

# **SMI-S Client and Server Development, from Check Box to Industrial Strength**

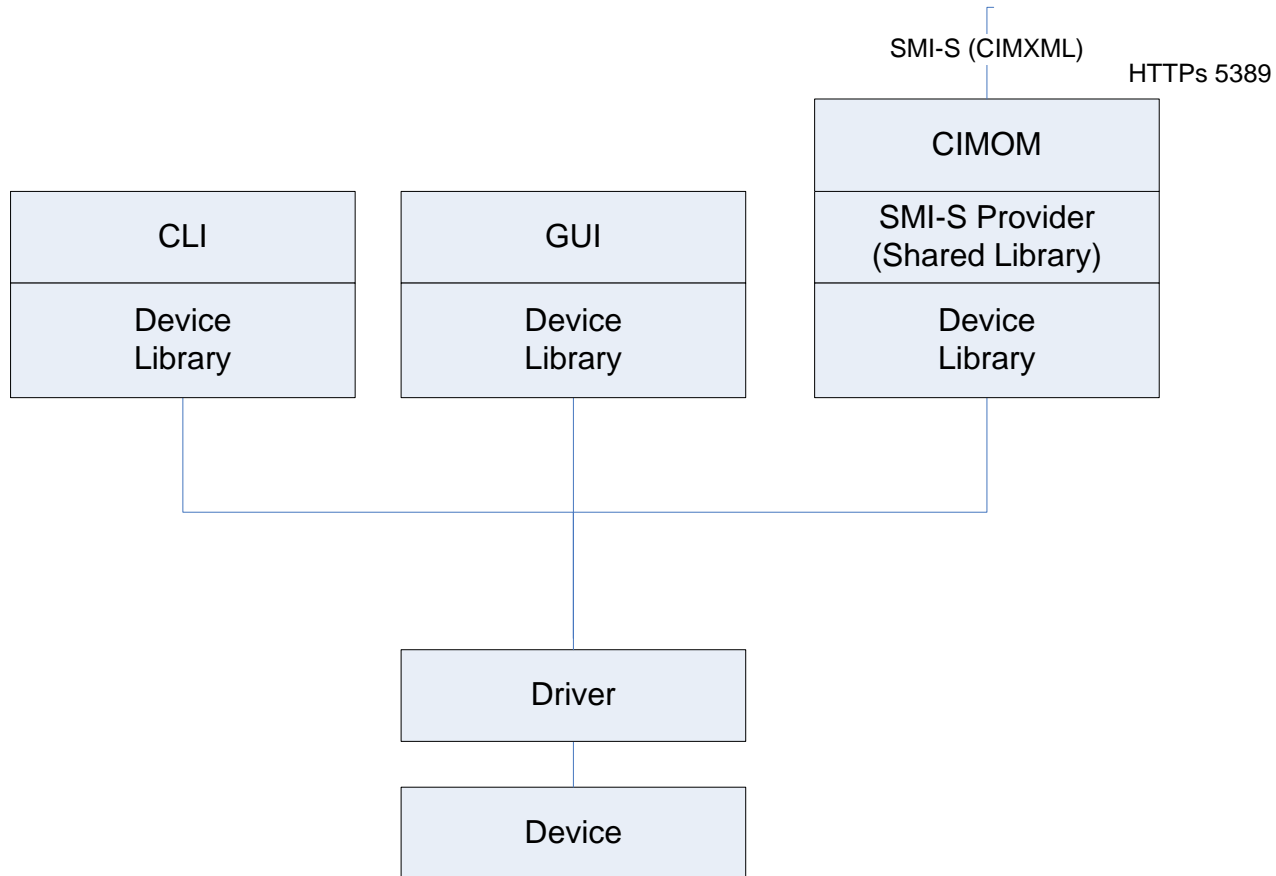
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# What a checkbox implementation looks like

- ❑ Polling
  - ❑ Everybody polls
  - ❑ Updates take forever
- ❑ No View Classes
  - ❑ Just more classes to implement
  - ❑ Can get certified without it
- ❑ Don't need extras like
  - ❑ WS-management, CMPI, Pull operations
- ❑ No integrated whole
  - ❑ SMI-S is just for “third party access”
  - ❑ We use native interface for our own

# Check Box



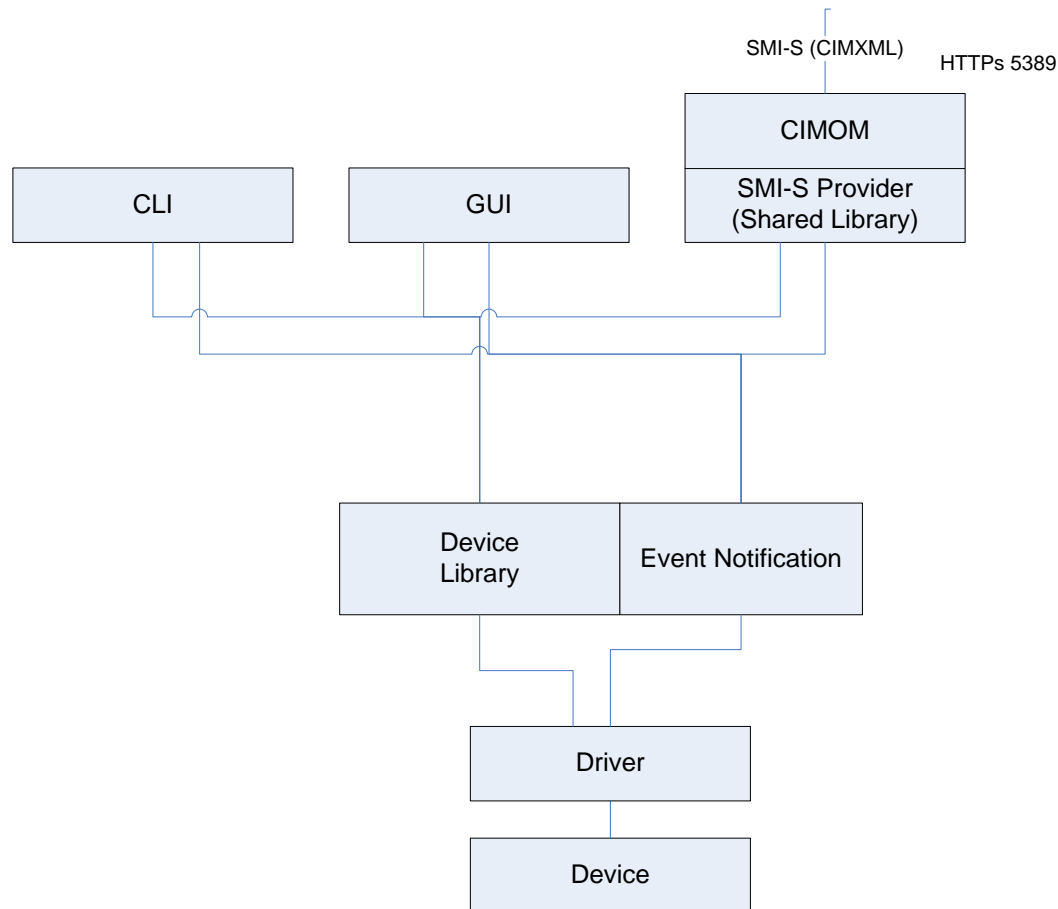
# How to get to Industrial strength

- ❑ Events and Indications
  - ❑ Nobody polls
  - ❑ Push the updates
- ❑ View Classes
  - ❑ Reduces CIM operations
  - ❑ Simplifies the model
- ❑ Extra features
  - ❑ Pull Operations, WS-management, CMPI interface
- ❑ The Stack
  - ❑ Putting it all together as an integrated whole

- ❑ **Checkbox**
  - ❑ GUI, Provider, and CLI all poll for information
    - ❑ Polling places Load on driver
    - ❑ Changes in the device takes time to reflect on display
- ❑ **Industrial**
  - ❑ Driver interface sends update notices
  - ❑ Alternate is for one process to poll and send events to everyone subscribed for events (indications)
  - ❑ Central place to distribute events

- ❑ Two types of SMI-S indications
  - ❑ Lifecycle – management data state changes
    - ❑ Used to update management data presentation (GUI)
  - ❑ Alerts – messages to the user
    - ❑ Displayed to user by GUI or CLI
    - ❑ Saved in an event log
- ❑ A single real world event can create both

# Indications added

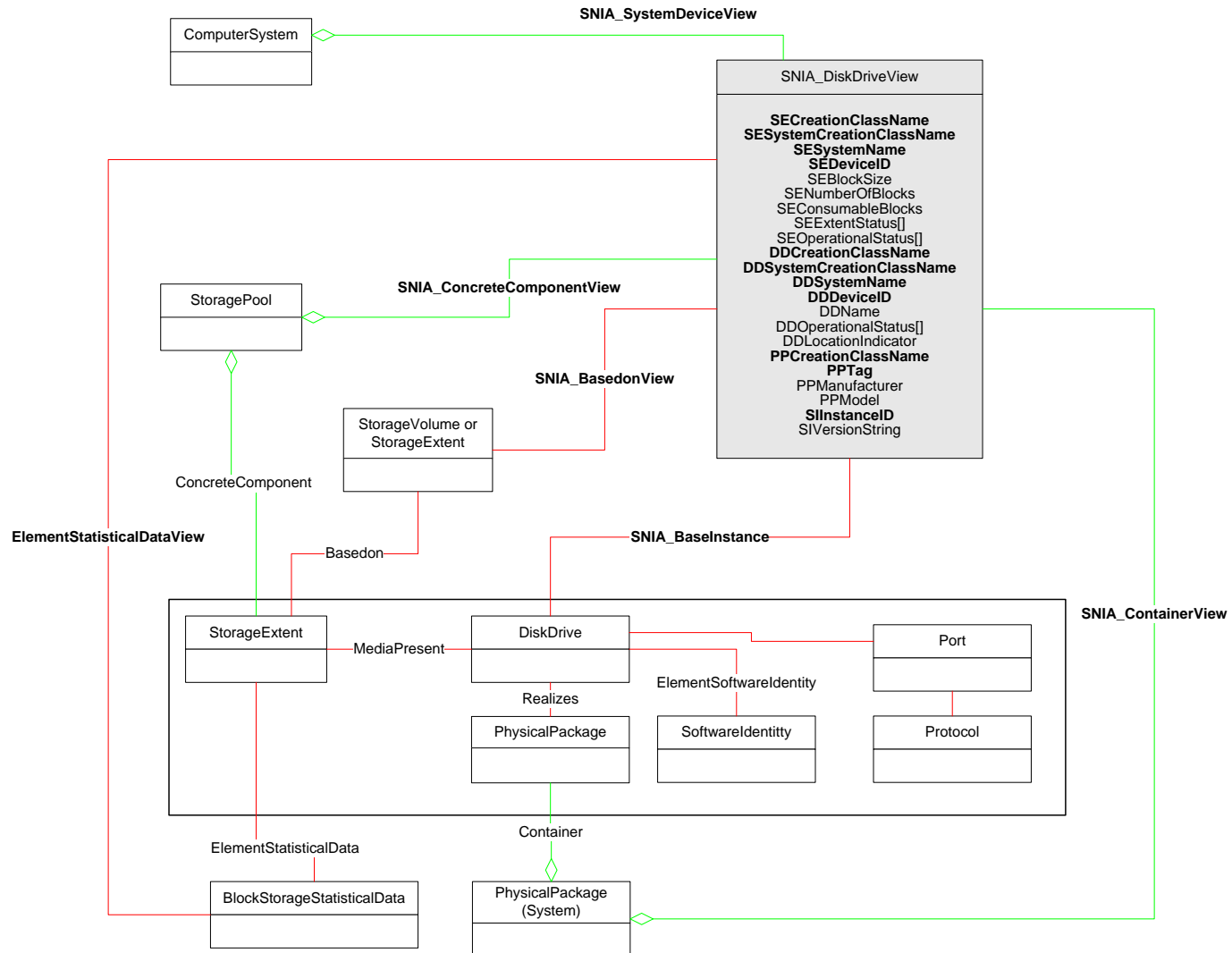


- ❑ **Checkbox**
  - ❑ Implement the basic commands
  - ❑ Not required to get certified
- ❑ **Industrial**
  - ❑ Operations are expensive Views reduce calls
  - ❑ Simplify the management model

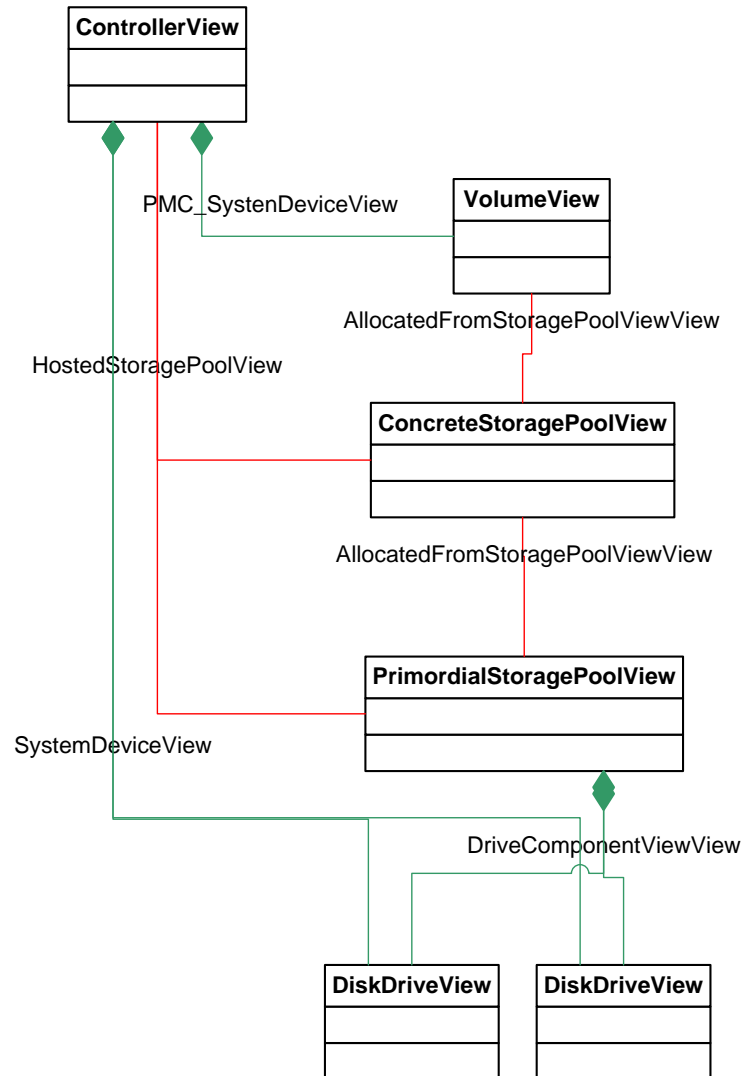


- ❑ View Classes makes Clients job fast and easy
  - ❑ I/O to 1 reduction in operations
    - ❑ Performance
    - ❑ Less code
  - ❑ Fewer calls to get device management data
  - ❑ Lifecycle indications on views reduces indications
    - ❑ One get instance call updates display
  
- ❑ Sample - Get Disk drive
  - ❑ Checkbox - 6 objects and 5 associations
    - ❑ Get all disks – 6 operations per disk
  - ❑ View – 1 Object
    - ❑ Get all disks – one CIM operation

# DiskDrive View

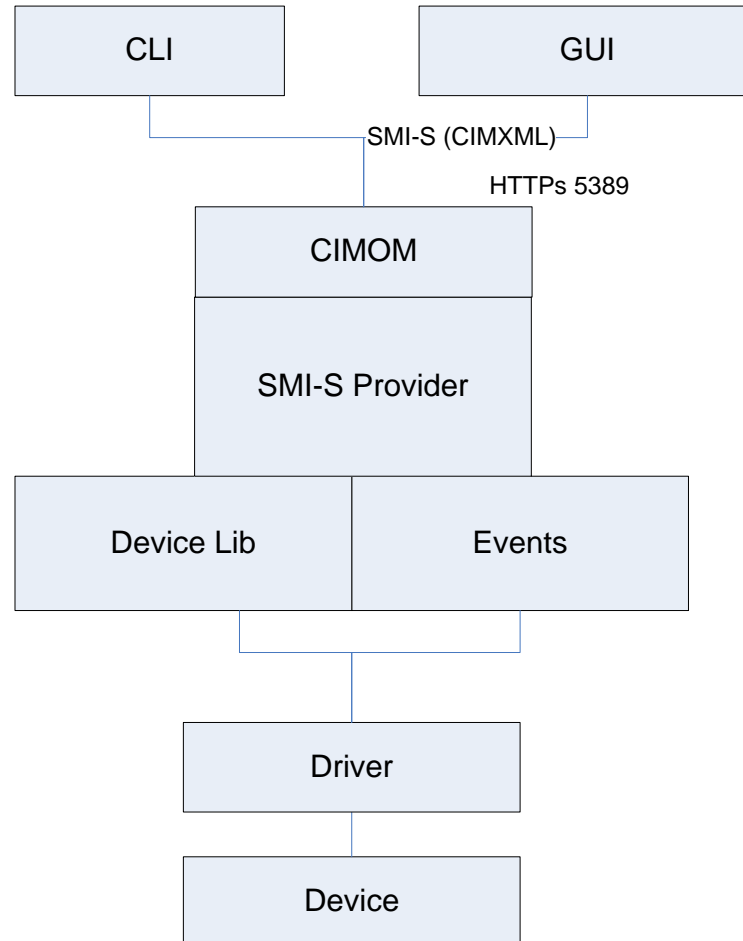


# HHRC in Views



- ❑ CMPI interface allows use of different CIMOMs
  - ❑ Support as many environments as possible
- ❑ WS-man / CIMxml
  - ❑ Implemented by the CIMOM
  - ❑ Most CIMOMs support both protocols
- ❑ Pull operations
  - ❑ Implemented by the CIMOM
  - ❑ Lets client pull data in manageable pieces

□ Now it is industrial strength **USE IT!**



- ❑ Driver interface for properties, signals for events
- ❑ Provider and CIMOM
  - ❑ Event Notification
  - ❑ Device library
  - ❑ Provider (instance, indication, method, ViewClass)
  - ❑ CMPI interface
- ❑ GUI and CLI uses SMI-S