HA servers?
- What is the network bandwidth required for HA?
  - Size each server as you would today
  - Use an existing installation to provide sizing estimates



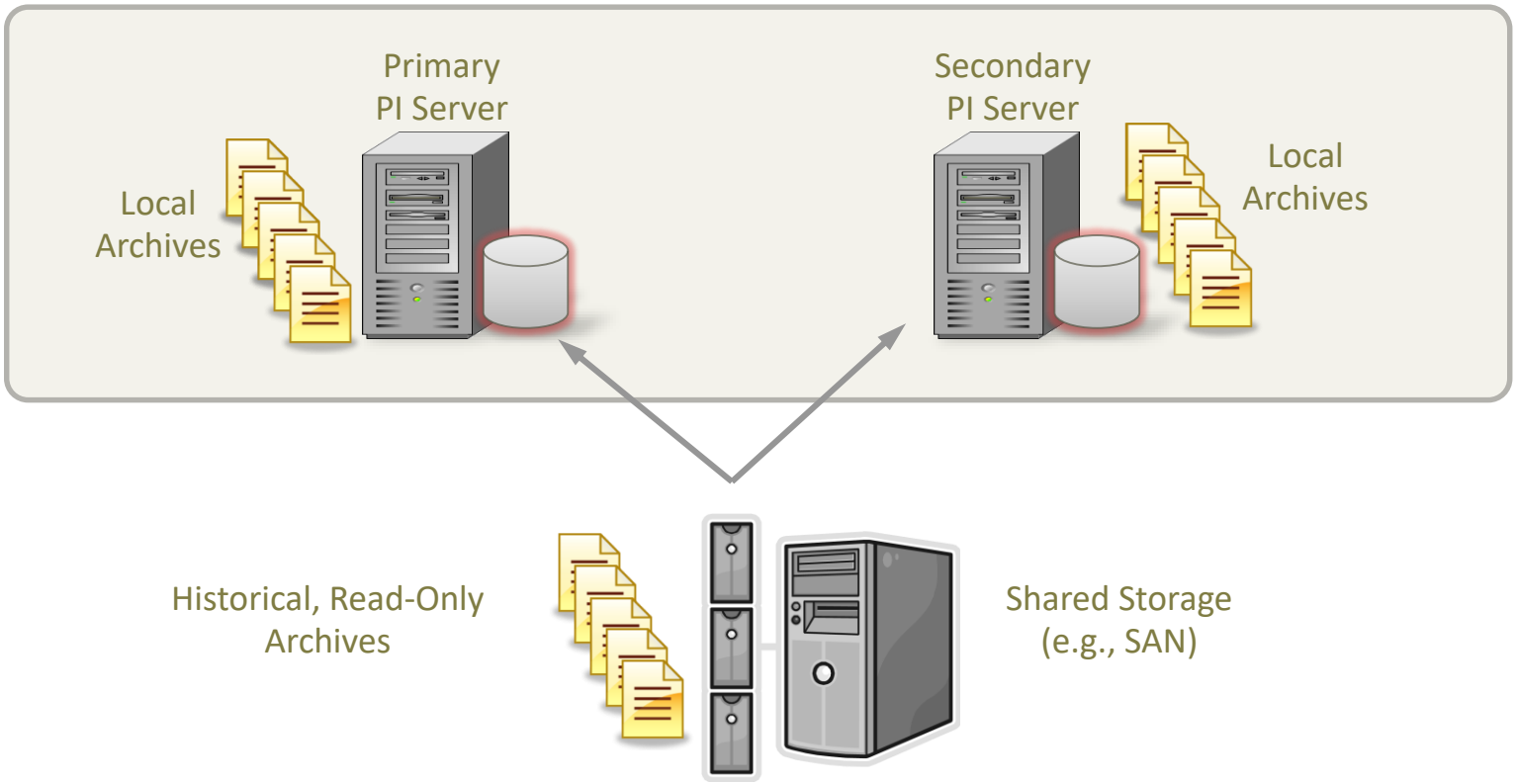
# Common Questions

- Are my third-party applications compatible with HA?
  - Read data/metadata from PI using the PI SDK
  - Write data to PI using the PI API and the Buffer Subsystem



# Common Questions

- Can archives be shared among collective servers?
  - Yes, when on shared storage and marked read-only



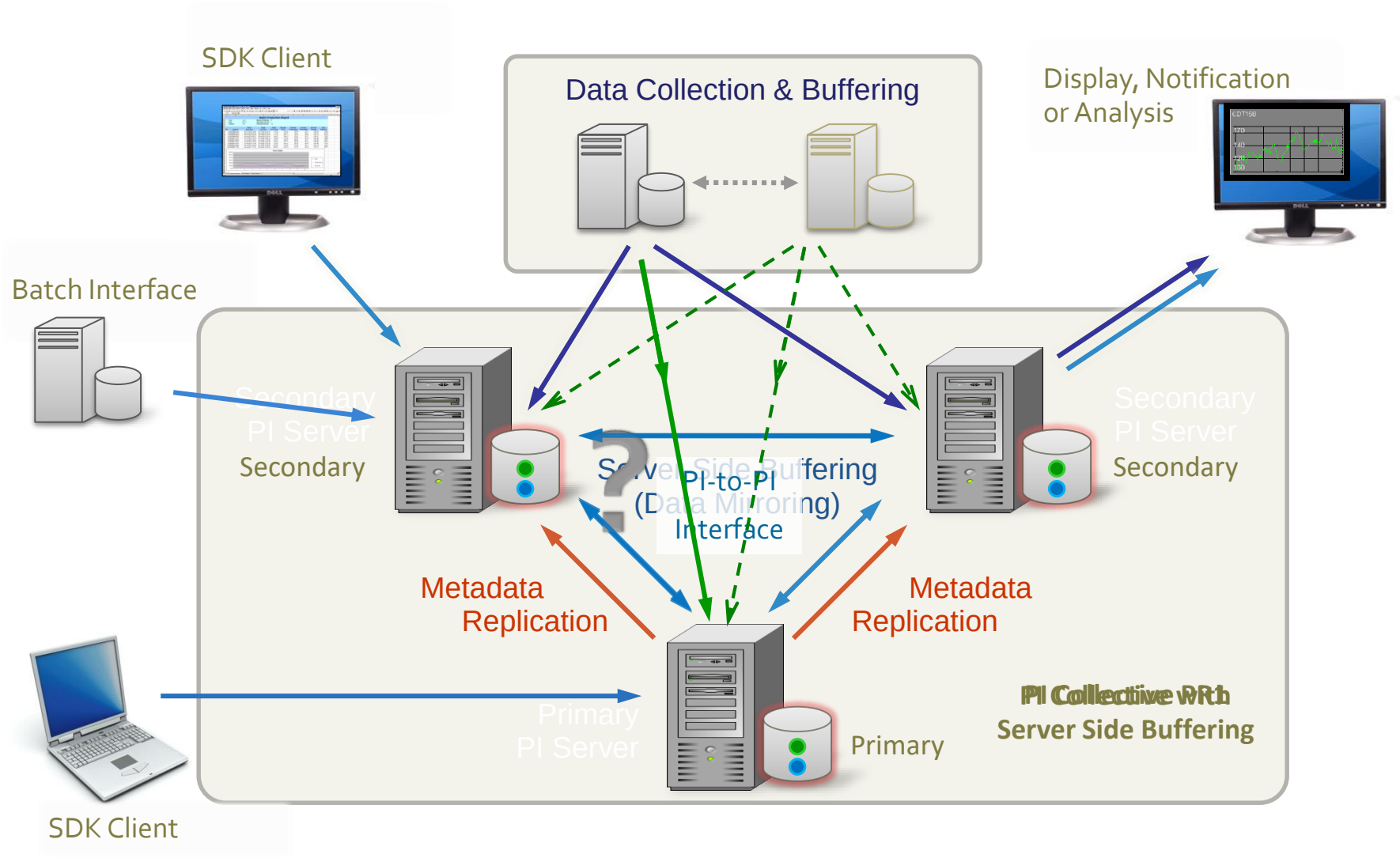
# Common Questions

- How does HA change technical support?
  - Affords time to investigate issues thoroughly
  - Provides a system of reference
  - Expands the options for recovery (e.g., repair vs. server re-initialization)

# Common Questions

- What about manual data entry?
  - Use PI-to-PI Interface
  - Write data to all servers
  - A number of limitations
- What about PI Batch data?
  - PR1 does not support HA for PI Batch
- Future developments…

# Future Development: Data Replication



# Summary

- Adoption of HA has been strong
- HA has greatly enhanced the PI Infrastructure

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# THANK YOU