
WS-Man/CIM Associations

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Goals

- How CIM class instances tie together
 - "Association" classes
- How to get from here to there in CIM
- CIM terminology and operations for associations



What's an Association?

- A relationship between two things
- A small class that has pointers to the two related things
 - "Reference", in the syntax "REF"
- In CIM, the things are instances of classes
- Definitions usually restrict the types of things that may be related

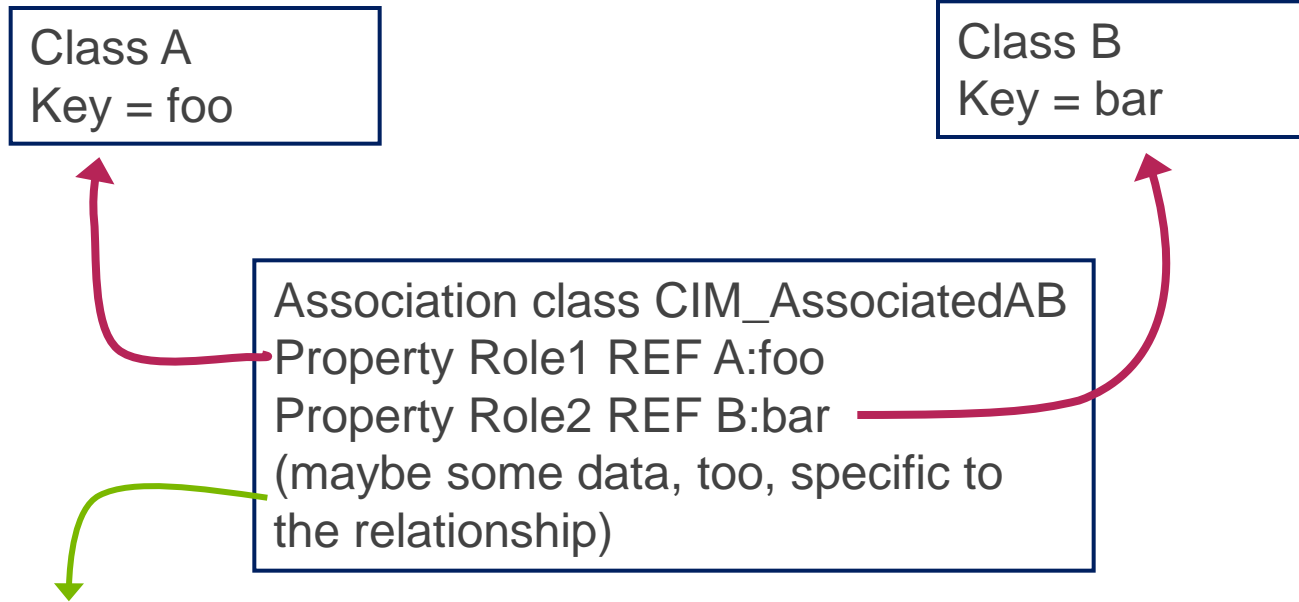


Association Classes

- What makes an association class?
 - Contains a reference to an instance
 - Always contains two (or three, but very rarely) references
 - May also contain data items
 - › Why is the data in the association instead of one of the endpoints?
 - (Look at CIM_AssociatedPowerManagementService)



Association = Relationship



e.g., CIM_AssociatedPowerManagementService contains the PowerState, RequestedPowerState, etc.

Lots of Association Classes

- Hundreds of them, many of them sort of the same in content
 - Intended for different purposes
 - Differences in class name, property names
 - › The class name states the type of relationship
 - › Property names state the roles that the two instances play in the relationship
 - The names are important



Operations

- Associators
 - The instances that are associated to a source instance
- References
 - The associations that refer to a source instance
- Can ask for the pointers (EPRs) or the instances
- Client can specify source instance, association name, result class name, and roles



Associators Operation



References Operation



Where in the Specs

- Chapter in DSP0227, *WS-Man CIM Binding*
- Explained well in DSP0200, *CIM Operations over HTTP* (a CIM specification, but not a WS-Man specification)



Subtle Points

- Namespaces
 - Just like any other instance of a class, an association instance exists in a CIM namespace
 - The instances that it points to may also be in any CIM namespace
- Navigable in both directions
 - Start in the namespace of the source instance
 - If the two instances are in separate namespaces, need one copy of the association in each namespace
 - This is very common in Dell implementations



Where Customer Navigation Starts

- "PRP" Profile Registration Profile, DSP1033
- "interop" namespace
 - Usually called "root/interop"
- Contains a list of all profiles implemented
 - Instances of class CIM_RegisteredProfile, for all versions implemented
 - Associated with instances in other namespaces of, e.g., CIM_ComputerSystem, devices, software instances, etc., using association class CIM_ElementConformsToProfile ("ECTP")



Typical Navigation

- Enumerate CIM_RegisteredProfile in root/interop
- For desired profile, get associators of CIM_ElementConformsToProfile
 - These are the instances that match the profile, the base server, sensors, batteries, fans, whatever
 - Almost always crosses to another namespace



More Later

- Working on list
- Open to all suggestions: SEND EMAIL

