

Dell Precision Optimizer

管理员指南

注意、小心和警告

 **注:** “注意” 表示帮助您更好地使用该产品的重要信息。

 **小心:** “小心” 表示可能会损坏硬件或导致数据丢失，并告诉您如何避免此类问题。

 **警告:** “警告” 表示可能会导致财产损失、人身伤害甚至死亡。

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简介

本文档介绍可供 IT 管理员远程管理 Dell Precision Optimizer 的工具、提示和建议。

Dell Precision Optimizer 组件

Dell Precision Optimizer 的四个主要组件是：

- 性能
- 跟踪和分析引擎 (TA)
- 系统维护 (SM)
- Dell Precision Optimizer Manager CLI (dpoCmd.exe)

各组件可作为一项 Windows 服务或 COM 服务器实施。Dell Precision Optimizer 安装程序包将这些服务和 Dell Precision Optimizer 支持 DLL、用户界面 (UI) 组件、内核模式设备驱动程序等安装到 POA 安装文件夹中。此外，可以安装一个任务栏应用程序，它将在用户每次登录时启动。此应用程序通知用户各种 POA 事件，比如更新完成和需要重新引导。

Dell Precision Optimizer 安装程序包还负责创建 Dell Precision Optimizer 模块使用的软件注册表项。以下是默认路径：

表. 1: 默认路径

名称	路径
安装文件夹：	C:\Program Files\Dell\PPO
注册表路径：	HKLM\Software\Dell\PPO
运行数据：	C:\ProgramData\Dell\PPO

该安装包会复制一些默认的配置文件和策略到安装文件夹中。

主题：

- [卸载 Dell Precision Optimizer](#)

卸载 Dell Precision Optimizer

可通过以下步骤从系统卸载 Dell Precision Optimizer：

可通过读取以下位置的 `UninstallString` 字符串的值，获取卸载命令：

表. 2: 卸载命令位置

名称	命令位置
对于 64 位系统	<code>HKKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\Microsoft\Windows\CurrentVersion\Uninstall\{D66A3355-FEA4-4F60-8BAF-D6CBEDB396D8}</code>
对于 32 位系统	<code>HKKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall\{D66A3355-FEA4-4F60-8BAF-D6CBEDB396D8}</code>

`UninstallString` 示例值显示如下：

```
"C:\Program Files (x86)\InstallShield Installation Information\{D66A3355-FEA4-4F60-8BAF-D6CBEDB396D8}\setup.exe" -runfromtemp -l0x0007 -removeonly
```

注：在此命令中，系统的值 `-l0x0007` 可能会有所不同。

从命令提示符窗口（以管理员身份运行），执行上述命令将启动卸载 Dell Precision Optimizer 应用程序的过程。可以通过添加以下内容修改以下命令，从而以无提示方式运行卸载：

```
-s -fl<full-path-of-iss>
```

如果静默响应文件（.iss 文件）位于 `c:\temp` 文件夹且其名称为 `uninst.iss`，则以下命令将以无提示方式运行卸载：

```
"C:\Program Files (x86)\InstallShield Installation Information\{D66A3355-FEA4-4F60-8BAF-D6CBEDB396D8}\setup.exe" -runfromtemp -l0x0007 -removeonly -s -flc:\temp\uninst.iss
```

性能子系统包括以下模块：

- 策略处理引擎 (PPE)
- 配置文件更新工具 (profUpd.exe)

主题：

- [策略处理引擎](#)
- [配置文件更新工具](#)

策略处理引擎

策略处理引擎或 PPE 被当做一个 Windows 服务来实施，这个服务会在机器启动后尽快开始执行，无论用户是否登录。

此模块提供了一个可用于执行以下任务的界面：

- 激活或取消激活配置文件
- 枚举输入和输出参数，以便创建新策略
- 为机器、用户或第三方 Dell Precision Optimizer 应用程序保存和检索配置文件和策略。

配置文件更新工具

Dell Precision Optimizer UI 将使用命令行工具 (profUpd.exe) 在 Dell 服务器检查和更新配置文件。必须使用一个本地配置文件来通知 Dell Precision Optimizer Dell 服务器的地址和所使用的协议，例如 HTTP、HTTPS 或 FTP。

注：服务器上的所有配置文件和策略都已数字签名并使用 AES-256 算法加密存储。

跟踪和分析

分析子系统提供生成以下类型报告的能力：

- 系统分析报告
- 工作量分析报告
- CPU 情报报告
- CPU 情报报告
- 系统诊断报告
- 性能通知

系统分析报告采用 XML 格式，提供由 Dell Data Vault (DDV) 应用程序收集的数据。

工作量分析功能允许用户分析其工作量。

主题：

- [系统分析报告](#)
- [工作量分析](#)
- [CPU 情报报告](#)
- [CPU 情报报告](#)
- [系统诊断报告](#)
- [性能通知](#)

系统分析报告

用户可以使用 Dell Precision Optimizer COM 界面启用或禁用这些报告。这个界面允许用户配置生成系统分析报告的频率从而枚举并读取现有报告。系统分析报告 XML 文件中包含报告数据，这些数据被分成 <ddv_group> 和 <ddv_subgroup> 两个元素。与同一类别有关的所有数据被分在同一组下。

与热敏电阻 0 有关的所有数据被放在名为 **Thermistor 0** 的 DDV_GROUP 下。

报告设置

启用系统分析

表. 3: 启用系统分析

属性详细信息	说明
请键入：	启用或禁用复选框
默认：	已禁用
说明：	此设置允许 DDV 子系统开始数据收集。禁用时，DDV 无法被激活。启用此选项后，将定期生成 DDV 报告，直到手动关闭设置。如果该类别选择发生了任何变化，所有现有的 DDV 原始数据都将丢失。

生成报告

表. 4: 生成报告

属性详细信息	说明
请键入：	选择以下选项之一：

表. 4: 生成报告 (续)

属性详细信息	说明
	<ul style="list-style-type: none"> • 24 小时后 (每日) • 12 小时后 • 8 小时后 • 6 小时后 • 4 小时后
默认 :	每日
说明 :	启用选项后, DDV 将定期收集原始数据并生成报告。这个设置控制着原始数据被 DDV 处理并且转化成一个新报告的频率。如果该类别选择发生了任何变化, 所有现有的 DDV 原始数据都将丢失。

启用数据收集

表. 5: 启用数据收集

属性详细信息	说明
请键入 :	可以从以下选择多个类别 : <ul style="list-style-type: none"> • 电池 • 温度 • 风扇 • 处理器 • 内存 • 存储 • 网络
默认 :	已启用所有复选框
说明 :	这个设置允许用户控制将显示在报告中的数据类别。

工作量分析

使用 Dell Precision Optimizer 5.0 及更高版本, 用户能确定工作量的特征并确定资源的使用情况。用户启动分析后, Dell Precision Optimizer 应收集系统资源使用参数, 例如 CPU、内存、磁盘和 GPU。

CPU 情报报告

Dell Precision Optimizer 5.0 及更高版本, 用户可以查看增强的 Intel CPU 信息, 其中包括处理器信息以及每个逻辑处理器的实时数据。Dell Precision Optimizer UI 将以线图的形式显示此类数据。

UI 使用 COM 界面获取关于处理器的下列信息 :

- CPU 名称
- 插槽数量
- 物理核心数
- 超线程状态 (启用/禁用)
- 一级缓存大小 (KB)
- 二级缓存大小 (KB)
- 三级缓存大小 (KB)
- 每个逻辑处理器的 CPU 利用率
- 每个逻辑处理器的 CPU 活动相对频率 (以确定涡轮居住)
- 系统的处理器队列长度
- 系统线程数

CPU 情报报告

仅限受支持的 Nvidia 和 AMD GPU 适配器，Dell Precision Optimizer 5.0 及更高版本将允许用户查看增强的 GPU。此类数据包括 GPU 适配器和软件信息，以及每个 GPU 的实时数据。Dell Precision Optimizer UI 将以线图的形式显示此类数据。

UI 将使用 Dell Precision Optimizer 接口获取以下 GPU 信息：

- GPU 数量
- GPU 驱动程序版本
- GPU 适配器名称（仅限活动 GPU 0）
- 视频 BIOS 版本（仅限活动 GPU 0）
- 帧缓冲大小（仅限活动 GPU 0）

只有用户处于登录状态时，某些 Nvidia 和 AMD 适配器才能提供 GPU 实时数据。

注： 在一些配备 AMD GPU 适配器的移动系统上，当有效负载在 AMD GPU 适配器上运行时，才能显示有效的实时数据。

所有 GPU 的下述实时信息将被收集并且以线图形式显示出来。

- GPU 利用率
- GPU 温度
- GPU 风扇 #0 速度 (%)
- 视频内存利用率

系统诊断报告

Dell Precision Optimizer 5.0 及更高版本允许用户运行“系统诊断”报告。这些是由 Microsoft 提供的标准报告，比如系统报告、电池报告和可靠性报告。用户必须能藉此生成新的报告或查看过去生成的最后一份报告。具有本地管理员权限的用户才能使用此选项。

此功能作为现有 Microsoft 工具的快捷方式。这个仪表板应可以生成或查看下列报告：

- 系统诊断报告，内容包括：
 - 列出系统错误和警告的诊断结果
 - 资源使用情况概述
- 系统可靠性报告，内容包括：
 - 应用程序列表，过去几个星期的 Windows 故障和其他故障
 - 该段时期的信息事件和警告
 - Windows 稳定性参数
- 电池报告（此功能仅在 Windows 8 及更高版本上提供）：
 - 已安装电池详情
 - 最近使用情况和历史记录
 - 电池容量和寿命预测

性能通知

Dell Precision Optimizer 4.0 及更高版本允许您启用“智能通知”。它允许您在以下任意情况下获取通知：

- CPU 利用率过高
- 内存利用率过高
- 磁盘读取或写入操作过多

系统维护

Dell Precision Optimizer 系统维护或 SM 允许您根据从 Dell Command | Update 中提取的下列标准筛选可见或适用的更新：

- 重要程度（关键、建议和可选）
- 类型（硬件驱动程序、应用程序、BIOS 和固件）
- 类别（音频、芯片组、输入、网络或蓝牙、存储、视频及其他）

用户反馈

Dell Precision Optimizer UI 为用户提供选项，以将反馈发送回 Dell。Dell Precision Optimizer UI 提供一个链接/按钮，用户点击后就可以发起此类反馈。UI 会在浏览器中启动一个 URL，打开后，用户将可以使用 Dell 标准表格提供有关 Dell Precision Optimizer 的反馈。

改善 Dell Precision Optimizer

通过 Dell Precision Optimizer 客户体验改善计划，Dell 客户可以影响未来 Dell Precision Optimizer 版本的发展。通过与 Dell 分享有关如何使用 Dell Precision Optimizer 的信息，您可以为产品未来版本的改进做出贡献。

Dell Precision Optimizer 客户体验改善计划遵守所有“Dell 隐私政策”中的条款。收集的数据将限于 Dell Precision Optimizer 使用情况和工作站的服务标签。不会收集任何个人信息数据。您可以随时选择加入或退出该计划。

默认情况下，此功能已禁用。

主题：

- [WMI 提供商](#)
- [DPOCMD.EXE](#)
- [设置命令行开关](#)
- [使用 SCCM 和 WSI](#)
- [KACE](#)

WMI 提供商

Dell Precision Optimizer 5.0 及更高版本将包括一个 Windows Management Instrumentation (WMI) 提供程序，以允许访问以下信息。关于 MOF 的说明，请参考附录 A。以下两个文件是 Dell Precision Optimizer 程序包的组成部分：

- Dell Precision Optimizer WMI 提供程序：dpoProv.mof
- Dell Precision Optimizer SMS MOF 定义文件：sms_def_dpo3.mof
- DDV 报告
- 产品版本
- 最后一次检查更新的时间
- 最后一次系统更新的时间
- 上次配置文件检查
- 配置文件或策略触发历史记录
- 主动配置文件列表
- 性能通知

DPOCMD.EXE

Dell Precision Optimizer 5.0 及更高版本将提供 CLI 工具，dpoCmd.exe，使 IT 管理员具备以下能力：

- 添加一个新的配置文件或政策
- 所有配置文件列表
- 启用或禁用配置文件
- 使用特定的过滤器编排系统分析报告
- 使用过滤器运行 Dell Precision Optimizer Dell 系统更新
- 使用过滤器检查 Dell Precision Optimizer Dell 系统更新
- 导出用户创建的配置文件
- 导入用户创建的配置文件
- 使用 CLI 选项启用/禁用用户界面功能；这些也可以通过使用 Dell Precision Optimizer 安装程序中的新命令行开关进行控制：

表. 6: 命令行开关

控件	定义	默认	命令行开关
ProfileControl	若设定值为 0，则不允许用户启用或禁用配置文件	1	PROFCTRL
ProfileUpdate	若设定值为 0，则不允许用户检查是否有新的配置文件	1	PROFUPD
SystemUpdate	若设定值为 0，则不允许用户检查是否有系统更新	1	SYSUPD
DDVControl	若设定值为 0，不允许用户启用或禁用系统分析报告	1	DDVCTRL

表. 6: 命令行开关 (续)

控件	定义	默认	命令行开关
UserFeedback	如果为 0, 则不允许用户发送 Dell Precision Optimizer 反馈	1	USRFB
WorkloadAnalysis	若设定值为 0, 不允许用户运行工作量分析	1	WKLANL
GfxPlugins	如果为 0, 则不向用户显示 GfxPlugin 选项	1	GFXPLUGINS
ImproveDPO	如果为 0, 则不向用户显示 Dell Precision Optimizer 设置	1	IMPROVEDPO
ISVCertDrvr	如果为 0, 则不允许用户查看/安装经过 ISV 认证的显卡驱动程序。	1	ISVCERTGFX
SmartAlerts	如果为 0, 则不允许用户启用或禁用 Smart 警报	1	SMARTALERT

CLI 的使用情况：

```
dpoCmd.exe -savePolicy <complete_dpx_path>
dpoCmd.exe -saveProfile <complete_dpx_path>
dpoCmd.exe -listProfiles
dpoCmd.exe -enableProfile <profile_guid>
dpoCmd.exe -disableProfile <profile_guid>
dpoCmd.exe -scheduleReports <numReports> <reportDuration> [-r <ddvSubSystem> ] [-r <ddvSubSystem>] ...
```

- **<reportDuration>** 可以为 0、4、6、8、12 中的一个
 - 0 指每日报告
 - 4 指 4 小时报告
 - 6 指 6 小时报告, 以此类推。
- **-r <ddvSubSystem>** 将删除该子系统, 数据将不会显示在生成的 DDV 报告中。<ddvSubSystem> 可以为以下其中一个：
 - 电池
 - 温度
 - 风扇
 - 处理器
 - 内存
 - 网络
 - 存储

```
dpoCmd.exe -cancelReports
```

dpoCmd.exe -enableFeatures <feature> [<feature> ...], 其中 <feature> 可以是以下其中一个：

- PROFCTRL
- PROFUPD
- SYSUPD
- DDVCTRL
- USRFB
- UPGOPT
- WKLANL
- GFXPLUGINS
- IMPROVEDPO
- ISVCERTGFX
- SMARTALERT

dpoCmd.exe -disableFeatures <feature> [<feature> ...], 其中 <feature> 可以是以下其中一个：

- PROFCTRL
- PROFUPD
- SYSUPD
- DDVCTRL
- USRFB
- UPGOPT
- WKLANL
- GFXPLUGINS
- IMPROVEDPO
- ISVCERTGFX
- SMARTALERT

```
dpoCmd.exe -updateNow -criticality:CRO -filter:BDAF -device:ACMSNV <activityLogFileName>
dpoCmd.exe -checkForUpdatesNow -criticality:CRO -filter:BDAF -device:ACMSNV
<activityLogFileName>
```

其中 **-criticality:** 可以为以下其中一个或多个：

- C => 关键
- R => 建议
- O => 选项

其中 **-filter:** 可以为以下其中一个或多个：

- B => BIOS
- D => 驱动程序
- A => 应用
- F => 固件

其中 **-device:** 可以为以下中一个或多个：

- A => 音频
- C => 芯片组
- M => 鼠标或键盘
- S => 存储
- N => 网络或蓝牙
- V => 视频

设置命令行开关

Dell Precision Optimizer 5.0 安装程序提供命令行开关，使 IT 管理员能够控制客户端软件包的某些行为。8.2 小节提到过这个列表。

表. 7: 设置命令行开关

命令行开关	说明
Setup.exe PROFUPD=0 WKLANL=0	安装 Dell Precision Optimizer，在其中，用户将不能检查新的配置文件或运行工作量分析。

此外，新选项 GUI=0 允许 IT 管理员在没有任何 UI 组件的情况下安装 Dell Precision Optimizer 客户端，即 Headless 模式。用户无法控制软件。IT 管理员可以使用新的 CLI 工具来启用或禁用其他运行时功能。

使用 SCCM 和 WSI

SCCM 和 WSI 是 IT 管理员用于集中管理系统和软件应用程序的方法。

Dell Optimizer 支持 SCCM 和 WSI 以进行配置和部署。有关 SCCM 的详细信息，请参阅 www.docs.microsoft.com，有关 WSI 的详细信息，请参阅 www.vmware.com。

有关创建 Dell Optimizer 应用程序包的说明

按照这些步骤创建可在企业所选客户端系统上部署的 Dell Optimizer 软件包。

注：步骤可能会因为您所使用的 SCCM 版本不同而略有差异。

1. 下载安装所需的 Dell Optimizer 文件。
2. 在配置管理器控制台中：
 - 打开软件库页面，然后单击概览 > 应用管理。
 - 右键单击应用程序并选择创建应用程序。
3. 在创建应用程序向导中：
 - 选择手动并且制定应用程序信息。
 - 输入应用程序名称为 **Dell Optimizer 1.0**，然后在应用程序目录中单击下一步。
 - 在部署类型页面中，单击添加。
 - 在创建部署类型向导中，选择类型为脚本安装程序，然后单击下一步。
 - 输入部署类型，然后单击下一步。
 - 在“内容位置”中输入 Dell Optimizer 文件的位置。
 - 将安装程序输入为 “DellOptimizer.exe” /s。
 - 在检测方法选项卡中选择添加语句。
 - 检测规则如下：

```
Setting Type: Registry
Hive: HKEY_LOCAL_MACHINE
Key: Software\Wow6432Node\Microsoft\Windows\CurrentVersion\Uninstall\{D66A3355-
FEA4-4F60-8BAF-D6CBEDB396D8}
```
 - 单击确定以关闭检测规则窗口，在创建部署类型向导中，单击下一步。
 - 用户体验规定如下：
 - a. 安装行为：系统安装。
 - b. 登录要求：无论用户是否登录。
 - c. 安装程序可视性：正常。
 - 在要求选项卡中，单击下一步。
 - 在依赖性选项卡中，单击下一步。
 - 在单击摘要中，单击下一步，验证部署类型是否已成功创建。
 - 关闭创建部署类型向导。
4. 在创建应用程序向导中，单击部署类型选项卡中的下一步，然后单击摘要选项卡中的下一步，确认应用程序已成功创建。

部署应用程序的说明


创建软件包后，按照下述说明将其部署到选定的客户端：

1. 右键应用程序，然后选择部署。
2. 选择想要将 Dell Optimizer 安装到的设备集。
3. 确保自动分配内容以形成依赖选项已选中，单击下一步。
4. 在内容选项卡中，单击添加以选择该分配点。
5. 在部署设置选项卡中有下述：
 - 操作：安装
 - 目的：必需
6. 在调度选项卡中，单击下一步。
7. 在用户体验选项卡中，选择用户通知：在软件中心显示，并仅显示系统重启通知。
8. 在警报选项卡中单击下一步，在摘要选项卡中单击下一步，然后验证部署完成。

验证在客户端系统中部署成功

要验证在客户端系统中部署成功，请执行以下操作：

1. 在客户端系统中打开软件中心，验证是否已安装 Dell Precision Optimizer。

 **注：部署应用程序后，安装可能需要几分钟**

2. 转至 C:\Windows\CCM\Logs 并检查 **AppDiscovery.Log**、**AppIntent.log** 和 **AppEnforce.log**，进行故障排除。

使用 DPOCMD.EXE 更改 Dell Precision Optimizer 客户端行为

执行以下步骤，在目标系统上运行 Dell Precision Optimizer CLI (dpoCmd.exe)，以改变 Dell Precision Optimizer 软件在该系统上的行为。下面的示例介绍了如何使用 dpoCmd.exe 启用 Dell Precision Optimizer 配置文件 (After Effects by Adobe)。

创建一个软件包

要创建软件包，请执行以下操作：

1. 在**配置管理器控制台**中：
 - a. 打开**软件库**页面。
 - b. 单击**概况**选项卡。
 - c. 打开**应用程序管理**选项卡。
 - d. 右键单击**软件包**，然后选择**新建软件包**。
2. 在**创建包和程序向导**中：
 - a. 设置名称：启用 Dell Precision Optimizer 配置文件。
 - b. 确定该文件包的相关信息后，单击**下一步**。
3. 在**程序类型**选项卡中，选择**标准程序**。
4. 在**标准程序**选项卡中：
 - a. 名称：启用 Adobe After Effects
 - b. 命令行：dpoCmd.exe -enableProfile {2F066600-FA52-4F57-890D-2621D39B0BE9}}
 - c. 启动文件夹：C:\program files\dell\ppo
 - d. 运行：正常
 - e. 此程序可以运行：无论用户是否登录
 - f. 运行模式：具有管理权限的运行
 - g. 驱动模式：使用 UNC 名称运行
5. 在**要求**选项卡中，选择**此程序可以在任何平台上运行**。
6. 单击**下一步**，查看软件包摘要，然后确认软件包创建成功。

部署“启用 Dell Precision Optimizer 配置文件”软件包

1. 在**配置管理器控制台**中：
 - a. 打开**软件库**页面。
 - b. 单击**概况**选项卡。
 - c. 打开**应用程序管理**选项卡。
 - d. 单击**软件文件包**。
2. 鼠标右键单击**启用 DPO 配置文件**软件报告，然后选择**部署**。
3. 在**软件部署向导**中：
 - a. 在**常规**选项卡中，单击“浏览”以选择设备集，单击**下一步**。
 - b. 在**内容**选项卡中，单击**添加**以添加一个分配点，然后单击**下一步**。
 - c. “部署设置”选项卡中有下述：
 - 操作：安装
 - 目的：必需
 - 勾选**发送唤醒包**勾选框。
 - d. 在**计划**选项卡中，选择部署时间并确保**重新运行行为**选项设置为**始终重新运行程序**。要立刻部署，单击**新建**，选择**在此事件之后立刻分配：尽快**。
 - e. 在**用户体验**选项卡中，确保一下勾选框被选中。
 - i. 软件安装
 - ii. 系统重启（如果完成安装有此要求）

- iii. 截止时或维护期内变更生效（要求重启）。
- f. 在**分配点**选项卡中：
 - i. 部署选项：从分配点下载内容，然后在本地运行。
 - ii. 确保**允许客户端与同一子网上的其他客户端共享内容**选项被选中。
- g. 单击**下一步**，验证部署成功完成。

SSRS 报告

作为系统管理员，可以基于从 Dell Precision Optimizer WMI 提供程序收集的数据创建各种报告。如果想这样做，可以纳入 `sms_def_dpo3.mof` 以扩展数据库的定义，并从 Dell Precision Optimizer 客户端系统中提取相应的数据。您可以选择想要查看部分或所有数据元素。默认设置是选择所有的 Dell Precision Optimizer 数据元素。

导入 sms_def_dpo3.mof 文件以设置硬件资源清册类

1. 在**配置管理器**控制台中：
 - a. 打开**管理页**。
 - b. 单击**概况**选项卡。
 - c. 单击**站点配置**选项卡，选择**客户端设置**。
2. 鼠标右键点击一个现有的“客户端设置”，选择属性或创建一个新的自定义客户端设置。
3. 在**硬件资源清册**选项卡中，选择**设置类**。
4. 选择**导入**，浏览至 `sms_def_dpo3.mof` 文件位置。
5. 单击**确定**导入文件，然后关闭**硬件资源清册类**窗口。

SQL 数据库中填充收集到的数据后，可以创建不同类型的 Dell Precision Optimizer 报告。Dell Precision Optimizer 软件中提供了样例 (*.RDL)。您可以导入这些 RDL 文件，将它们连接到您的 SQL 数据库，然后运行报告。

要导入 .RDL 文件

1. 打开 SQL 服务器数据工具。
2. 在“解决方案浏览器”中，鼠标右键点击您想要向其添加 RDL 文件的文件夹。
 - a. 选择**添加现有项目**。
 - b. 选择 .RDL 文件。
3. 文件导入后，打开文件并且选择**设计**选项卡。

确定 .RDL 文件使用的是正确的数据源

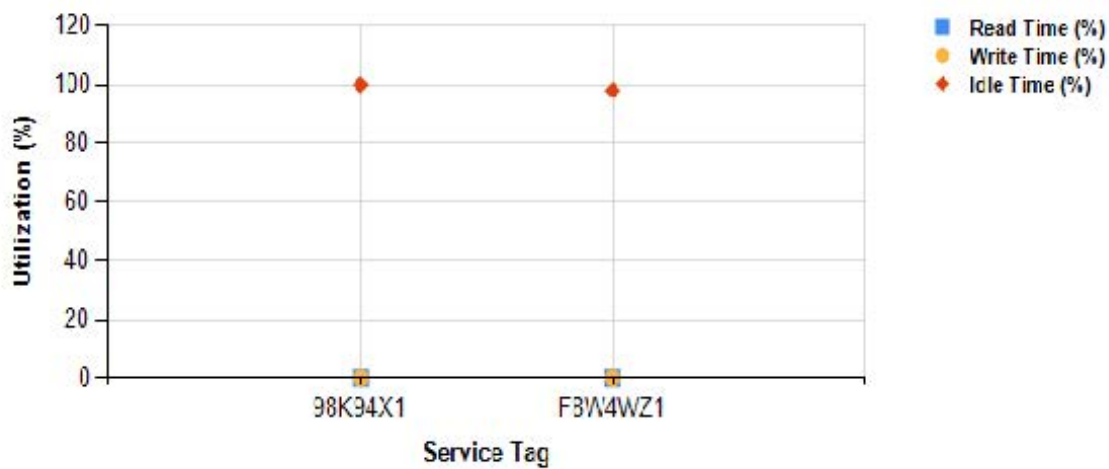
1. 在**报告数据**面板中，单击**数据集**并鼠标右键单击其中一个数据集，选择**数据集属性**。
2. 在**数据集属性**窗口中：
 - a. 选中**使用一个嵌入我报表内的数据集**。
 - b. 在**数据源**下，单击**新建.....**。
 - c. 在**数据源属性**窗口中，选择**使用共享数据源引用**，然后选择正确的数据源。
 - d. 单击**确定**。
3. 对**数据集**文件夹中的所有其他数据集，重复步骤 1 和 2。

跨多个系统的磁盘信息

此报告使用多个系统的最新系统分析报告，显示其磁盘信息。

表. 8: 跨多个系统的磁盘信息

Service Tag 服务标签	读取字节 (MB)	写入字节 (MB)	读取时间 (%)	写入时间 (%)	空闲时间 (%)
98K94X1	0	0	0	0	100
F8W4WZ1	0	460	0	0	98



单个系统的磁盘信息

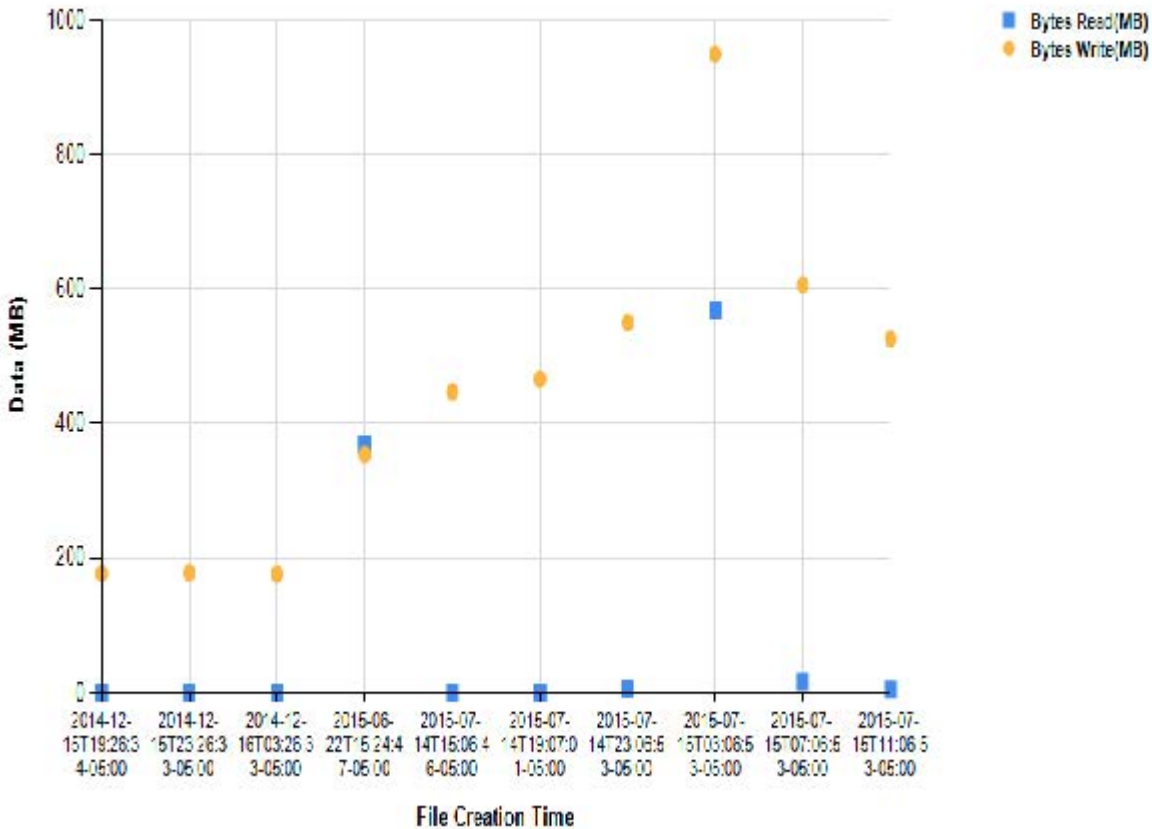
此报告显示单个系统跨多个报告的磁盘信息。

表. 9: 单个系统的磁盘信息

报告日期	读字节 (MB)	写字节 (MB)	读时间 (%)	写时间 (%)	空闲时间 (%)	加电小时数
2015-07-15T11:06:53-05:00	5	526	0	0	98	4
2015-07-15T07:06:53-05:00	16	606	0	1	98	4
2015-07-15T03:06:53-05:00	568	949	0	0	98	3,1
2015-07-14T23:06:53-05:00	6	550	0	0	98	4
2015-07-14T19:07:01-05:00	0	466	0	0	98	4
2015-07-14T15:06:46-05:00	0	447	0	0	98	3.95
2015-06-22T15:24:47-05:00	369	354	0	0	96	3.48

表. 9: 单个系统的磁盘信息 (续)

报告日期	读字节 (MB)	写字节 (MB)	读时间 (%)	写时间 (%)	空闲时间 (%)	加电小时数
2014-12-16T03:26:33-05:00	0	176	0	0	99	3.43
2014-12-15T23:26:33-05:00	0	178	0	0	99	4
2014-12-15T19:26:34-05:00	0	177	0	0	98	3.98



KACE

这是 IT 管理员现在使用的方法之一，集中管理系统和软件应用程序。在本节中，将提供说明 IT 管理员如何能使用 KACE 设备来管理 Dell Precision Optimizer 应用程序的示例。

注：以下步骤在 KACE 设备 6.4.120756 K1000 上进行了验证。如果使用另一个版本的 KACE，则实际步骤可能会稍有不同。

有关使用 KACE 部署 Dell Precision Optimizer 的说明

IT 管理员可使用以下步骤，将 Dell Precision Optimizer 应用程序部署到其域中的选定客户端系统上。

创建安装脚本

从您的 KACE 设备控制台：

1. 导航至脚本->脚本->选择操作->新建。
2. 在脚本详细信息页面上输入以下信息：
 - 名称 -> 安装 DPO

- **已启用** -> 选中复选框
- **类型** -> 在线 K 脚本
- **说明** -> 此脚本将安装 DPO 客户端软件
- **部署** -> 无
- **操作系统** -> 清除**选择特定操作系统**并选择 Microsoft Windows
- **(备用)操作系统** -> 选择特定 Windows 操作系统进行部署
- **Windows 运行方式** -> 本地系统
- **通知** -> 无
- **计划** -> 无
- **依赖项** -> 将所有 DPO 软件包文件添加为新依赖项
- **任务** -> 选择新任务
- **验证** -> 单击**添加**，然后选择**启动程序**，输入以下数据：
 - **目录** -> \$(KACE_DEPENDENCY_DIR)
 - **文件** -> Poalnstaller.exe
 - **等待完成** -> 已选中
 - **可见性** -> 已取消选中
 - **参数** -> LOGFILE=c:\temp\dpo.log /s
 - 保存更改。
- **成功后** -> 无
- **补救** -> 无
- **补救成功后** -> 无
- **一次补救失败** -> 无
- **任务** -> 选择新任务
- **验证** -> 单击**添加**，然后选择**验证文件存在**，输入以下数据：
 - 目录：C:\Program Files\Dell\DPO
 - 文件：dpoCmd.exe
 - 保存更改。
- **成功后** -> 无
- **补救** -> 无
- **补救成功后** -> 无
- **一次补救失败** -> 无
- 单击**保存**。

在选定系统上运行安装脚本

从您的 KACE 设备控制台：

1. 单击**脚本**，然后选择**立即运行**。
2. 从“脚本”下拉菜单中选择**安装 DPO**。
3. 在**标签**下，选择要部署 Dell Precision Optimizer 的 Windows 设备的标签，或者手动选择一组系统。
4. 单击**立即运行**。
5. 单击**保存**。

这将启动 Dell Precision Optimizer 客户端软件在所选系统上的部署。也可以自定义这些步骤。

使用 DPOCMD.EXE 更改 Dell Precision Optimizer 客户端行为

执行以下步骤，在目标系统上运行 Dell Precision Optimizer CLI (dpoCmd.exe)，以改变 Dell Precision Optimizer 软件在该系统上的行为。下面的示例介绍了如何使用 dpoCmd.exe 启用 Dell Precision Optimizer 配置文件 (After Effects by Adobe)。

创建安装脚本

从您的 KACE 设备控制台：

1. 导航至**脚本->脚本->选择操作->新建**。
2. 在**脚本详细信息**页面上输入以下信息：

- **名称** -> 启用 DPO 配置文件 After Effects
- **已启用** -> 选中复选框
- **类型** -> 在线 K 脚本
- **说明** -> 此脚本将在 DPO 客户端软件下启用 **After Effects 配置文件**
- **部署** -> 无
- **操作系统** -> 清除**选择特定操作系统**并选择 Microsoft Windows
- **(备用)操作系统** -> 选择特定 Windows 操作系统进行部署
- **Windows 运行方式** -> 本地系统
- **通知** -> 无
- **计划** -> 无
- **依赖性** -> 无
- **任务** -> 选择新任务
- **验证** -> 单击**添加**，然后选择**启动程序**，输入以下数据：
 - **目录** -> C:\Program Files\Dell\PPO
 - **文件** -> dpoCmd.exe
 - **等待完成** -> 已选中
 - **可见性** -> 已取消选中
 - **参数** -> -enableProfile {2F066600-FA52-4F57-890D-2621D39B0BE9}
 - 保存更改。
- **成功后** -> 无
- **补救** -> 无
- **补救成功后** -> 无
- **一次补救失败** -> 无
- **任务** -> 选择新任务
- **验证** -> 单击**添加**，然后选择**验证文件存在**，输入以下数据：
 - **目录** -> C:\Program Files\Dell\DPO
 - **文件** -> dpoCmd.exe
 - 保存更改。
- **成功后** -> 无
- **补救** -> 无
- **补救成功后** -> 无
- **一次补救失败** -> 无
- 单击**保存**。

在选定系统上运行此脚本

从您的 KACE 设备控制台：

1. 单击**脚本**，然后选择**立即运行**。
2. 从“脚本”下拉菜单中选择**启用 DPO 配置文件 After Effects**。
3. 在**标签**下，选择要部署 Dell Precision Optimizer 的 Windows 设备的**标签**，或者手动选择一组系统。
4. 单击**立即运行**。

自定义报告

以下示例介绍如何使用 WMI 类从 Dell Precision Optimizer 客户端收集一些数据，并创建自定义报告。Dell Precision Optimizer 提供一大组 WMI 类，以便 IT 管理员能创建各种各样的报告。以下步骤说明了如何创建 Dell Precision Optimizer 报告。IT 管理员可以自定义哪些数据必须收集以及了解如何展示这些数据。

创建自定义资源清册规则

从您的 KACE 设备控制台：

1. 单击**资源清册**，然后选择**软件**。
2. 选择**操作**，然后选择**新建**。
3. 在**软件详细信息**页面上输入以下信息
 - **名称** -> DPO 示例资源清册

- **版本** -> v1
 - **发布程序** -> Dell
 - **支持操作系统** -> 选择操作系统
 - **自定义资源清册规则** -> ShellCommandTextReturn(wmic /namespace:\root\cimv2\DPO Path DPO_Profiles get /ALL)
 - **单击保存。**
4. 单击返回新自定义资源清册记录，并将鼠标悬停在刚创建的记录上。记下 URL 末尾的标识 (ID 号)。可以在页面左下角看到包含该 ID 号的 URL。稍后您需要它来创建报告。

强制资源清册收集

从您的 KACE 设备控制台：

1. 单击**资源清册**，然后选择**设备**。
2. 选择已安装 Dell Precision Optimizer 的设备（可以将 SmartLabel 用于此目的）。
3. 选择**操作**，然后选择**强制资源清册**。
4. 完成资源清册周期后，导航到已联机的选定设备之一中。
5. 在**设备详细信息**页面中，单击**软件**，展开**自定义资源清册字段**。这会显示配置文件及其当前状态列表。

注：现在，您已设置“脚本”和“自定义资源清册”，并在所有所需的系统上完成了“自定义资源清册”周期，是时候利用 K1000 的报告功能。虽然您肯定可以使用基于向导的报告从 K1000 抽取 Dell Precision Optimizer 信息，但我们仍将使用自定义 SQL 报告处理和过滤我们的信息，以生成有用的报告。

创建报告

从您的 KACE 设备控制台：

1. 单击**报告**，然后选择**报告**。
2. 选择**操作**，并选择**新建 (SQL)**。
3. 在**报告详细信息**页面上输入以下数据：
 - 标题 -> Dell Precision Optimizer 示例配置文件报告
 - 说明 -> 这是示例 Dell Precision Optimizer 报告
 - 类别 <任意> 或新类别 -> DPO 报告
 - SQL ->

```
SELECT
MACHINE.NAME AS Name,
MACHINE.IP AS Ip,
MACHINE.USER_LOGGED AS LoggedUser,
MACHINE.CS_MANUFACTURER AS Manufacturer,
MACHINE.CS_MODEL AS Model,
MACHINE_CUSTOM_INVENTORY.STR_FIELD_VALUE AS MACHINE_CUSTOM_INVENTORY_XXXX,
COUNT(MACHINE_CUSTOM_INVENTORY.STR_FIELD_VALUE) AS Total_Devices FROM
MACHINE_CUSTOM_INVENTORY
JOIN MACHINE ON MACHINE.ID = MACHINE_CUSTOM_INVENTORY.ID
WHERE MACHINE_CUSTOM_INVENTORY.SOFTWARE_ID = XXXX
GROUP BY MACHINE_CUSTOM_INVENTORY.STR_FIELD_VALUE
ORDER BY MACHINE.CS_MANUFACTURER ASC, MACHINE.CS_MODEL ASC
```

将 XXXX 替换为您自定义资源清册 ID 号，该 ID 号是当我们创建自定义资源清册规则时收集的。

4. 单击**保存**。

运行报告

从您的 KACE 设备控制台：

1. 单击**报告**，然后选择**报告**。
2. 搜索 **DPO** 以查看您的报告。
3. 选择所需的报告，例如 DPO 示例配置文件报告，然后选择所需的报告格式，比如 HTML。

附录 A——dpoCmd.exe 退出代码

```
typedef enum { EXIT_CODE_SUCCESS = (int) 0,
EXIT_CODE_ERROR_GET_COMP_NAME = (int) 1,
EXIT_CODE_COINIT_FAILED = (int) 2,
EXIT_CODE_PROFILE_NOT_FOUND = (int) 3,
EXIT_CODE_ERROR = (int) 4,
EXIT_CODE_ERROR_GET_COMP_SID = (int) 5,
EXIT_CODE_COINIT_SECURITY_FAILED = (int) 6,
EXIT_CODE_MISSING_COM_INTERFACE = (int) 7,
EXIT_CODE_PROFILE_GETSTATE_FAILED = (int) 8,
EXIT_CODE_PROFILE_SETSTATE_FAILED = (int) 9,
EXIT_CODE_MISSING_STORE = (int) 40,
EXIT_CODE_NULL_STORE = (int) 41,
EXIT_CODE_READFILE_FAILED = (int) 42,
EXIT_CODE_WRITEFILE_FAILED = (int) 43,
EXIT_CODE_OUT_OF_MEM = (int) 44,
EXIT_CODE_SAVE_STORE_FAILED = (int) 45,
EXIT_CODE_ENCRYPTION_FAILED = (int) 46,
EXIT_CODE_DDV_REPORTS_ALREADY_SCHEDULED = (int) 60,
EXIT_CODE_ENABLE_DDV_FAILED = (int) 61,
EXIT_CODE_SET_DDV_FILTERS_FAILED = (int) 62,
EXIT_CODE_INVALID_DDV_REPORT_DURATION = (int) 63,
EXIT_CODE_SET_REPORT_FREQ_FAILED = (int) 64,
EXIT_CODE_SET_REPORT_NUM_FAILED = (int) 65,
EXIT_CODE_DISABLE_DDV_FAILED = (int) 66,
EXIT_CODE_ERROR_ENUM_DDV_SUBSYSTEMS = (int) 67,
EXIT_CODE_DO_UPDATE_FAILED = (int) 70,
EXIT_CODE_PREV_CHECK_FAILED = (int) 71,
EXIT_CODE_PREV_UPDATE_ACTION_IN_PROGRESS = (int) 72,
EXIT_CODE_REGISTER_EVENTS_FAILED = (int) 73,
EXIT_CODE_CHECK_UPDATE_FAILED = (int) 74,
EXIT_CODE_SET_FEATURE_FAILED = (int) 80,
EXIT_CODE_UI_IS_RUNNING = (int) 98,
EXIT_CODE_USAGE_ERROR = (int) 99
} EXIT_CODE;
```

附录 B - WMI 类定义文件

```

/*****
* DPOProv.mof
* Last Updated: 03/06/2015
* This file defines the classes exposed by "dpoProv".
*****/

#pragma autorecover

#pragma namespace("\\\\.\\root\\cimv2")
instance of __Namespace
{
Name = "DPO" ;
};
#pragma namespace("\\\\.\\root\\cimv2\DPO")
/*****
* DPO_HardwareInfo
* There is one instance of this class for each summary
* file present on the system.
* The instance will contain all the hardware data and
* the statistics from the summary file.
* HardwareInfoGUID is the unique ID from the summary file.
* HardwareInfoGUID associates this instance with
* with instances of other dependent classes that may have
* multiple instances (eg. DPO_Monitor. DPO_BiosInternalLogs etc.)
*****/
[Description("An instance of this class contains all the hardware data and "
" statistics from a summary file."),
Dynamic,Provider("DPOProv") ]
class DPO_HardwareInfo
{
[
Description("Unique ID from the summary file."),
Key
]string HardwareInfoGUID;
[Description("Revision of Dell Data Vault.")]
string DDV_Revision;
[Description("Date/time when the summary file was created.")]
string File_Creation_Datetime;
[Description("Date/time when Dell Data Vault began collecting the raw data.")]
string Data_Begining_Date;
[Description("Date/time when Dell Data Vault stopped collecting the raw data and generated
the statistics.")]
string Data_Ending_Date;
[Description("Indicates whether this summary was created on service startup, regular timer or
on demand.")]
string Summary_Type;
[Description("Service Tag of the system obtained from the BIOS.")]
string System_Service_Tag;
[Description("Customer Name 1")]
string Customer_Name_1;
[Description("Customer Name 2")]
string Customer_Name_2;
[Description("Customer Name 3")]
string Customer_Name_3;
[Description("Customer specific data 1")]
string Customer_Defined_1;
[Description("Customer specific data 2")]
string Customer_Defined_2;
[Description("Customer specific data 3")]
string Customer_Defined_3;
[Description("System Model")]
string System_Model;
[Description("ePPID of the motherboard obtained from the BIOS.")]

```

```

string          Motherboard_ePPID;
[Description("Current BIOS Version.")]
string          BIOS_Version;
[Description("Type of the system eg. Laptop or Desktop")]
string          System_Type;
[Description("Serial number of the CPU.")]
string          Processor_Serial_Number;
[Description("Processor name.")]
string          Processor_Information;
[Description("Processor speed.")]
string          Processor_Speed;
[Description("Average of the percentage LCD brightness when the system was on AC.")]
sint16         LCD_Avg_Brightness_AC_Pct;
[Description("Average of the percentage LCD brightness when the system was on battery.")]
sint16         LCD_Avg_Brightness_DC_Pct;
[Description("Video Controller name.")]
string          Video_Controller;
[Description("Video controller memory size.")]
sint32         Video_RAM_Bytes;
[Description("Number of displays on the system.")]
sint16         Number_of_Displays;
[Description("Operating system, 32bit vs 64bit & system locale information.")]
string          Operating_System;
[Description("AC adapter power (for notebooks only).")]
string          AC_Adapter_Type_W;
[Description("Number of hours the system was on.")]
real32         Hours_On;
[Description("Number of hours the system was on when powered by AC.")]
real32         Hours_On_AC;
[Description(" Number of hours the system was on when powered by battery (for notebooks
only).")]
real32         Hours_On_Batt;
[Description("Number of times the AC adapter was inserted in the system (for notebooks
only).")]
sint16         No_Of_AC_Insertions;
[Description("Number of times the primary battery was inserted into the system (for notebooks
only).")]
// NameChange sint16         Number_Of_Battery_Insertions;
sint16         Num_Battery_Insertions;
[Description("Number of times the system was running on battery (for notebooks only).")]
sint16         Number_Of_Battery_Sessions;
[Description("Number of battery sessions where the session was between 0 to 30 mins (for
notebooks only).")]
sint16         Battery_Sessions_0_30mins;
[Description("Number of battery sessions where the session was between 30 mins to 1 hr (for
notebooks only).")]
sint16         Battery_Sessions_30min_1hr;
[Description("Number of battery sessions where the session was between 1 to 2 hrs (for
notebooks only).")]
sint16         Battery_Sessions_1_2hr;
[Description("Number of battery sessions where the session was between 2 to 3 hrs (for
notebooks only).")]
sint16         Battery_Sessions_2_3hr;
[Description("Number of battery sessions where the session was between 3 to 4 hrs (for
notebooks only).")]
sint16         Battery_Sessions_3_4hr;
[Description("Number of battery sessions where the session was between 4 to 6 hrs (for
notebooks only).")]
sint16         Battery_Sessions_4_6hr;
[Description("Number of battery sessions where the session was between 6 to 8 hrs (for
notebooks only).")]
sint16         Battery_Sessions_6_8hr;
[Description("Number of battery sessions where the session was between 8 to 12 hrs (for
notebooks only).")]
sint16         Battery_Sessions_8_12hr;
[Description("Number of battery sessions where the session was greater than 12 hrs (for
notebooks only).")]
sint16         Battery_Sessions_GT12hr;
[Description("Number of system shutdowns.")]
sint16         S5_Requests;
[Description("Number of times the system entered Hibernate state (S4).")]
sint16         S4_Requests;
[Description("Total time the system was in Hibernate state (S4).")]

```

```

real32          S4_mins;
[Description("Number of times the system was in Hibernate state (S4) where the time in S4 was
between 0 to 30 mins.")]
sint16          S4_Event_Bin_0_30_mins;
[Description("Number of times the system was in Hibernate state (S4) where the time in S4 was
between 30 mins to 1 hr.")]
sint16          S4_Event_Bin_30_60_mins;
[Description("Number of times the system was in Hibernate state (S4) where the time in S4 was
between 1 hr to 2 hrs.")]
sint16          S4_Event_Bin_60_120_mins;
[Description("Number of times the system was in Hibernate state (S4) where the time in S4 was
between 2 to 4 hrs.")]
sint16          S4_Event_Bin_120_240_mins;
[Description("Number of times the system was in Hibernate state (S4) where the time in S4 was
between 4 to 8 hrs.")]
sint16          S4_Event_Bin_240_480_mins;
[Description("Number of times the system was in Hibernate state (S4) where the time in S4 was
between 8 to 16 hrs.")]
sint16          S4_Event_Bin_480_960_mins;
[Description("Number of times the system was in Hibernate state (S4) where the time in S4 was
greater than 16 hrs.")]
sint16          S4_Event_Bin_GT_960_mins;
[Description("Number of times the system entered Standby/Sleep state (S3).")]
sint16          S3_Requests;
[Description("Total time the system was in Standby/Sleep state (S3).")]
real32          S3_mins;
[Description("Number of times the system was in Standby/Sleep state (S3) where the time in S3
was between 0 to 30 mins.")]
sint16          S3_Event_Bin_0_30_mins;
[Description("Number of times the system was in Standby/Sleep state (S3) where the time in S3
was between 30 mins to 1 hr.")]
sint16          S3_Event_Bin_30_60_mins;
[Description("Number of times the system was in Standby/Sleep state (S3) where the time in S3
was between 1 hr to 2 hrs.")]
sint16          S3_Event_Bin_60_120_mins;
[Description("Number of times the system was in Standby/Sleep state (S3) where the time in S3
was between 2 to 4 hrs.")]
sint16          S3_Event_Bin_120_240_mins;
[Description("Number of times the system was in Standby/Sleep state (S3) where the time in S3
was between 4 to 8 hrs.")]
sint16          S3_Event_Bin_240_480_mins;
[Description("Number of times the system was in Standby/Sleep state (S3) where the time in S3
was between 8 to 16 hrs.")]
sint16          S3_Event_Bin_480_960_mins;
[Description("Number of times the system was in Standby/Sleep state (S3) where the time in S3
was greater than 16 hrs.")]
sint16          S3_Event_Bin_GT_960_mins;
[Description("Average CPU consumption for all processors combined.")]
real32          Avg_CPU_Consumption;
[Description("Number of times the CPU consumption was 0%.")]
sint16          CPU_0_Pct;
[Description("Number of times the CPU consumption was between 0 to 20%.")]
sint16          CPU_1_20_Pct;
[Description("Number of times the CPU consumption was between 20 to 40%.")]
sint16          CPU_20_40_Pct;
[Description("Number of times the CPU consumption was between 40 to 60%.")]
sint16          CPU_40_60_Pct;
[Description("Number of times the CPU consumption was between 60 to 80%.")]
sint16          CPU_60_80_Pct;
[Description("Number of times the CPU consumption was between 80 to 100%.")]
sint16          CPU_80_100_Pct;
[Description("Average CPU throttle (for all processors combined).")]
real32          Avg_CPU_Throttle;
[Description("Number of times the CPU throttle was 0%.")]
sint16          Throttle_0_Pct;
[Description("Number of times the CPU throttle was between 0 to 25%.")]
sint16          Throttle_1_25_Pct;
[Description("Number of times the CPU throttle was between 25 to 50%.")]
sint16          Throttle_25_50_Pct;
[Description("Number of times the CPU throttle was between 50 to 75%.")]
sint16          Throttle_50_75_Pct;
[Description("Number of times the CPU throttle was between 75 to 100%.")]
sint16          Throttle_75_100_Pct;

```

```

[Description("Percentage of time the processor (all processors combined) was in C1 state.")]
sint16          C1_State_Pct;
[Description("Percentage of time the processor (all processors combined) was in C2 state.")]
sint16          C2_State_Pct;
[Description("Percentage of time the processor (all processors combined) was in C3 state.")]
sint16          C3_State_Pct;
[Description("Percentage of time the processor (all processors combined) was in C0 state.")]
sint16          C0_State_Pct;
[Description("Number of LID transitions. One open-close is considered as one transition.")]
sint16          Lid_Transitions;
[Description("Number of hours the system was ON with LID open.")]
real32          Lid_Hours_Open;
[Description("Number of hours the system was ON with LID closed.")]
real32          Lid_Hours_Closed;
[Description("Number of dock events.")]
sint16          Number_Dock_Events;
[Description("Total system RAM memory.")]
string          System_RAM_Bytes;
[Description("Total system RAM memory in GB.")]
real32          System_RAM_GB;
[Description("Percentage of time the system had to access hard disk to resolve page
faults.")]
sint16          pgs_per_sec_pct;
[Description("Minimum number of pages read from or written to the disk to resolve hard page
faults.")]
sint32          min_pgs_per_sec;
[Description("Maximum number of pages read from or written to the disk to resolve hard page
faults.")]
sint32          max_pgs_per_sec;
[Description("Average number of pages read from or written to the disk to resolve hard page
faults.")]
real32          avg_pgs_per_sec;
[Description("Percentage of time the system had between 0 to 256 MB of free physical
memory.")]
real32          FreeMem_0_256MB_Pct;
[Description("Percentage of time the system had between 256 MB to 512 MB of free physical
memory.")]
real32          FreeMem_256_512MB_Pct;
[Description("Percentage of time the system had between 512 MB to 768 MB of free physical
memory.")]
real32          FreeMem_512_768MB_Pct;
[Description("Percentage of time the system had between 768 MB to 1024 MB of free physical
memory.")]
real32          FreeMem_768_1024MB_Pct;
[Description("Percentage of time the system had between 1024 MB to 1280 MB of free physical
memory.")]
real32          FreeMem_1024_1280MB_Pct;
[Description("Percentage of time the system had between 1280 MB to 1536 MB of free physical
memory.")]
real32          FreeMem_1280_1536MB_Pct;
[Description("Percentage of time the system had between 1536 MB to 1792 MB of free physical
memory.")]
real32          FreeMem_1536_1792MB_Pct;
[Description("Percentage of time the system had between 1792 MB to 2048 MB of free physical
memory.")]
real32          FreeMem_1792_2048MB_Pct;
[Description("Percentage of time the system had between 2048 MB to 2304 MB of free physical
memory.")]
real32          FreeMem_2048_2304MB_Pct;
[Description("Percentage of time the system had between 2304 MB to 2560 MB of free physical
memory.")]
real32          FreeMem_2304_2560MB_Pct;
[Description("Percentage of time the system had between 2560 MB to 2816 MB of free physical
memory.")]
real32          FreeMem_2560_2816MB_Pct;
[Description("Percentage of time the system had between 2816 MB to 3072 MB of free physical
memory.")]
real32          FreeMem_2816_3072MB_Pct;
[Description("Percentage of time the system had more than 3072 MB of free physical memory.")]
real32          FreeMem_GT3072MB_Pct;
[Description("Percentage of time the system had between 0 to 256 MB of physical memory
available to processes running on the computer.")]
real32          AvailMem_0_256MB_Pct;

```

```

[Description("Percentage of time the system had between 256 MB to 512 MB of physical memory
available to processes running on the computer.")]
real32      AvailMem_256_512MB_Pct;
[Description("Percentage of time the system had between 512 MB to 768 MB of physical memory
available to processes running on the computer.")]
real32      AvailMem_512_768MB_Pct;
[Description("Percentage of time the system had between 768 MB to 1024 MB of physical memory
available to processes running on the computer.")]
real32      AvailMem_768_1024MB_Pct;
[Description("Percentage of time the system had between 1024 MB to 1280 MB of physical memory
available to processes running on the computer.")]
real32      AvailMem_1024_1280MB_Pct;
[Description("Percentage of time the system had between 1280 MB to 1536 MB of physical memory
available to processes running on the computer.")]
real32      AvailMem_1280_1536MB_Pct;
[Description("Percentage of time the system had between 1536 MB to 1792 MB of physical
memory available to processes running on the computer.")]
real32      AvailMem_1536_1792MB_Pct;
[Description("Percentage of time the system had between 1792 MB to 2048 MB of physical memory
available to processes running on the computer.")]
real32      AvailMem_1792_2048MB_Pct;
[Description("Percentage of time the system had between 2048 MB to 2304 MB of physical memory
available to processes running on the computer.")]
real32      AvailMem_2048_2304MB_Pct;
[Description("Percentage of time the system had between 2304 MB to 2560 MB of physical memory
available to processes running on the computer.")]
real32      AvailMem_2304_2560MB_Pct;
[Description("Percentage of time the system had between 2560 MB to 2816 MB of physical memory
available to processes running on the computer.")]
real32      AvailMem_2560_2816MB_Pct;
[Description("Percentage of time the system had between 2816 MB to 3072 MB of physical memory
available to processes running on the computer.")]
real32      AvailMem_2816_3072MB_Pct;
[Description("Percentage of time the system had more than 3072 MB of physical memory
available to processes running on the computer.")]
real32      AvailMem_GT3072MB_Pct;
[Description("Average Processor Queue Length.")] real32 Average_PQL; [Description("Minimum
Processor Queue Length.")]
sint16      Min_PQL;
[Description("Maximum Processor Queue Length.")]
sint16      Max_PQL;
[Description("Percentage of time the system has PQL = 0.")]
real32      PQL_0_Pct;
[Description("Percentage of time the system has PQL = 1.")]
real32      PQL_1_Pct;
[Description("Percentage of time the system has PQL = 2.")]
real32      PQL_2_Pct;
[Description("Percentage of time the system has PQL = 3.")]
real32      PQL_3_Pct;
[Description("Percentage of time the system has PQL = 4.")]
real32      PQL_4_Pct;
[Description("Percentage of time the system has PQL = 5.")]
real32      PQL_5_Pct;
[Description("Percentage of time the system has PQL between 5 and 10.")]
real32      PQL_5_10_Pct;
[Description("Percentage of time the system has PQL between 10 and 20.")]
real32      PQL_10_20_Pct;
[Description("Percentage of time the system has PQL > 20.")]
real32      PQL_GT20_Pct;
[Description("Average value of total system thread count.")]
real32      Average_ThreadCount;
[Description("Minimum value of total system thread count.")]
sint64      Min_ThreadCount;
[Description("Maximum value of total system thread count.")]
sint64      Max_ThreadCount;
[Description("Standard Deviation value of total system thread count.")]
real32      Std_Dev_ThreadCount; [Implemented]
void DeleteInstance ();
};
/*****
* DPO_Monitor
* This has the monitor information from a summary log. There
* may be multiple instances of this class for each summary file.

```

```

*****/
[Description("Monitor information from the summary log file. This information is extracted
from the EDID data"
" in the registry"),
Dynamic,Provider("DPOProv") ]
class DPO_Monitor
{
[
Description("Unique ID from the summary file."),
Key
]string
HardwareInfoGUID;
[
Description("Monitor index number, starting from 0."),
Key
]sint16
Index;
[Description("Type of monitor (Dell or Non-Dell).")]
string
Monitor_Type;
[Description("Model name of the monitor.")]
string
Model_Name;
[Description("Serial number of the monitor.")]
string
Serial;
[Description("Any vendor specific monitor data.")]
string
Vendor_Specific_Data;
};

/*****
* DPO_HardwareInfoToMonitor
* This class associates DPO_Monitor instance(s) with an
* instance of DPO_HardwareInfo.
*****/
[ Association : ToInstance,
Description("This class associates DPO_Monitor instance(s) "
"with an instance of DPO_HardwareInfo."),
dynamic:ToInstance,
PROVIDER("DPOProv"):ToInstance
]
class DPO_HardwareInfoToMonitor
{
[key] DPO_HardwareInfo REF Antecedent;
[key] DPO_Monitor REF Dependent;
};

/*****
* DPO_BiosInternalLogs
* This has the BIOS logs information from a summary log. There
* may be multiple instances of this class for each summary file.
*****/
[Description("BIOS logs: All system logs such as BIOS, Diagnostics, IPMI, SMBIOS, SPD logs
etc."),
Dynamic,Provider("DPOProv") ]
class DPO_BiosInternalLogs
{
[
Description("Unique ID from the summary file."),
Key
]string
HardwareInfoGUID;
[Description("Source of bios log entry. E.g. BIOS, diagnostics, IPMI etc.")]
string
Name;
[Description("BIOS log entry's time stamp.")]
string
Time;
[Description("BIOS log sub type based on source of current log entry.")]
string
LogType;
[Description("Event Code.")]
string
EventCode;
[Description("Description of current log entry.")]
string
Descr;
};

/*****
* DPO_HardwareInfoToBiosInternalLogs
* This class associates DPO_HardwareInfoToBiosInternalLogs
* instance(s) with an instance of DPO_HardwareInfo.
*****/
[
Association : ToInstance,

```

```

Description("This class associates DPO_HardwareInfoToBiosInternalLogs"
"instance(s) with an instance of DPO_HardwareInfo."),
dynamic:ToInstance,
PROVIDER("DPOProv"):ToInstance
]
class DPO_HardwareInfoToBiosInternalLogs
{
[key] DPO_HardwareInfo          REF          Antecedent;
[key] DPO_BiosInternalLogs      REF          Dependent;
};
/*****
* DPO_WWAN
* This has the Wireless WAN adapter information from a summary
* log. There may be multiple instances of this class for each
* summary file.
*****/
[Description("Wireless WAN adapter information."),
Dynamic,Provider("DPOProv")]
class DPO_WWAN
{
[
Description("Unique ID from the summary file."),
Key
]string HardwareInfoGUID;

[Description("Device name.")]
string Device_Name;

[Description("IMEI number.")]
string IMEI; };
/*****
* DPO_HardwareInfoToWWAN
* This class associates DPO_WWAN instance(s) with an
* instance of DPO_HardwareInfo.
*****/
[
Association : ToInstance,
Description("This class associates DPO_WWAN instance(s) with "
"an instance of DPO_HardwareInfo."),
dynamic:ToInstance,
PROVIDER("DPOProv"):ToInstance
]
class DPO_HardwareInfoToWWAN
{
[key] DPO_HardwareInfo          REF          Antecedent;
[key] DPO_WWAN                  REF          Dependent;
};
/*****
* DPO_Battery
* This has the battery information from a summary log. There
* may be multiple instances of this class for each summary file.
*****/
[Description("Battery information including charge, discharge and dwell statistics."),
Dynamic,Provider("DPOProv") ]
class DPO_Battery
{
[
Description("Unique ID from the summary file."),
Key
] string HardwareInfoGUID;
[
Description("Index number of the battery device starting from 1."),
Key
]sint16          Index;
[Description("Manufacture date.")]
string          Manufacture_Date;
[Description("Serial number.")]
string          Serial_Number;
[Description("Chemistry.")]
string          Chemistry;
[Description("Design Capacity in mAH.")]
string          Design_Capacity_mAH;
[Description("Battery name.")]

```

```

string          Name;
[Description("Manufacturer's name.")]
string          Mfg_Name;
[Description("Full charge capacity of the battery.")]
sint32          FullChargeCapacity;
[Description("Battery cycle count.")]
sint16          Cycle_Count;
[Description("Total time (in minutes) the battery was in discharge state.")]
real32          Discharge_Time_mins;
[Description("Number of times the discharge depth was between 0 to 5%.")]
sint16          Discharge_Depth_0_5_Pct;
[Description("Number of times the discharge depth was between 5 to 10%.")]
sint16          Discharge_Depth_5_10_Pct;
[Description("Number of times the discharge depth was between 10 to 20%.")]
sint16          Discharge_Depth_10_20_Pct;
[Description("Number of times the discharge depth was between 20 to 40%.")]
sint16          Discharge_Depth_20_40_Pct;
[Description("Number of times the discharge depth was between 40 to 60%.")]
sint16          Discharge_Depth_40_60_Pct;
[Description("Number of times the discharge depth was between 60 to 80%.")]
sint16          Discharge_Depth_60_80_Pct;
[Description("Number of times the discharge depth was between 80 to 100%.")]
sint16          Discharge_Depth_80_100_Pct;
[Description("Number of times the start of discharge was between 100 to 94%.")]
//NameChange sint16          Discharge_Start_Point_100_94_Pct;
sint16          Discharge_StartPt_GT_94_Pct;
[Description("Number of times the start of discharge was between 94 to 70%.")]
//NameChange sint16          Discharge_Start_Point_94_70_Pct;
sint16          Discharge_StartPt_94_70_Pct;
[Description("Number of times the start of discharge was between 70 to 50%.")]
//NameChange          sint16 Discharge_Start_Point_70_50_Pct;
sint16          Discharge_StartPt_70_50_Pct;
[Description("Number of times the start of discharge was between 50 to 30%.")]
// NameChange sint16          Discharge_Start_Point_50_30_Pct;
sint16          Discharge_StartPt_50_30_Pct;
[Description("Number of times the start of discharge was between 30 to 10%.")]
// NameChange sint16          Discharge_Start_Point_30_10_Pct;
sint16          Discharge_StartPt_30_10_Pct;
[Description("Number of times the start of discharge was between 10 to 0%.")]
// NameChange sint16          Discharge_Start_Point_0_10_Pct;
sint16          Discharge_StartPt_0_10_Pct;
[Description("Number discharge sessions where final RSOC was less than 15%.")]
// NameChange sint16          Discharge_Sessions_With_End_10_15;
sint16          Discharge_Sess_End_10_15;
[Description("Number discharge sessions where final RSOC was less than 10%.")]
// NameChange sint16          Discharge_Sessions_With_End_5_10;
sint16          Discharge_Sess_End_5_10;
[Description("Number discharge sessions where final RSOC was less than 5%.")]
// NameChange sint16          Discharge_Sessions_With_End_LT_5;
sint16          Discharge_Sess_End_LT_5;
[Description("Average temperature during battery discharge.")]
real32          Discharge_Temp_Avg;
[Description("Standard deviation of temperature during battery discharge.")]
real32          Discharge_Temp_Std_Dev;
[Description("Maximum temperature during battery discharge.")]
sint16          Discharge_Temp_Max;
[Description("Minimum temperature during battery discharge.")]
sint16          Discharge_Temp_Min;
[Description("Average current (in mA) during battery discharge.")]
real32          Discharge_mA_Avg;
[Description("Standard deviation of current (in mA) during battery discharge.")]
real32          Discharge_mA_Std_Dev;
[Description("Maximum current (in mA) during battery discharge.")]
sint32          Discharge_mA_Max;
[Description("Minimum current (in mA) during battery discharge.")]
sint32          Discharge_mA_Min;
[Description("Average voltage (in mV) during battery discharge.")]
real32          Discharge_mV_Avg;
[Description("Standard deviation of voltage (in mV) during battery discharge.")]
real32          Discharge_mV_Std_Dev;
[Description("Maximum voltage (in mV) during battery discharge.")]
sint32          Discharge_mV_Max;
[Description("Minimum voltage (in mV) during battery discharge.")]

```

```

sint32          Discharge_mV_Min;
[Description("Average power (in W) during battery discharge.")]
real32          Discharge_Power_W_Avg;
[Description("Standard deviation of power (in W) during battery discharge.")]
real32          Discharge_Power_W_Std_Dev;
[Description("Maximum power (in W) during battery discharge.")]
sint32          Discharge_Power_W_Max;
[Description("Minimum power (in W) during battery discharge.")]
sint32          Discharge_Power_W_Min;
[Description("Percentage of time the power during discharge was between 0 to 5W.")]
sint16          Discharge_Power_0_5W_Pct;
[Description("Percentage of time the power during discharge was between 5 to 10W.")]
sint16          Discharge_Power_5_10W_Pct;
[Description("Percentage of time the power during discharge was between 10 to 15W.")]
sint16          Discharge_Power_10_15W_Pct;
[Description("Percentage of time the power during discharge was between 15 to 20W.")]
sint16          Discharge_Power_15_20W_Pct;
[Description("Percentage of time the power during discharge was between 20 to 25W.")]
sint16          Discharge_Power_20_25W_Pct;
[Description("Percentage of time the power during discharge was between 25 to 30W.")]
sint16          Discharge_Power_25_30W_Pct;
[Description("Percentage of time the power during discharge was between 30 to 40W.")]
sint16          Discharge_Power_30_40W_Pct;
[Description("Percentage of time the power during discharge was between 40 to 50W.")]
sint16          Discharge_Power_40_50W_Pct;
[Description("Percentage of time the power during discharge was between 50 to 60W.")]
sint16          Discharge_Power_50_60W_Pct;
[Description("Percentage of time the power during discharge was more than 60W.")]
sint16          Discharge_Power_GT60W_Pct;
[Description("Total time (in minutes) the battery was in charge state.")]
real32          Charge_Time_mins;
[Description("Number of sessions where the battery got fully charged.")]
// NameChange sint16          Charge_Number_Full_Charge_Sessions;
sint16          Num_Full_Charge_Sessions;
[Description("Number of sessions where the battery got partially charged.")]
// NameChange sint16          Charge_Number_Partial_Charge_Sessions;
sint16          Num_Partial_Charge_Sessions;
[Description("Average temperature during battery charge.")]
real32          Charge_Temp_Avg;
[Description("Standard deviation of temperature during battery charge.")]
real32          Charge_Temp_Std_Dev;
[Description("Maximum temperature during battery charge.")]
sint16          Charge_Temp_Max;
[Description("Minimum temperature during battery charge.")]
sint16          Charge_Temp_Min;
[Description("Average current (in mA) during battery charge.")]
real32          Charge_mA_Avg;
[Description("Standard deviation of current (in mA) during battery charge.")]
real32          Charge_mA_Std_Dev;
[Description("Maximum current (in mA) during battery charge.")]
sint32          Charge_mA_Max;

[Description("Minimum current (in mA) during battery charge.")]
sint32          Charge_mA_Min;

[Description("Average voltage (in mV) during battery charge.")]
real32          Charge_mV_Avg;

[Description("Standard deviation of voltage (in mV) during battery charge.")]
real32          Charge_mV_Std_Dev;

[Description("Maximum voltage (in mV) during battery charge.")]
sint32          Charge_mV_Max;

[Description("Minimum voltage (in mV) during battery charge.")]
sint32          Charge_mV_Min;

[Description("Average power (in W) during battery charge when RSOC was less than 60%.")]

```

```

// NameChange real32    Charge_Power_W_RSOC_LE_60_Avg;
// NameChange real32    Charge_Pwr_RSOC_LE_60_Avg;

[Description("Standard deviation of power (in W) during battery charge when RSOC was less
than 60%.")]
// NameChange real32    Charge_Power_W_RSOC_LE_60_Std_Dev;
// NameChange real32    Charge_Pwr_RSOC_LE_60_Stdv;

[Description("Maximum power (in W) during battery charge when RSOC was less than 60%.")]
// NameChange sint16    Charge_Power_W_RSOC_LE_60_Max;
// NameChange sint16    Charge_Pwr_RSOC_LE_60_Max;

[Description("Minimum power (in W) during battery charge when RSOC was less than 60%.")]
// NameChange sint16    Charge_Power_W_RSOC_LE_60_Min;
// NameChange sint16    Charge_Pwr_RSOC_LE_60_Min;

[Description("Average power (in W) during battery charge when RSOC was more than 60%.")]
// NameChange real32    Charge_Power_W_RSOC_LGT_60_Avg;
// NameChange real32    Charge_Pwr_RSOC_LGT_60_Avg;

[Description("Standard deviation of power (in W) during battery charge when RSOC was more
than 60%.")]
// NameChange real32    Charge_Power_W_RSOC_LGT_60_Std_Dev;
// NameChange real32    Charge_Pwr_RSOC_LGT_60_Stdv;

[Description("Maximum power (in W) during battery charge when RSOC was more than 60%.")]
// NameChange sint16    Charge_Power_W_RSOC_LGT_60_Max;
// NameChange sint16    Charge_Pwr_RSOC_LGT_60_Max;

[Description("Minimum power (in W) during battery charge when RSOC was more than 60%.")]
// NameChange sint16    Charge_Power_W_RSOC_LGT_60_Min;
// NameChange sint16    Charge_Pwr_RSOC_LGT_60_Min;

[Description("Total time (in minutes) the battery was in dwell state.")]
real32    Dwell_Time_mins;

[Description("Average RSOC level when the battery was in dwell state.")]
real32    Dwell_Avg_RSOC_Level;

[Description("Average temperature during battery dwell state.")]
real32    Dwell_Temp_Avg;

[Description("Standard deviation of temperature during battery dwell state.")]
real32    Dwell_Temp_Std_Dev;

[Description("Maximum temperature during battery dwell state.")]
sint32    Dwell_Temp_Max;
[Description("Minimum temperature during battery dwell state.")] sint32    Dwell_Temp_Min;
];

/*****
*   DPO_HardwareInfoToBattery
*   This class associates DPO_Battery instance(s) with an
*   instance of DPO_HardwareInfo.
*****/ [
Association : ToInstance,
Description(" This class associates DPO_Battery instance(s) with an" " instance of
DPO_HardwareInfo."),
dynamic:ToInstance, PROVIDER("DPOProv"):ToInstance
]
class DPO_HardwareInfoToBattery
{
[key] DPO_HardwareInfo REF    Antecedent;
[key] DPO_Battery REF    Dependent;
};

/*****
*   DPO_NBFan
*   This has the notebook fan information from a summary log. There
*   may be multiple instances of this class for each summary file.
*****/ [Description("Notebook fan
speed statistics."), Dynamic,Provider("DPOProv") ]
class DPO_NBFan

```

```

{
[
Description("Unique ID from the summary file."),
Key
]string    HardwareInfoGUID;

[
Description("Notebook fan index number starting from 0."),
Key
]sint16    Index;

[Description("Location where the fan is present in the system.")]
string     Location;

[Description("Percentage of time fan rpm was non-zero.")]
sint16     Fan_Duty_Cycle_Pct;

[Description("Fan speed when the summary log was generated.")]
sint32     RPM;

[Description("Peak fan speed.")]
sint32     Peak_Fan_RPM;

[Description("Average fan speed.")]
real32     Average_Fan_RPM;

[Description("Percentage of time the fan speed was 0 RPM.")] sint16    RPM_0_Pct;

[Description("Percentage of time the fan speed was between 0 and 1000 RPMs.")] sint16
RPM_0_1000_Pct;

[Description("Percentage of time the fan speed was between 1000 and 1700 RPMs.")] sint16
RPM_1000_1700_Pct;

[Description("Percentage of time the fan speed was between 1700 and 2200 RPMs.")]
sint16     RPM_1700_2200_Pct;

[Description("Percentage of time the fan speed was between 2200 and 2600 RPMs.")]
sint16     RPM_2200_2600_Pct;

[Description("Percentage of time the fan speed was between 2600 and 2900 RPMs.")]
sint16     RPM_2600_2900_Pct;

[Description("Percentage of time the fan speed was between 2900 and 3100 RPMs.")]
sint16     RPM_2900_3100_Pct;

[Description("Percentage of time the fan speed was between 3100 and 3300 RPMs.")]
sint16     RPM_3100_3300_Pct;

[Description("Percentage of time the fan speed was between 3300 and 3600 RPMs.")]
sint16     RPM_3300_3600_Pct;

[Description("Percentage of time the fan speed was between 3600 and 3900 RPMs.")]
sint16     RPM_3600_3900_Pct;

[Description("Percentage of time the fan speed was between 3900 and 4200 RPMs.")]
sint16     RPM_3900_4200_Pct;

[Description("Percentage of time the fan speed was between 4200 and 4600 RPMs.")]
sint16     RPM_4200_4600_Pct;

[Description("Percentage of time the fan speed was between 4600 and 5100 RPMs.")]
sint16     RPM_4600_5100_Pct;

[Description("Percentage of time the fan speed was between 5100 and 5600 RPMs.")]
sint16     RPM_5100_5600_Pct;

[Description("Percentage of time the fan speed was between 5600 and 6200 RPMs.")]
sint16     RPM_5600_6200_Pct;

[Description("Percentage of time the fan speed was between 6200 and 7000 RPMs.")]
sint16     RPM_6200_7000_Pct;

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```

[Description("Percentage of time the fan speed was more than 7000 RPMs.")]
sint16      RPM_GT7000_Pct;
};

/*****
*   DPO_HardwareInfoToNBFan
*   This class associates DPO_NBFan instance(s) with an
*   instance of DPO_NBFan.
*****/
Association : ToInstance,
Description("This class associates DPO_NBFan instance(s) " "with an instance of DPO_NBFan"),
dynamic:ToInstance, PROVIDER("DPOProv"):ToInstance
]
class DPO_HardwareInfoToNBFan
{
[key] DPO_HardwareInfo REF      Antecedent;
[key] DPO_NBFan      REF      Dependent;
};

/*****
*   DPO_DTFan
*   This has the desktop fan information from a summary log. There
*   may be multiple instances of this class for each summary file.
*****/
[Description("Desktop fan speed statistics."),
Dynamic,Provider("DPOProv") ] class DPO_DTFan
{
[
Description("Unique ID from the summary file."), Key
] string      HardwareInfoGUID;

[
Description("Desktop fan index number starting from 0."), Key
] sint16      Index;

[Description("Location where the fan is present in the system.")] string      Location;

[Description("Percentage of time fan rpm was non-zero.")] sint16      Fan_Duty_Cycle_Pct;

[Description("Fan speed when the summary log was generated.")] sint32      RPM;

[Description("Peak fan speed.")]
sint32      Peak_Fan_RPM;

[Description("Average fan speed.")]
real32      Average_Fan_RPM;

[Description("Percentage of time the fan speed was between 0 and 500 RPMs.")]
sint16      RPM_0_500_Pct;

[Description("Percentage of time the fan speed was between 500 and 900 RPMs.")]
sint16      RPM_500_900_Pct;

[Description("Percentage of time the fan speed was between 900 and 1100 RPMs.")]
sint16      RPM_900_1100_Pct;

[Description("Percentage of time the fan speed was between 1100 and 1300 RPMs.")]
sint16      RPM_1100_1300_Pct;

[Description("Percentage of time the fan speed was between 1300 and 1600 RPMs.")]
sint16      RPM_1300_1600_Pct;

[Description("Percentage of time the fan speed was between 1600 and 1900 RPMs.")]
sint16      RPM_1600_1900_Pct;

[Description("Percentage of time the fan speed was between 1900 and 2300 RPMs.")]
sint16      RPM_1900_2300_Pct;

[Description("Percentage of time the fan speed was between 2300 and 2700 RPMs.")]
sint16      RPM_2300_2700_Pct;

[Description("Percentage of time the fan speed was between 2700 and 3100 RPMs.")]
sint16      RPM_2700_3100_Pct;

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[Description("Percentage of time the fan speed was between 3100 and 3500 RPMs.")]
sint16    RPM_3100_3500_Pct;

[Description("Percentage of time the fan speed was between 3500 and 4000 RPMs.")]
sint16    RPM_3500_4000_Pct;

[Description("Percentage of time the fan speed was between 4000 and 4500 RPMs.")]
sint16    RPM_4000_4500_Pct;

[Description("Percentage of time the fan speed was between 4500 and 5000 RPMs.")]
sint16    RPM_4500_5000_Pct;
[Description("Percentage of time the fan speed was between 5000 and 5500 RPMs.")]
sint16    RPM_5000_5500_Pct;

[Description("Percentage of time the fan speed was between 5500 and 6000 RPMs.")]
sint16    RPM_5500_6000_Pct;

[Description("Percentage of time the fan speed was more than 6000 RPMs.")]
sint16    RPM_GT6000_Pct;
};

/*****
*    DPO_HardwareInfoToDTFan
*    This class associates DPO_DTFan instance(s) with an
*    instance of DPO_HardwareInfo.
*****/ [Association : ToInstance,
Description("This class associates DPO_DTFan instance(s) with " " an instance of
DPO_HardwareInfo"),
dynamic:ToInstance, PROVIDER("DPOProv"):ToInstance
]
class DPO_HardwareInfoToDTFan
{
[key] DPO_HardwareInfo REF    Antecedent;
[key] DPO_DTFan    REF    Dependent;
};

/*****
*    DPO_Thermistor
*    This has the thermal information from a summary log. There
*    may be multiple instances of this class for each summary file.
*****/
[Description("Thermal data from the hardware or BIOS."), Dynamic,Provider("DPOProv") ]
class DPO_Thermistor
{
[
Description("Unique ID from the summary file."),
Key
] string    HardwareInfoGUID;

[
Description("Thermistor index number starting from 0."),
Key
] sint16    Index;

[Description("Thermistor location eg CPU, Memory etc.")]
string    Location;

[Description("Temperature read from the thermistor when the summary log was generated.")]
sint16    Temp;

[Description("Maximum temperature read from the thermistor.")]
sint16    Peak_Temp;

[Description("Average temperature read from the thermistor.")]
real32    Avg_Temp;

[Description("Minimum temperature read from the thermistor.")]
sint16    Min_Temp;

[Description("Standard deviation of temperature read from the thermistor.")]
real32    Std_Dev_Temp;

```

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[Description("Percentage of time the temperature read was between 0 to 30C.")]
sint16    Temp_0_30C_Pct;

[Description("Percentage of time the temperature read was between 30 to 40C.")]
sint16    Temp_30_40C_Pct;

[Description("Percentage of time the temperature read was between 40 to 50C.")]
sint16    Temp_40_50C_Pct;

[Description("Percentage of time the temperature read was between 50 to 60C.")]
sint16    Temp_50_60C_Pct;

[Description("Percentage of time the temperature read was between 60 to 70C.")]
sint16    Temp_60_70C_Pct;

[Description("Percentage of time the temperature read was between 70 to 80C.")]
sint16    Temp_70_80C_Pct;

[Description("Percentage of time the temperature read was between 80 to 90C.")]
sint16    Temp_80_90C_Pct;

[Description("Percentage of time the temperature read was between 90 to 100C.")]
sint16    Temp_90_100C_Pct;

[Description("Percentage of time the temperature read was more than 100C.")]
sint16    Temp_GT100C_Pct;
};

/*****
*   DPO_HardwareInfoToThermistor
*   This class associates DPO_Thermistor instance(s) with an
*   instance of DPO_HardwareInfo.
*****/
[Association : ToInstance,
Description("This class associates DPO_Thermistor instance(s) " " with an instance of
DPO_HardwareInfo"),
dynamic:ToInstance,
PROVIDER("DPOProv"):ToInstance
]
class DPO_HardwareInfoToThermistor
{
[key] DPO_HardwareInfo REF    Antecedent;
[key] DPO_Thermistor    REF    Dependent;
};

/*****
*   DPO_Logical_Processor
*   This has the logical processor information from a summary log.
*   There may be multiple instances of this class for each summary
*   file.
*****/
[Description("Logical processors statistics."),
Dynamic,Provider("DPOProv") ] class DPO_Logical_Processor
{
[
Description("Unique ID from the summary file."),
Key
]
string    HardwareInfoGUID;

[
Description("Index of logical processor starting from 0."),
Key
]
sint16    Index;
[Description("Percentage of time the logical processor was used, ie. when the CPU consumption
was non-zero.")]
sint16    Used_Pct;

[Description("Average processor utilization.")]
sint16    Avg_Utilization_Pct;
};

```

```

/*****
*   DPO_HardwareInfoToLogical_Processor
*   This class associates DPO_Logical_Processor instance(s) with an
*   instance of DPO_HardwareInfo.
*****/
[Association : ToInstance,
Description("This class associates DPO_Logical_Processor " " instance(s) with an instance of
DPO_HardwareInfo"),
dynamic:ToInstance,
PROVIDER("DPOProv"):ToInstance
]
class DPO_HardwareInfoToLogical_Processor
{
[key] DPO_HardwareInfo      REF      Antecedent;
[key] DPO_Logical_Processor  REF      Dependent;
};

/*****
*   DPO_Disk
*   This has the physical disk information from a summary log. There
*   may be multiple instances of this class for each summary file.
*****/ [Description("Information for
each physical disk found on the system."), Dynamic,Provider("DPOProv") ]
class DPO_Disk
{
[
Description("Unique ID from the summary file."),
Key
]
string      HardwareInfoGUID;

[
Description("Index of the physical disk starting from 0."),
Key
]
sint16      Index;

[Description("Name of the disk.")]
string      Name;

[Description("Disk model number.")]
string      Make_Model;

[Description("Total disk size in MBs.")]
sint32      Size_MB;

[Description("Disk ePPID.")]
string      ePPID;

[Description("Unique ID assigned to this disk instance.")]
string      DiskGUID;

[Description("Percentage of time the disk was busy in read operations.")]
sint16      Read_Time_Pct;

[Description("Percentage of time the disk was busy in write operations.")]
sint16      Write_Time_Pct;

[Description("Percentage of time the disk was idle.")]
sint16      Idle_Time_Pct;

[Description("Total data read from the disk in MB.")]
sint32      Bytes_Read_MB;

[Description("Total data written to the disk in MB.")]
sint32      Bytes_Write_MB;
};

/*****
*   DPO_HardwareInfoToDisk
*   This class associates DPO_Disk instance(s) with an
*   instance of DPO_HardwareInfo.
*****/

```

```

[Association : ToInstance,
Description("This class associates DPO_Disk instance(s) with " " an instance of
DPO_HardwareInfo"),
dynamic:ToInstance,
  PROVIDER("DPOProv"):ToInstance
]
class DPO_HardwareInfoToDisk
{
[key] DPO_HardwareInfo REF    Antecedent;
[key] DPO_Disk      REF    Dependent;
};

/*****
*   DPO_Partition
*   This has the logical partition information from a summary log.
*   There may be multiple instances of this class for each summary
*   file.
*****/
[Description("Information for each partition found on a disk."),
Dynamic,Provider("DPOProv") ]
class DPO_Partition
{
[
Description("Unique ID from the summary file."),
Key
]
string    HardwareInfoGUID;

[
Description("Unique ID assigned to the physical disk instance to which this partition
belongs."),
Key
]
string    DiskGUID;

[
Description("Partition index number starting from 0."),
Key
]
sint16    Index;

[Description("Partition name, eg C:..")]
string    Name;

[Description("Total size of the partition in MBs.")]
sint32    Size_MB;
};

/*****
*   DPO_DiskToPartition
*   This class associates DPO_Partition instance(s) with an
*   instance of DPO_Disk.
*****/
[Association : ToInstance,
Description(" This class associates DPO_Partition instance(s) " " with an instance of
DPO_Disk"),
dynamic:ToInstance,
  PROVIDER("DPOProv"):ToInstance
]
class DPO_DiskToPartition
{
[key] DPO_Disk      REF    Antecedent;
[key] DPO_Partition REF    Dependent;
};

/*****
*   DPO_LanAdapter
*   This has the lan adapter information from a summary log. There
*   may be multiple instances of this class for each summary file.
*****/
[Description("LAN adapter information and statistics."),
Dynamic,Provider("DPOProv") ]

```

```

class DPO_LanAdapter
{
[
Description("Unique ID from the summary file."),
Key
]
string    HardwareInfoGUID;

[
Description("LAN adapter index number starting from 0."),
Key
]
sint16    Index;

[Description("LAN adapter name.")]
string    Name;

[Description("LAN adapter's MAC address.")]
string    MAC;

[Description("Percentage of time the adapter was busy when the system was on AC.")]
sint16    ActivityAC_Pct;

[Description("Percentage of time the adapter was busy when the system was on battery.")]
sint16    ActivityDC_Pct;
};

/*****
*   DPO_HardwareInfoToLanAdapter
*   This class associates DPO_LanAdapter instance(s) with an
*   instance of DPO_HardwareInfo.
*****/
[Association : ToInstance,
Description("This class associates DPO_LanAdapter instance(s) " " with an instance of
DPO_HardwareInfo"),
dynamic:ToInstance,
PROVIDER("DPOProv"):ToInstance
]
class DPO_HardwareInfoToLanAdapter
{
[key] DPO_HardwareInfo REF    Antecedent;
[key] DPO_LanAdapter    REF    Dependent;
};

/*****
*   DPO_WlanAdapter
*
*   This has the wlan adapter information from a summary log. There
*   may be multiple instances of this class for each summary file.
*****/ [Description("Wireless LAN
adapter information and statistics."), Dynamic,Provider("DPOProv") ]
class DPO_WlanAdapter
{
[
Description("Unique ID from the summary file."),
Key
]
string    HardwareInfoGUID;

[
Description("Wireless LAN adapter index number starting from 0."),
Key
]
sint16    Index;

[Description("Wireless LAN adapter name.")]
string    Name;

[Description("Wireless LAN adapter's MAC address.")]
string    MAC;

[Description("Percentage of time the radio was off when the system was on AC.")]
sint16    WlanRadioOffAC_Pct;

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[Description("Percentage of time the WLAN adapter was connected when the system was on AC.")]
sint16    WlanConnectedAC_Pct;

[Description("Percentage of time the adapter was not connected when the system was on AC.")]
sint16    WlanDisconnectedAC_Pct;

[Description("Percentage of time the radio was off when the system was on battery.")]
sint16    WlanRadioOffDC_Pct;

[Description("Percentage of time the WLAN adapter was connected when the system was on
battery.")]
sint16    WlanConnectedDC_Pct;

[Description("Percentage of time the adapter was not connected when the system was on
battery.")]
sint16    WlanDisconnectedDC_Pct;
};

/*****
*    DPO_HardwareInfoToWlanAdapter
*    This class associates DPO_WlanAdapter instance(s) with an
*    instance of DPO_HardwareInfo.
*****/
[Association : ToInstance,
Description("This class associates DPO_WlanAdapter instance(s) " " with an instance of
DPO_HardwareInfo"),
dynamic:ToInstance,
PROVIDER("DPOProv"):ToInstance
]
class DPO_HardwareInfoToWlanAdapter
{
[key] DPO_HardwareInfo REF    Antecedent;
[key] DPO_WlanAdapter    REF    Dependent;
};

/*****
*    DPO_Smart
*    This has the SMART information from a summary log. There
*    may be multiple instances of this class for each summary file.
*****/

[Description("SMART data from all disks (if reported by the disk)."),
Dynamic,Provider("DPOProv") ]
class DPO_Smart
{
[
Description("Unique ID from the summary file."),
Key
]
string    HardwareInfoGUID;

[
Description("Smart data index number starting from 0."),
Key
]
sint16    Index;

[Description("Name eg, SMART0.")]
string    Name;

[Description("Disk Model number.")]
string    Model;

[Description("Average disk temperature read using SMART.")]
real32    Temp_Avg;

[Description("Standard deviation of disk temperature read using SMART.")]
real32    Temp_Std_Dev;

[Description("Minimum disk temperature read using SMART.")]
sint16    Temp_Min;

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[Description("Maximum disk temperature read using SMART.")]
sint16    Temp_Max;

[Description("Percentage of time disk temperature read using SMART was between 0 to 30C.")]
sint16    Temp_0_30_Pct;

[Description("Percentage of time disk temperature read using SMART was between 30 to 40C.")]
sint16    Temp_30_40_Pct;

[Description("Percentage of time disk temperature read using SMART was between 40 to 50C.")]
sint16    Temp_40_50_Pct;

[Description("Percentage of time disk temperature read using SMART was between 50 to 60C.")]
sint16    Temp_50_60_Pct;

[Description("Percentage of time disk temperature read using SMART was between 60 to 70C.")]
sint16    Temp_60_70_Pct;

[Description("Percentage of time disk temperature read using SMART was between 70 to 80C.")]
sint16    Temp_70_80_Pct;

[Description("Percentage of time disk temperature read using SMART was more than 80C.")]
sint16    Temp_GT_80_Pct;

[Description("Shock events.")]
sint32    Shock_Events;

[Description("Shock events (normalized value).")]
uint8     Shock_Events_Normalized;

[Description("Shock events (worst value).")]
uint8     Shock_Events_Worst;

[Description("Shock events (threshold value).")]
uint8     Shock_Events_Threshold;

[Description("Total blocks read from the disk.")]
sint64    Blks_Read;

[Description("Total blocks read from the disk (normalized value).")]
uint8     Blks_Read_Normalized;

[Description("Total blocks read from the disk (worst value).")]
uint8     Blks_Read_Worst;

[Description("Total blocks read from the disk (threshold value).")]
uint8     Blks_Read_Threshold;

[Description("Total blocks written to the disk.")] sint64    Blks_Written;

[Description("Total blocks written to the disk (normalized value).")]
uint8     Blks_Written_Normalized;

[Description("Total blocks written to the disk (worst value).")]
uint8     Blks_Written_Worst;

[Description("Total blocks written to the disk (threshold value).")]
uint8     Blks_Written_Threshold;

[Description("Start stop count.")]
sint64    Start_Stop_Count;

[Description("Start stop count (normalized value).")]
uint8     Start_Stop_Count_Normalized;

[Description("Start stop count (worst value).")]
uint8     Start_Stop_Count_Worst;

[Description("Start stop count (threshold value).")]
uint8     Start_Stop_Count_Threshold;

[Description("Load unload cycle count.")]
sint64    Load_Unload_Cycle_Count;

```

```

[Description("Load unload cycle count (normalized value).")]
uint8    Load_Unload_Cycle_Count_Normalized;

[Description("Load unload cycle count (worst value).")]
uint8    Load_Unload_Cycle_Count_Worst;

[Description("Load unload cycle count (threshold value).")]
uint8    Load_Unload_Cycle_Count_Threshold;

[Description("Total power on hours.")]
sint64   Power_On_Hours;

[Description("Total power on hours (normalized value).")]
uint8    Power_On_Hours_Normalized;

[Description("Total power on hours (worst value).")]
uint8    Power_On_Hours_Worst;

[Description("Total power on hours (threshold value).")]
uint8    Power_On_Hours_Threshold;

[Description("Realloc sector count.")]
sint64   ReAlloc_Sector_Count;

[Description("Realloc sector count (normalized value).")]
uint8    ReAlloc_Sector_Count_Normalized;

[Description("Realloc sector count (worst value).")]
uint8    ReAlloc_Sector_Count_Worst;

[Description("Realloc sector count (threshold value).")]
uint8    ReAlloc_Sector_Count_Threshold;

[Description("Head flying hours.")]
sint64   Head_Flying_Hours;

[Description("Head flying hours (normalized value).")]
uint8    Head_Flying_Hours_Normalized;

[Description("Head flying hours (worst value).")]
uint8    Head_Flying_Hours_Worst;

[Description("Head flying hours (threshold value).")]
uint8    Head_Flying_Hours_Threshold;

[Description("Raw read error rate.")]
sint64   Raw_Read_Error_Rate;

[Description("Raw read error rate (normalized value).")]
uint8    Raw_Read_Error_Rate_Normalized;

[Description("Raw read error rate (worst value).")]
uint8    Raw_Read_Error_Rate_Worst;

[Description("Raw read error rate (threshold value).")]
uint8    Raw_Read_Error_Rate_Threshold;

[Description("Spin up time.")]
sint64   Spin_Up_Time;

[Description("Spin up time (normalized value).")]
uint8    Spin_Up_Time_Normalized;

[Description("Spin up time (worst value).")]
uint8    Spin_Up_Time_Worst;

[Description("Spin up time (threshold value).")]
uint8    Spin_Up_Time_Threshold;

[Description("Free fall count.")]
sint64   Free_Fall_Count;

[Description("Free fall count (normalized value).")]

```

```

uint8      Free_Fall_Count_Normalized;

[Description("Free fall count (worst value).")]
uint8      Free_Fall_Count_Worst;

[Description("Free fall count (threshold value).")]
uint8      Free_Fall_Count_Threshold;

[Description("Power cycle count.")]
sint64     Power_Cycle_Count;

[Description("Power cycle count (normalized value).")]
uint8      Power_Cycle_Count_Normalized;

[Description("Power cycle count (worst value).")]
uint8      Power_Cycle_Count_Worst;

[Description("Power cycle count (threshold value).")]
uint8      Power_Cycle_Count_Threshold;

[Description("Program fail count.")]
sint64     Program_Fail_Count;

[Description("Program fail count (normalized value).")]
uint8      Program_Fail_Count_Normalized;

[Description("Program fail count (worst value).")]
uint8      Program_Fail_Count_Worst;

[Description("Program fail count (threshold value).")]
uint8      Program_Fail_Count_Threshold;

[Description("Erase fail count.")]
sint64     Erase_Fail_Count;

[Description("Erase fail count (normalized value).")]
uint8      Erase_Fail_Count_Normalized;

[Description("Erase fail count (worst value).")]
uint8      Erase_Fail_Count_Worst;

[Description("Erase fail count (threshold value).")]
uint8      Erase_Fail_Count_Threshold;

[Description("Wear leveling count.")]
sint64     Wear_Leveling_Count;

[Description("Wear leveling count (normalized value).")]
uint8      Wear_Leveling_Count_Normalized;

[Description("Wear leveling count (worst value).")]
uint8      Wear_Leveling_Count_Worst;

[Description("Wear leveling count (threshold value).")]
uint8      Wear_Leveling_Count_Threshold;

[Description("User reserved block count.")]
sint64     User_Rsvd_Block_Count;

[Description("User reserved block count (normalized value).")]
uint8      User_Rsvd_Block_Count_Normalized;

[Description("User reserved block count (worst value).")]
uint8      User_Rsvd_Block_Count_Worst;

[Description("User reserved block count (threshold value).")]
uint8      User_Rsvd_Block_Count_Threshold;

[Description("User reserved block count (SSD Total).")]
sint64     User_Rsvd_Block_Count_Total;

[Description("User reserved block count (SSD Total) (normalized value).")]
uint8      User_Rsvd_Block_Count_Total_Normalized;

```

```

[Description("User reserved block count (SSD Total) (worst value).")]
uint8    User_Rsvd_Block_Count_Total_Worst;

[Description("User reserved block count (SSD Total) (threshold value).")]
uint8    User_Rsvd_Block_Count_Total_Threshold;

[Description("Unused reserved block count.")]
sint64   Unused_Rsvd_Block_Count;

[Description("Unused reserved block count (normalized value).")]
uint8    Unused_Rsvd_Block_Count_Normalized;

[Description("Unused reserved block count (worst value).")]
uint8    Unused_Rsvd_Block_Count_Worst;

[Description("Unused reserved block count (threshold value).")]
uint8    Unused_Rsvd_Block_Count_Threshold;

[Description("Program fail count (SSD Total).")]
sint64   Program_Fail_Count_Total;

[Description("Program fail count (SSD Total) (normalized value).")]
uint8    Program_Fail_Count_Total_Normalized;

[Description("Program fail count (SSD Total) (worst value).")]
uint8    Program_Fail_Count_Total_Worst;

[Description("Program fail count (SSD Total) (threshold value).")]
uint8    Program_Fail_Count_Total_Threshold;

[Description("Erase fail count (SSD Total).")]
sint64   Erase_Fail_Count_Total;

[Description("Erase fail count (SSD Total) (normalized value).")]
uint8    Erase_Fail_Count_Total_Normalized;

[Description("Erase fail count (SSD Total) (worst value).")]
uint8    Erase_Fail_Count_Total_Worst;

[Description("Erase fail count (SSD Total) (threshold value).")]
uint8    Erase_Fail_Count_Total_Threshold;

[Description("Uncorrectable error count.")]
sint64   Uncorrectable_Error_Count;

[Description("Uncorrectable error count (normalized value).")]
uint8    Uncorrectable_Error_Count_Normalized;

[Description("Uncorrectable error count (worst value).")]
uint8    Uncorrectable_Error_Count_Worst;

[Description("Uncorrectable error count (threshold value).")]
uint8    Uncorrectable_Error_Count_Threshold;

[Description("ECC rate.")]
sint64   Ecc_Rate;

[Description("ECC rate (normalized value).")]
uint8    Ecc_Rate_Normalized;

[Description("ECC rate (worst value).")]
uint8    Ecc_Rate_Worst;

[Description("ECC rate (threshold value).")]
uint8    Ecc_Rate_Threshold;
};

/*****
*   DPO_HardwareInfoToSmart
*   This class associates DPO_Smart instance(s) with an
*   instance of DPO_HardwareInfo.
*****/

```

```

[Association : ToInstance,
Description("This class associates DPO_Smart instance(s) with" " an instance of
DPO_HardwareInfo"),
dynamic:ToInstance,
PROVIDER("DPOProv"):ToInstance

]
class DPO_HardwareInfoToSmart
{
[key] DPO_HardwareInfo REF    Antecedent;
[key] DPO_Smart    REF    Dependent;
};

/*****
*   DPO_DIMM
*   This has the DIMM information from a summary log. There
*   may be multiple instances of this class for each summary file.
*****/
[Description("DIMM information for all DIMMs reported by the BIOS."),
Dynamic,Provider("DPOProv") ]
class DPO_DIMM
{
[
Description("Unique ID from the summary file."),
Key
]
string    HardwareInfoGUID;

[
Description("DIMM index number starting from 0."),
Key
]
sint16    Index;

[Description("DIMM name.") ]
string    Name;

[Description("DIMM manufacturer's name.") ]
string    Manufacturer;

[Description("DIMM part number.") ]
string    Part;

[Description("DIMM location.") ]
string    Location;

[Description("DIMM serial number.") ]
string    Serial;
};

/*****
*   DPO_HardwareInfoToDIMM
*   This class associates DPO_DIMM instance(s) with an
*   instance of DPO_HardwareInfo.
*****/
[Association : ToInstance,
Description("This class associates DPO_DIMM instance(s) with" "an instance of
DPO_HardwareInfo"),
dynamic:ToInstance,
PROVIDER("DPOProv"):ToInstance
]
class DPO_HardwareInfoToDIMM
{
[key] DPO_HardwareInfo REF    Antecedent;
[key] DPO_DIMM    REF    Dependent;
};

/*****
*   DPO_Logical_Drive_Info_New
*   This has the new logical drive information from a summary log. There
*   may be multiple instances of this class for each summary file.
*****/

```

```

[Description("Logical drive information for all logical drives found on the system."),
Dynamic,Provider("DPOProv") ]
class DPO_Logical_Drive_Info_New
{
[
Description("Unique ID from the summary file."),
Key
]
string      HardwareInfoGUID;

[
Description("Logical drive index number starting from 0."),
Key
]
sint16      Index;

[Description("Logical drive name, eg. C:..")]
string      Name;

[Description("Total logical drive size in MBs.")]
sint64      Size_MB;

[Description("Total free space on the logical drive in MBs.")]
sint64      Freespace_MB;
};

/*****
*   DPO_HardwareInfoToLogicalDriveInfoNew
*   This class associates DPO_Logical_Drive_Info_New instance(s) with an
*   instance of DPO_HardwareInfo.
*****/
[Association : ToInstance,
Description("This class associates DPO_Logical_Drive_Info_New instance(s) with " "an instance
of DPO_HardwareInfo"),
dynamic:ToInstance,
PROVIDER("DPOProv"):ToInstance
]
class DPO_HardwareInfoToLogicalDriveInfoNew
{
[key] DPO_HardwareInfo      REF      Antecedent;
[key] DPO_Logical_Drive_Info_NewREF      Dependent;
};

/*****
*   DPO_CrashInfo
*   This has the system bug check information from a summary
*   log. There may be multiple instances of this class for
*   each summary file.
*****/
[Description("System crash information from the summary log file. This information is
extracted from" " Windows Event Log"),
Dynamic,Provider("DPOProv") ]
class DPO_CrashInfo
{
[
Description("Unique ID from the summary file."),
Key
]
string      HardwareInfoGUID;

[
Description("Index number, starting from 0."),
Key
]
sint16      Index;

[Description("Local Time stamp (with time zone) of the date/time the crash was generated.")]
string      BugCheck_Time;

[Description("Information string from Windows Event Log.")]
string      BugCheck_String;

```

```

[Description("MiniDump File Name.")]
string Minidump_FileName;

[Description("MiniDump File Data Length")]
uint32 Minidump_DataLen;

[Description("MiniDump File Binary Data")]
uint8 Minidump_Data [];

[Description("Bug check stack frame 1")]
string BugCheck_Stack1;

[Description("Bug check stack frame 2")]
string BugCheck_Stack2;

[Description("Bug check stack frame 3")]
string BugCheck_Stack3;

[Description("Bug check stack frame 4")]
string BugCheck_Stack4;

[Description("Bug check stack frame 5")]
string BugCheck_Stack5;
};

/*****
* DPO_HardwareInfoToCrashInfo
* This class associates DPO_CrashInfo instance(s) with an
* instance of DPO_HardwareInfo.
*****/
[Association : ToInstance,
Description("This class associates DPO_CrashInfo instance(s) with " "an instance of
DPO_HardwareInfo"),
dynamic:ToInstance,
PROVIDER("DPOProv"):ToInstance
]
class DPO_HardwareInfoToCrashInfo
{
[key] DPO_HardwareInfo REF Antecedent;
[key] DPO_CrashInfo REF Dependent;
};

/*****
* DPO_FreeFall
* This has Free fall information from a summary
* log. Right now, there is only one instance of this class for
* each summary file but that may change in the future.
*****/

[Description("Free fall information from the summary log file."),
Dynamic,Provider("DPOProv")]
class DPO_FreeFall
{
[
Description("Unique ID from the summary file."),
Key
]
string HardwareInfoGUID;
[
Description("Number of times free fall condition was detected since last summary file was
generated.")
]
sint16 FreeFallCount;
};

/*****
* DPO_HardwareInfoToFreeFall
* This class associates DPO_FreeFall instance(s) with an
* instance of DPO_HardwareInfo.
*****/
[Association : ToInstance,

```

```

Description("This class associates DPO_FreeFall instance(s) with " "an instance of
DPO_HardwareInfo"),
dynamic:ToInstance,
PROVIDER("DPOProv"):ToInstance
]
class DPO_HardwareInfoToFreeFall
{
[key] DPO_HardwareInfo      REF      Antecedent;
[key] DPO_FreeFall         REF      Dependent;
};

/*****
*   DPO_Cable
*   This has the cable log information from a summary log. There
*   may be multiple instances of this class for each summary file.
*****/
[Description("Cable logs: List of all cables attached, required but not connected in the
system."), Dynamic,Provider("DPOProv") ]
class DPO_Cable
{
[
Description("Unique ID from the summary file."),
Key
] string      HardwareInfoGUID;

[
Description("Cable index number, starting from 0."),
Key
] sint16      Index;

[Description("Name of cable.")]
string      Name;

[Description("Cable's connection status.")]
string      Status;
};

/*****
*   DPO_HardwareInfoToCableLogs
*   This class associates DPO_HardwareInfoToCable
*   instance(s) with an instance of DPO_HardwareInfo.
*****/
[Association : ToInstance,
Description("This class associates DPO_HardwareInfoToCable" " instance(s) with an instance of
DPO_HardwareInfo."),
dynamic:ToInstance,
PROVIDER("DPOProv"):ToInstance
]
class DPO_HardwareInfoToCable
{
[key] DPO_HardwareInfo      REF      Antecedent;
[key] DPO_Cable             REF      Dependent;
};

/*****
*   DPO_CableChangeHistory
*   This has the cable change history information from a summary log.
*   There may be multiple instances of this class for each summary
*   file.
*****/
[Description("Information for status change for a cable."),
Dynamic,Provider("DPOProv") ]
class DPO_CableChangeHistory
{
[Description("Name of cable.")]
string      Name;

[Description("Timestamp when the change in cable status was noted.")]
string      Timestamp;

[Description("Cable's connection status.")]
string      Status;
};

```

```

};

/*****
*   DPO_CableToCableChangeHistory
*   This class associates DPO_CableChangeHistory instance(s) with an
*   instance of DPO_Cable.
*****/
[Association : ToInstance,
Description(" This class associates DPO_CableChangeHistory instance(s) " " with an instance
of DPO_Cable"),
dynamic:ToInstance,
PROVIDER("DPOProv"):ToInstance
]
class DPO_CableToCableChangeHistory
{
[key] DPO_Cable      REF      Antecedent;
[key] DPO_CableChangeHistory  REF      Dependent;
};

/*****
*   DPO_BTModule
*   This has the bluetooth module information from a summary log. There
*   may be multiple instances of this class for each summary file.
*****/
[Description("Bluetooth module information and statistics."),
Dynamic,Provider("DPOProv") ]
class DPO_BTModule
{
[
Description("Unique ID from the summary file."),
Key
]
string      HardwareInfoGUID;

[
Description("Bluetooth module index number starting from 0."),
Key
]
sint16      Index;

[Description("Bluetooth module name.")]
string      Name;

[Description("Bluetooth modoule's address.")]
string      Address;

[Description("Percentage of time the radio was on when the system was on AC.")]
sint16      BTRadioOnAC_Pct;

[Description("Percentage of time the bluetooth module was connected when the system was on
AC.")]
sint16      BTConnectedAC_Pct;

[Description("Percentage of time the module was not connected when the system was on AC.")]
sint16      BTDisconnectedAC_Pct;

[Description("Percentage of time the radio was on when the system was on battery.")]
sint16      BTRadioOnDC_Pct;

[Description("Percentage of time the bluetooth module was connected when the system was on
battery.")]
sint16      BTConnectedDC_Pct;

[Description("Percentage of time the module was not connected when the system was on
battery.")]
sint16      BTDisconnectedDC_Pct;
};

/*****
*   DPO_HardwareInfoToBTModule
*   This class associates DPO_BTModule instance(s) with an
*   instance of DPO_HardwareInfo.
*****/

```

```

[Association : ToInstance,
Description("This class associates DPO_BTModule instance(s) " " with an instance of
DPO_HardwareInfo"),
dynamic:ToInstance,
PROVIDER("DPOProv"):ToInstance
]
class DPO_HardwareInfoToBTModule
{
[key] DPO_HardwareInfo REF    Antecedent;
[key] DPO_BTModule    REF    Dependent;
};

/*****
*   DPO_IntelPerf
*   This has the Intel performance information from a summary log. There
*   may be multiple instances of this class for each summary file.
*****/
[Description("Intel performance information and statistics."),
Dynamic,Provider("DPOProv") ]
class DPO_IntelPerf
{
[
Description("Unique ID from the summary file."),
Key
]
string    HardwareInfoGUID;

[
Description("Processor number starting from 0."),
Key
]
sint16    Index;

[Description("Minimum active relative frequency of the processor.")]
real32    Min_ActiveRelativeFreq;

[Description("Maximum active relative frequency of the processor.")]
real32    Max_ActiveRelativeFreq;

[Description("Average active relative frequency of the processor.")]
real32    Avg_ActiveRelativeFreq;

[Description("Percentage of time the processor was in turbo mode when the system was on
AC.")]
real32    TurboResidencyACPct;

[Description("Percentage of time the processor was in turbo mode when the system was on
battery.")]
real32    TurboResidencyDCPct;
};

/*****
*   DPO_HardwareInfoToIntelPerf
*   This class associates DPO_IntelPerf instance(s) with an
*   instance of DPO_HardwareInfo.
*****/
[Association : ToInstance,
Description("This class associates DPO_IntelPerf instance(s) " " with an instance of
DPO_HardwareInfo"),
dynamic:ToInstance,
PROVIDER("DPOProv"):ToInstance
]
class DPO_HardwareInfoToIntelPerf
{
[key] DPO_HardwareInfo REF    Antecedent;
[key] DPO_IntelPerf    REF    Dependent;
};

/*****
*   DPO_Graphics
*   This has the graphics information from a summary log. There
*   may be multiple instances of this class for each summary file.

```

```

*****/
[Description("Graphics performance information and statistics."),
Dynamic,Provider("DPOProv") ]
class DPO_Graphics
{
[
Description("Unique ID from the summary file."),
Key
]
string      HardwareInfoGUID;

[
Description("GPU number starting from 0."),
Key
]
sint16      Index;

[Description("Minumum GPU utilization.")]
sint16      Min_GpuUtilization;

[Description("Maximum GPU utilization.")]
sint16      Max_GpuUtilization;

[Description("Average GPU utilization.")]
real32      Avg_GpuUtilization;

[Description("Percentage of time GPU was at 0% utilization.")]
real32      GpuUtilization_0_Pct;

[Description("Minumum graphics memory utilization.")]
sint16      Min_MemUtilization;

[Description("Maximum graphics memory utilization.")]
sint16      Max_MemUtilization;

[Description("Average graphics mempry utilization.")]
real32      Avg_MemUtilization;

[Description("Percentage of time graphics memory was at 0% utilization.")]
real32      MemUtilization_0_Pct;

[Description("Minumum graphics engine utilization.")]
sint16      Min_EngineUtilization;

[Description("Maximum graphics engine utilization.")]
sint16      Max_EngineUtilization;

[Description("Average graphics engine utilization.")]
real32      Avg_EngineUtilization;

[Description("Percentage of time graphics engine was at 0% utilization.")]
real32      EngineUtilization_0_Pct;

[Description("Minumum graphics bus utilization.")]
sint16      Min_BusUtilization;

[Description("Maximum graphics bus utilization.")]
sint16      Max_BusUtilization;

[Description("Average graphics bus utilization.")]
real32      Avg_BusUtilization;

[Description("Percentage of time graphics bus was at 0% utilization.")]
real32      BusUtilization_0_Pct;

[Description("Minumum graphics fan speed. The fan speed is reported in percentage.")]
sint16      Min_FanSpeedPct;

[Description("Maximum graphics fan speed. The fan speed is reported in percentage.")]
sint16      Max_FanSpeedPct;

[Description("Average graphics fan speed. The fan speed is reported in percentage.")]
real32      Avg_FanSpeedPct;

```

```

[Description("Percentage of time graphics fan was at 0% speed.")]
real32    FanSpeedPct_0_Pct;

[Description("Minumum GPU temperature.")]
sint16    Min_Temperature;

[Description("Maximum GPU temperature.")]
sint16    Max_Temperature;

[Description("Average GPU temperature.")]
real32    Avg_Temperature;
};

/*****
*    DPO_HardwareInfoToGraphics
*    This class associates DPO_Graphics instance(s) with an
*    instance of DPO_HardwareInfo.
*****/
[Association : ToInstance,
Description("This class associates DPO_Graphics instance(s) " " with an instance of
DPO_HardwareInfo"),
dynamic:ToInstance,
PROVIDER("DPOProv"):ToInstance
]
class DPO_HardwareInfoToGraphics

{
[key] DPO_HardwareInfo REF    Antecedent;
[key] DPO_Graphics    REF    Dependent;
};

/*
Current DPO version

Features Enabled/Disabled (e.g.GUI control listed above) Time of last Check for Profiles

Time of last System Update Time of last Check for Updates
Profile trigger history (time, profile, policy)
*/

/*****
*    DPO_Info
*****/
[Description("DPO Info"),
Dynamic,Provider("DPOProv") ]
class DPO_Info
{
[
Description("Product version"),
key
]
string    ProductVersion;

/* [
Description("Features enabled")
]
int
*/

[
Description("Date/Time of last check for system updates")
]
string    LastCheckForUpdateTime;

[
Description("Date/Time of last system update")
]
string    LastSystemUpdateTime;

[
Description("Date/Time of last check for updated profiles")

```

```

]
string    LastCheckForProfiles;
};

/*****
*    DPO_TriggeredProfiles
*****/
Description("DPO Profiles that have triggered"),
Dynamic,Provider("DPOProv") ]
class DPO_TriggeredProfiles
{
    [
    Description("Unique ID of profile"),
    Key
    ]
    string    ProfileGUID;

    [
    Description("Name of profile")
    ]
    string    ProfileName;

    [
    Description("Unique ID of policy that triggered"),
    Key
    ]
    string    PolicyGUID;

    [
    Description("Name of policy that triggered")
    ]
    string    PolicyName;

    [
    Description("Date/Time of trigger"), key
    ]
    string    TriggeredAt;
};

/*****
*    DPO_Profiles
*****/
[Description("DPO Profiles"),
Dynamic,Provider("DPOProv") ]
class DPO_Profiles
{
    [
    Description("Unique ID"),
    Key
    ]
    string    ProfileGUID;

    [
    Description("Name")
    ]
    string    ProfileName;

    [
    Description("Active")
    ]
    string    Active;
};

/*****
*    DPO_SmartAlerts
*****/
[Description("DPO Smart Alerts"),
Dynamic,Provider("DPOProv") ]
class DPO_SmartAlerts
{
    [

```

```

Description("Unique ID of alert"),
Key
]
string    AlertGUID;

[
Description("Alert Message")
]
string    AlertMessage;

[
Description("Alert Description"),
]
string    AlertDescr;

[
Description("Guidance"),
]
string    AlertGuidance;

[
Description("Local date/time of alert"),
]
string    AlertGeneratedAt;

};
/*****
*    Create an instance of the provider
// Setting the HostingModel to Decoupled:Com registers the provider as a decoupled com
provider,
// lowers RPC_C_IMP_LEVEL_IMPERSONATE and RPC_C_IMP_LEVEL_DELEGATE impersonation levels to
// RPC_C_IMP_LEVEL_IDENTIFY before calling into provider:

// Setting the HostingModel to Decoupled:Com:FoldIdentity(FALSE) allows original client
// impersonation level through to provider.
// This lets a decoupled provider impersonate the client and hence
// act in the role of that client. This poses a potential security risk for the client
// if the decoupled provider security identity has less rights than the original client.
// Use a strong security descriptor when using this option:

*****/

instance of    Win32Provider as $P
{
Clsid = "{C4ABD5F1-1260-4192-BF0B-11909C172043}";

Name = "DPOProv";
HostingModel = "NetworkServiceHost";

};

instance of    InstanceProviderRegistration
{
Provider = $P;
SupportsGet = TRUE;
SupportsPut = FALSE;
SupportsDelete = FALSE;
SupportsEnumeration = TRUE;

// we want WMI to do query parsing QuerySupportLevels = NULL;
};

instance of    MethodProviderRegistration
{
Provider = $P;
};

```