

Hierarchical Data Extension UUID For _DSD

August 2015

Revision 1.0

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Revision history

Revision Number	Description	Revision Date
<1.0>	First revision	August 4, 2015

Introduction

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1 Introduction

This document specifies the data format associated with UUID

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(Hierarchical Data Extension UUID) for the `_DSD` (Device Specific Data) ACPI device configuration object.

1.1 Terms

The following terms are used throughout this document to describe varying aspects of input localization:

ACPI

Advanced Configuration and Power Interface specification.

Device

Hardware component or set of interrelated hardware registers.

GUID

Globally Unique Identifier. A 128-bit value used to uniquely name entities. A unique GUID can be generated by an individual without the help of a centralized authority. This allows the generation of names that will never conflict, even among multiple, unrelated parties.

UUID

Universal Unique Identifier, GUID.

1.2 Conventions used in this document

1.2.1 Typographic conventions

This document uses the typographic and illustrative conventions described below:

Plain text

The normal text typeface is used for the vast majority of the descriptive text in a specification.

BOLD Monospace

Computer code, example code segments, and all prototype code segments use a **BOLD Monospace** typeface with a dark red color. These code listings normally appear in one or more separate paragraphs, though words or segments can also be embedded in a normal text paragraph.

Introduction

2 *Hierarchical Data Extension UUID*

2.1 Data Format Definition

The hierarchical Data Extension UUID

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defines the data format for the Package (Data Structure) immediately following it as a list of Packages of length 2 (Sub-node Links) where the first element of each contained Package (Key) must be a String and the second element of it (Target) must be a String encoding the name of the referenced ACPI object. That name can be a fully qualified path, a relative path, or a simple name segment utilizing the ACPI namespace search rules as defined by the ACPI specification (ACPI 6.0, Section 5.3 "ACPI Namespace", Section 19.2.2 "ASL Name and Pathname Terms" and Section 19.3.2.2 "Strings").

Moreover, the ACPI object pointed to by Target (the Target Object) must evaluate to a Package formatted in accordance with the `_DSD` return value format defined by the ACPI specification (ACPI 6.0, Section 6.2.5). Also, like `_DSD`, it must return the same data every time it is evaluated and the meaning of those data is the same as for analogous data returned by `_DSD`.

The Key of each Sub-node Link must be unique within the enclosing Data Structure. That is, it is invalid to put two Sub-node Links with identical Keys into one enclosing Package.

This allows hierarchical device configuration information to be represented as a hierarchy of ACPI objects returning Packages following the `_DSD` data Package formatting rules. Then, each of those objects may be regarded as a Data-only Sub-node of the Device object holding the `_DSD` at the top of the hierarchy.

For maximum interoperability, it is recommended to put all Target Objects into the same scope in which the objects that return data including their names are located.

2.2 Example

The following example illustrates the possible use of the Hierarchical Data Extension UUID and Sub-node Links. It contains a definition of a master Device (SWC0), three Data-only Sub-nodes (DP0P, DPNP, DP00) and one child Device object (SWD0) under it. In addition, the Data-only Sub-node DP00 is a Sub-node of DPNP (which is a direct Sub-node of the master Device).

Hierarchical Data Extension UUID

```
Device(SWC0) {
    Name(_HID, "VEND0000") // sample Vendor ID - do not use
    Name(_DSD, Package() {
        ToUUID("daffd814-6eba-4d8c-8a91-bc9bbf4aa301"),
        Package () {
            Package (2) {...}, // Property 1
            ...
            Package (2) {...}, // Property n
        },
        ToUUID("dbb8e3e6-5886-4ba6-8795-1319f52a966b"),
        Package () {
            Package (2) {"Alice", "DPOP"},
            Package (2) {"Frank", "DPNP"}
        }
    })

    Name(DPOP, Package(){ // Data-only subnode of SWC0
        ToUUID("daffd814-6eba-4d8c-8a91-bc9bbf4aa301"),
        Package () {
            Package (2) {...}, // Property 1
            ...
            Package (2) {...} // Property n
        }
    })

    Name(DPNP, Package(){ // Data-only subnode of SWC0
        ToUUID("daffd814-6eba-4d8c-8a91-bc9bbf4aa301"),
        Package () {
            Package (2) {...}, // Property 1
            Package (2) {...} // Property 2
        },
        ToUUID("dbb8e3e6-5886-4ba6-8795-1319f52a966b"),
        Package () {
            Package (2) {"child-of-Frank", "DP00"}
        }
    })

    Name(DP00, Package(){ // Data-only subnode of DPNP
        ToUUID("daffd814-6eba-4d8c-8a91-bc9bbf4aa301"),
        Package () {
            Package (2) {...}, // Property 1
            ...
            Package (2) {...} // Property n
        }
    })

    Device (SWD0) {
        Name(_ADR, ...)
        Name(_DSD, Package() {
            ToUUID("daffd814-6eba-4d8c-8a91-bc9bbf4aa301"),
            Package () {
                Package (2) {...}, // Property 1
                ...
                Package (2) {...} // Property n
            }
        })
    } // End SWD0
} // End SWC0
```