

# PWG F2F Mtg June 2008

## WIMS-CIM WG

# What's a Prototype Proxy Printer Provider

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# Doing a Prototype

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- Prototype what? An SNMP-to-CIM proxy agent
  - Reads SNMP data from a network printer
  - Republishes that data in CIM format
- Management applications using WBEM protocols can access the data in CIM schema format
  - WS-Management in particular
- Read-only
  - It's only a proto

# What is a CIM Provider?

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- A mapping layer between a driver and a data repository
  - Maps from physical representation to logical representation
    - Physical = hardware, driver, device-dependent
    - Logical = device-independent model, data represented using CIM schema standard classes
- Façade only
  - Passive code, called when needed, no active business logic, no active management, translation interface only

# Structure of Provider

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- Provider statically registers definitions of classes to be instantiated in what namespaces
  - CIMOM uses this to determine what provider to call for what data requests: instances (of classes) in CIM namespaces
- WBEM protocols are all "pull" model
  - Data doesn't have to exist until someone asks for it, never stale
  - Data isn't stored, it's "instantiated" when requested
  - Fewer db race conditions (locking being addressed just now)
- Interface up to CIMOM
- Interface down to "driver(s)"
- The cheese in the sandwich translates the data

# Algorithm for an Operation

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- A protocol adapter requests instance data from a namespace in the repository (CIMOM)
- Request comes to provider for list of property values for an instance
- For each property,
  - What SNMP properties (plural) are involved in calculating this CIM property? (easy)
  - How does the CIM instance map to what row of what table in SNMP? (harder)
  - Get SNMP values, map datatypes
  - Convert result to data structure required by repository
    - For Dell Secret Sauce, this is an XML fragment
- Return whole data structure to CIMOM

# Prototype Components - Interfaces

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- Interface between CIMOM and logic = Dell Secret Sauce
  - Communicate in XML in both directions
- Interface between provider and network printer is CLI  
snmpget

# Prototype Components - Databases

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- Database of SNMP vars: names, OIDs, captions
- Database of sets of SNMP vars needed to calculate CIM properties
- Database of mappings from class instances to SNMP tables
- Database of printers, network addresses

# Prototype Components - Code

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- Glue code in Perl and/or Python
- General translation for simple property mappings
- Real code for complex property mappings



# Prototype Components - Client

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- Windows CIM Studio, no custom client
  - Manual but effective
  - Easy to browse all classes, list all instances
- Maybe some Powershell commandlets for unit test

# Progress

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- Database of SNMP vars
- Utility routines to map SNMP vars and OIDs
- Pseudocode for transaction
- Testbed containing Secret Sauce and snmpget lib
- Next steps
  - Parse MOF to extract MappingStrings (the answer to the question, What vars needed to compute property value)
  - Code to interface to Secret Sauce
  - Skeleton transaction for simple property

# Questions?

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