

Comments on a First Reading of CIM_Printer

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1 Overview

Here is a list of my comments from a non-cursory reading of the CIM_Printer section of the Device_Printing MOF. It is much less formal than Ira's excellent, thorough review. I apologize in advance for cases where I have misconstrued or ignored relevant standards such as IPP. Also, I have not even attempted to determine if all RFC3805 objects are represented in the CIM_Printer element, nor whether they are correctly represented.

The comments fall into several general categories.

- Structural problems: the CIM_Printer element seems to be a blending of the Printer MIB and IPP models of "printer." It contains many properties that relate to print jobs, that don't fit well within the printer object. I think we want the CIM model of the several printing-related objects to come closer to the PWG model.
- Vague or meaningless properties: the CIM_Printer element contains properties that cannot be implemented reliably or interoperably. In some cases, their semantics are vague or ambiguous for fundamental reasons; some others may be rescued with improved semantic descriptions.
- Errors in MappingStrings or ModelCorrespondence attributes: a few MappingStrings point to the wrong MIB.
- Improvements needed to MappingStrings or ModelCorrespondence attributes: additional MappingStrings or ModelCorrespondences would help implementers and future editors.
- Read/write attributes: the Device_Printing.mof does not currently identify what properties might be writable to consumers; some clearly are not, such as status. CIM properties by default are read-only. Printer MIB, at least, identifies some objects as potentially writable.
- Mutable and Modifiable attributes to be added to descriptions: documenting mutability and modifiability (same as write, above) would be useful guidance to developers.

2 Details

2.1 Structural Suggestions

- Move MaxCopies to somewhere, CIM_PrintService?
- Move DefaultCopies to somewhere, CIM_PrintService?
- Move MaxNumberUp somewhere, CIM_PrintService?
- Move MaxSizeSupported to somewhere, CIM_PrintService?

2.2 Vague or Meaningless Properties

Deprecate meaningless properties.

- Deprecate and define new properly-formed properties for CIM_Printer.HorizontalResolution and VerticalResolution. Horizontal and vertical resolution do not make sense for printers that (a) can print page images in portrait and landscape orientations, and (b) can feed paper by the short edge or the long edge. This does not require a complex or exotic printer: any modern home or office inkjet or laser printer can render "vertical" and "horizontal" completely ambiguous. Printer MIB uses prtMarkerAddressabilityFeedDir and ...XFeedDir to specify the resolution(s) of the printer unambiguously. CIM_Printer should use the same model.

Note that CIM models resolution only in pixels per inch. That's okay, we don't need no steenkin' meter sticks 'round here.

Deprecate most CurrentXxxx properties.

- deprecate CurrentPaperType.
- deprecate CurrentLanguage.
- Deprecate CurrentMimeType.
- Deprecate CurrentCapabilities.

Add descriptive semantics for some properties whose behavior is not clear.

- CurrentCharSet and CurrentNaturalLanguage need clear descriptions of the

2.3 *Errors in MappingStrings*

MappingStrings

- CIM_Printer.PrinterStatus is mapped to Printer-MIB.hrPrinterStatus, change to HostResources-MIB.
- Same for DetectedErrorState.

2.4 *Improvements to MappingStrings and ModelCorrespondences*

- CIM_Printer.DefaultPaperType should map to Printer-MIB.prtInputDefaultIndex and prtInputMediaName.
- JobCountSinceLastReset should map to Printer-MIB.prtMarkerPowerOnCount.
- TimeOfLastReset should map to MIB-2.sysUptime.

2.5 *Write Attribute (Modifiability)*

Specific suggestions TBS.

2.6 *Mutability*

Specific suggestions TBS.

2.7 *Other*

- The description clause of PaperTypesAvailable refers to RFC1759; update to 3805.