NFS Management with CIM/WBEM

Lisa Gab

File Sharing Group

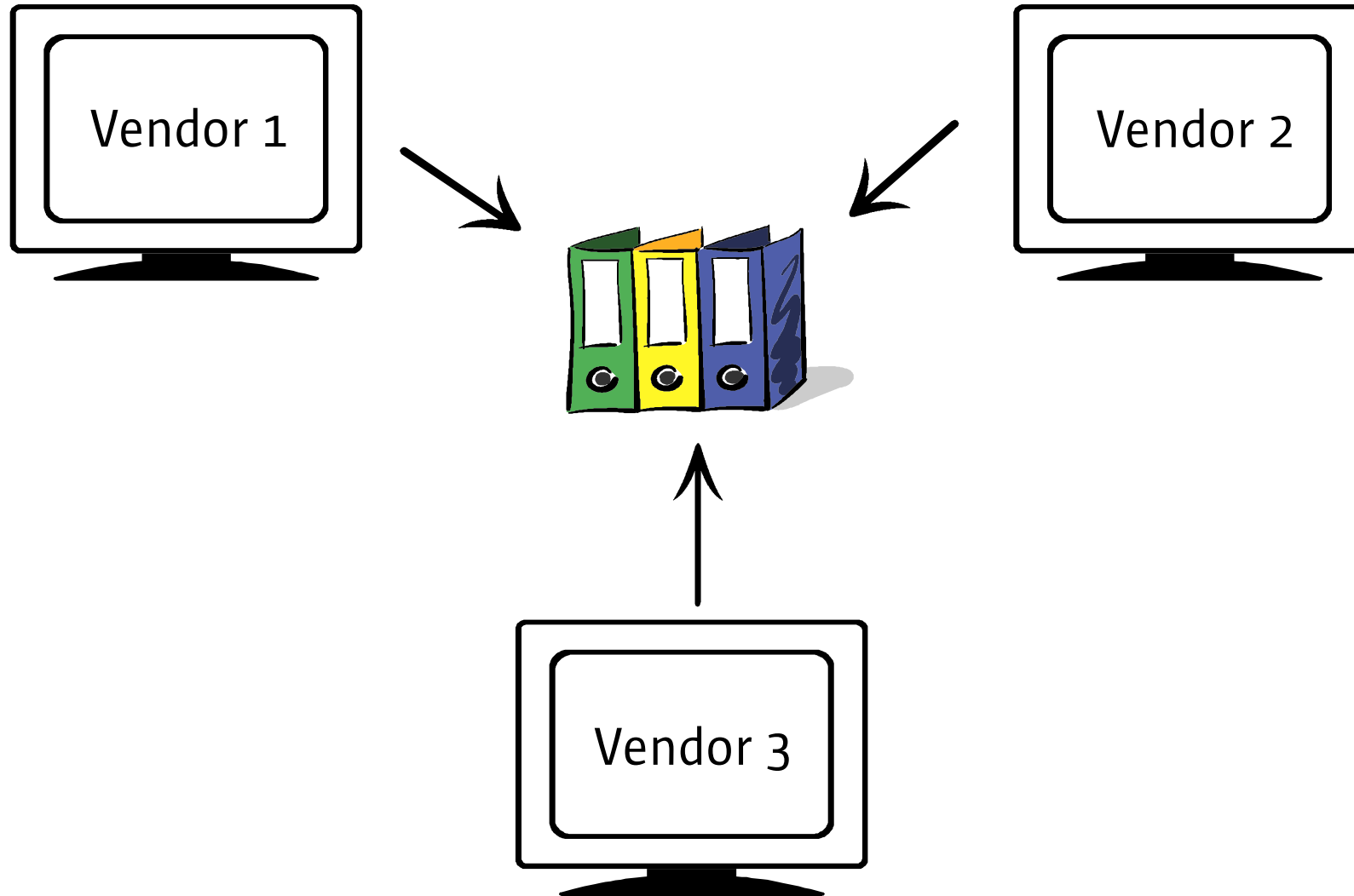**Sun Microsystems**

Sun microsystems

We make the net work.

The Technology

- WBEM – Web-Based Enterprise Management

- CIM – Common Information Model
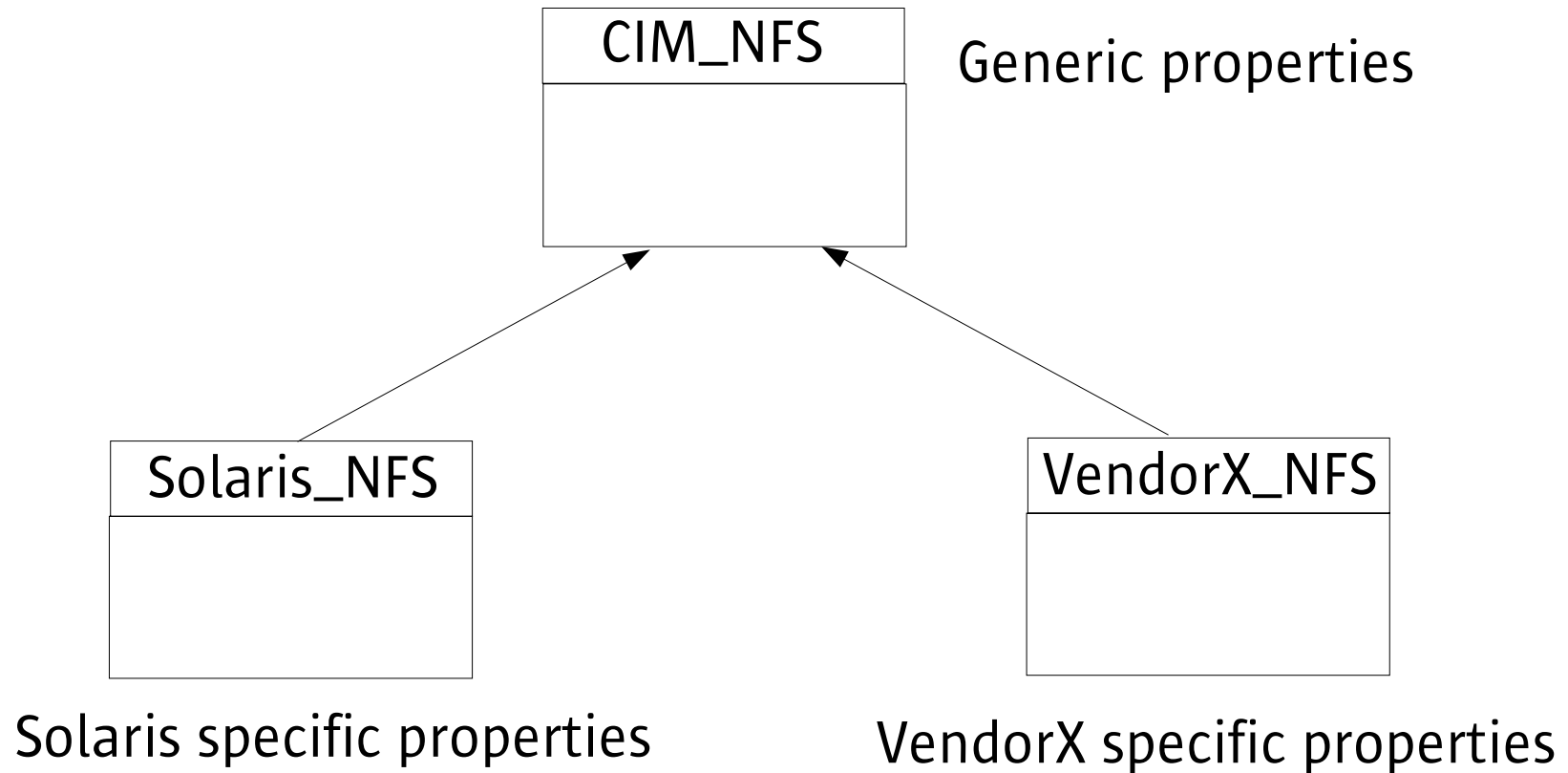 - The Data Model

The Idea?

CIM Schema

- Classes that are interesting for NFS:
  - CIM_NFS
  - CIM_NFSShare (v2.7)
  - CIM_Mount
  - CIM_HostedShare
  - CIM_SharedElement
  - CIM_Service

Modeling the Data

MOF (Managed Object Format)

- Describe objects in a textual form.

- Example:
  ```
  class <classname>: <superclassname> {
      <datatype> <property>;
  }
  ```

MOFs (cont'd)

```
// =================================================================
// NFS (NetworkFileSystem)
// =================================================================
    [Description (
      "A class derived from RemoteFileSystem representing that "
      "the FileSystem is mounted, using the NFS protocol, from "
      "a ComputerSystem. The properties of the NFS object "
      "deal with the operational aspects of the mount and represent "
      "the client-side configuration for NFS access. The "
      "FileSystemType (inherited from FileSystem) should be set "
      "to indicate the type of this FileSystem as it appears to "
      "the client.") ]
class CIM_NFS : CIM_RemoteFileSystem {
      [Description (
        "If set to true: Once the FileSystem is mounted, NFS requests "
        "are retried until the hosting System responds.\n"
        "If set to false: Once the FileSystem is mounted, an error "
        "is returned if the hosting System does not respond.") ]
    boolean HardMount;
      [Description (
        "If set to true: Retries are performed in the foreground.\n"
        "If set to false: If the first mount attempt fails, retries "
        "are performed in the background.") ]
    boolean ForegroundMount;  ...etc...
```

Architecture

Client → CIMOM (CIM Object Manager) → Provider

Getting Mgt. Data (in Solaris)

- Need Solaris WBEM Services

- Java client interface

  - Example: Enumerating all NFS file systems on a host.

  CIMClient cc = new CIMClient(host);

  CIMObject op = new CIMObjectPath("Solaris_NFS");

  Enumeration e = cc.enumerateInstances(op);