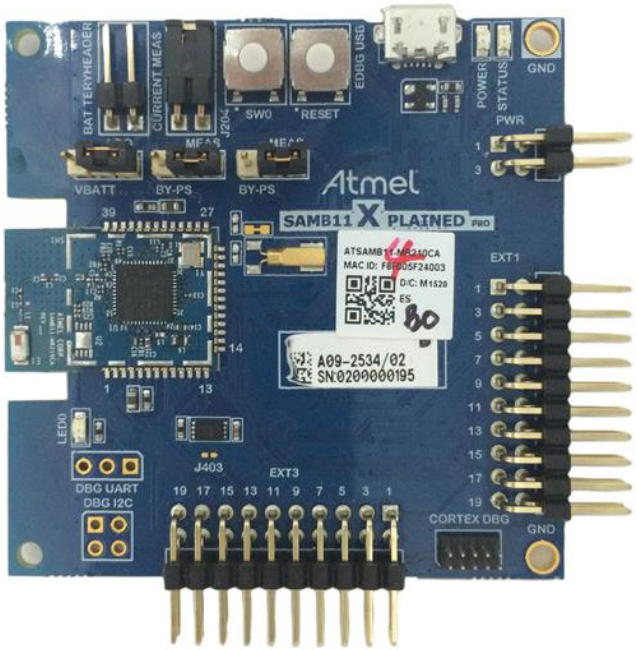
ATSAMB11 BluSDK SMART

Device Information Service - Getting Started Guide

USER GUIDE



Introduction

The Device Information Service application provide the user to define and use the BLE DIS service. Any application discovering the database can access the DIS service instance during discovery services.

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1 Purpose

This guide describes the setup of an Atmel® ATSAMB11 Xplained board and bringing up an example to add device information service as part of BluSDK SMART release. The Device Information Service application is an example application that is embedded as part of the software release package.

2 Supported Characteristics in Device Information Service

- Manufacturer name string
- Model number string
- Serial number string
- Hardware revision string
- Firmware revision string
- Software revision string
- System ID
- IEEE 11073-20601 Regulatory Certification Data List
- PnP ID

3 Demo Setup

4 Hardware Setup

Connect the ATSAMB11 board to the host PC using a Micro-USB cable.

Figure 4-1. EDBG USB Port

5 Software Setup

5.1 Installation Steps

1. Install the latest Atmel Studio **[Atmel Studio 7.0 (build 629 or later) web installer (recommended)]**
   http://www.atmel.com/tools/ATMELSTUDIO.aspx.
2. Install the latest Atmel Software Framework.

This package will install the following examples within the Atmel Studio environment:

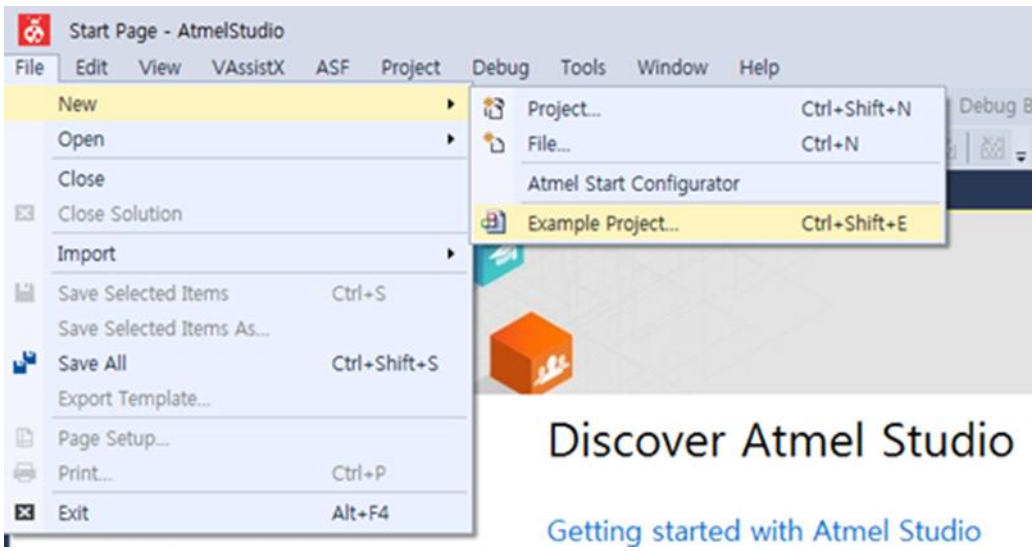
- Device Information Service application for ATSAMB11

5.2 Build Procedure

The following procedure is explained for ATSAMB11 application example.

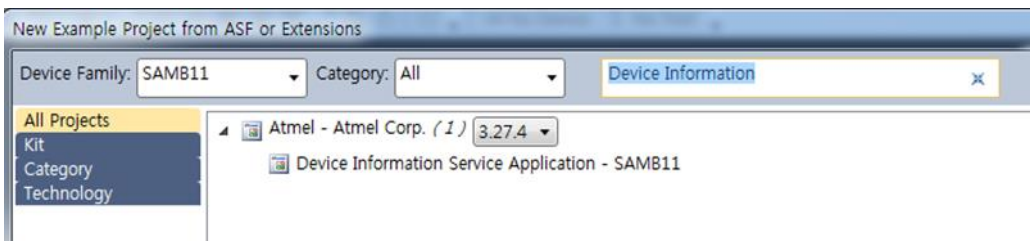
1. Select New Example Project.

Figure 5-1. Creating a New Example Project



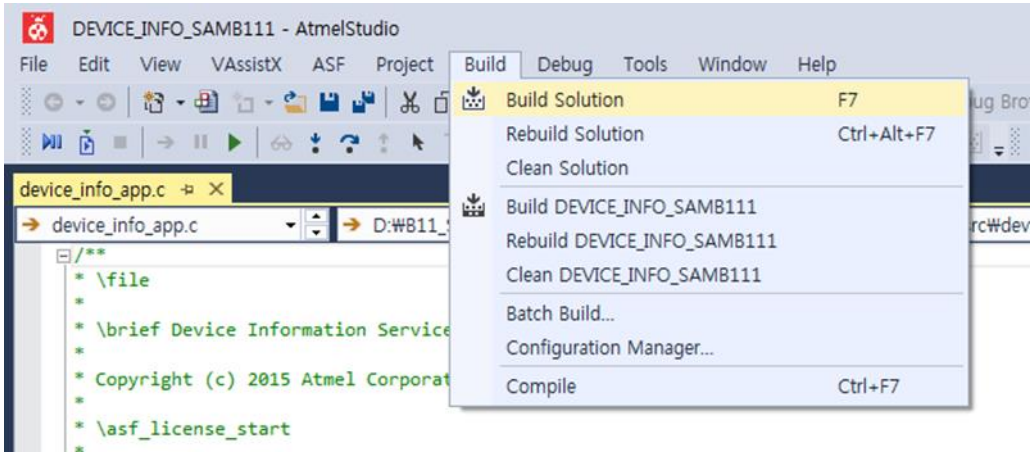
2. Select “SAMB11” in device family, enter “Device Information” in search window, and expand Atmel Corp Projects. The location and the name of the project can be selected in the respective fields. Click OK.

Figure 5-2. Selecting Proximity Reporter Application from Example Projects



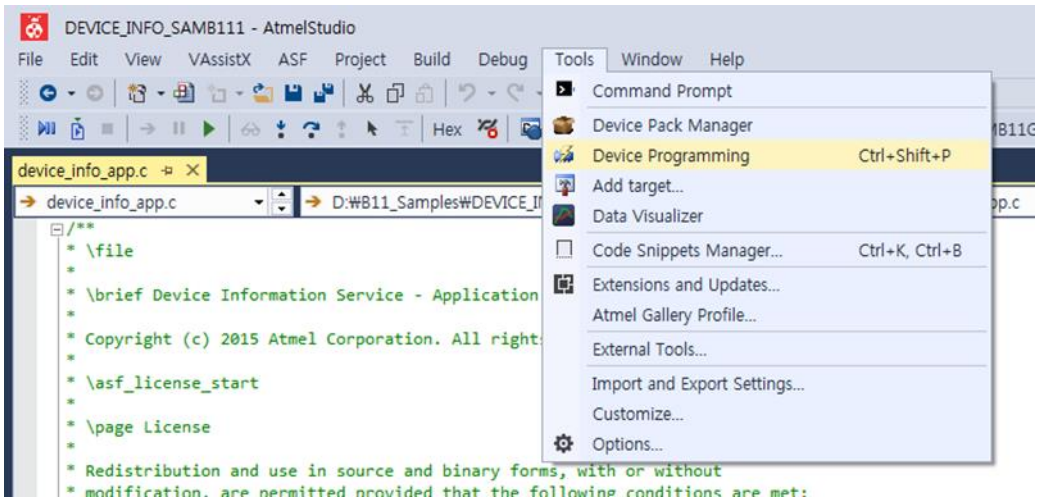
3. Accept the license Agreement. The Atmel studio will generate the Device Information Service Example project for ATSAMB11.
4. Build the solution.

Figure 5-3. Building the Device Information Service Application



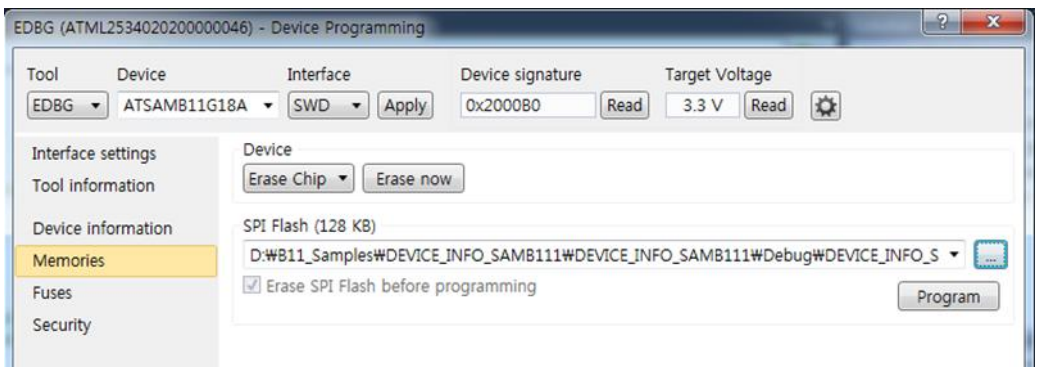
5. Download the application via the USB to the ATSAMB11 board by using the Device Programing option available in Tools as shown below.

Figure 5-4. Selecting Device Programming Option



6. Inside the device programming the user has to select the correct configuration for the device and finally program the device by using the program button.

Figure 5-5. Flash Programming



6 Console Logging

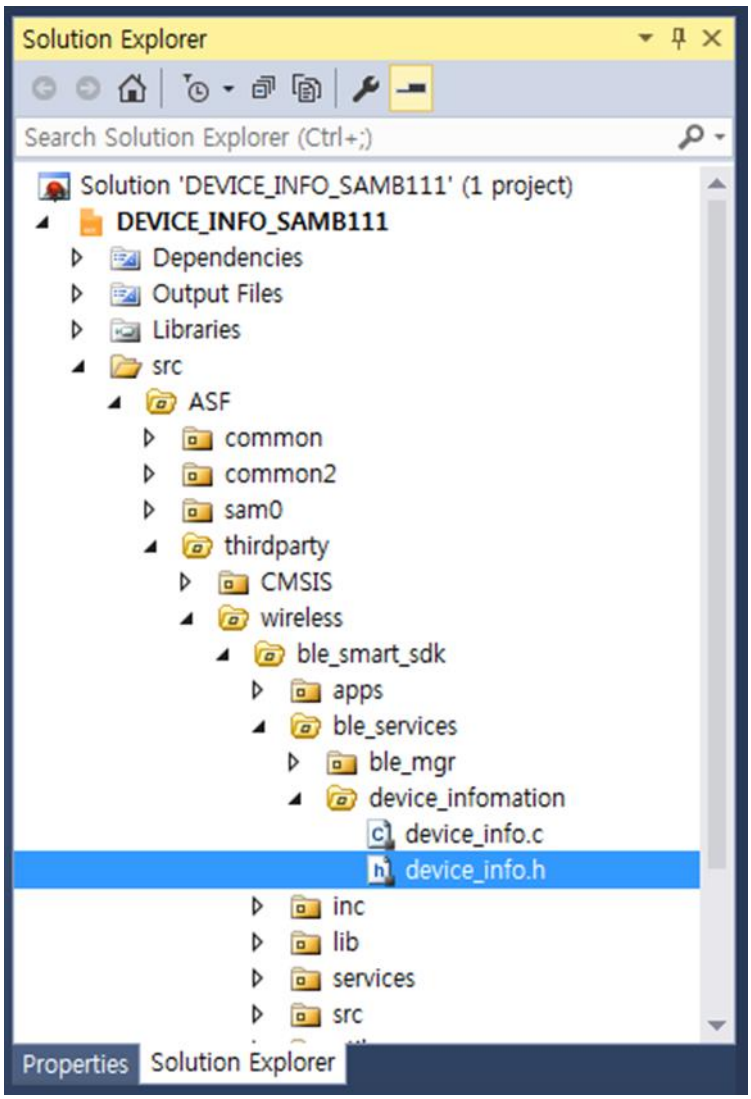
For the purpose of debugging, a logging interface has been implemented in the Device Information Service application. The logging interface utilizes the same EDBG port that connects to ATSAMB11. A serial port monitor application (for example TeraTerm) shall be opened and attached to the COM port enumerated by the device on the PC.

7 Device Information Service Configuration

1. Before connection

   The user should configure the default characteristics for the Device Information Service by using macros mentioned below, which are defined inside device_info.h.

Figure 7-1. DIS Header File




```
DEFAULT_MANUFACTURER_NAME
DEFAULT_MODEL_NUMBER
DEFAULT_SERIAL_NUMBER
```

```
DEFAULT_HARDWARE_REVISION
DEFAULT_SOFTWARE_REVISION
DEFAULT_FIRMWARE_REIVSION
PNP_ID_VENDOR_ID_SOURCE
PNP_ID_VENDOR_ID
PNP_ID_PRODUCT_ID
PNP_ID_PRODUCT_VERSION
SYSTEM_ID_MANUFACTURER_ID
SYSTEM_ID_ORG_UNIQUE_ID
```

2. After connection

   The user can configure the values of characteristics for Device Information Service using the following macro mentioned below inside device_info.h.

```
UPDATE_MANUFACTURER_STRING
UPDATE_MODEL_NUMBER
UPDATE_SERIAL_NUMBER
UPDATE_HARDWARE_REVISION
UPDATE_FIRMWARE_REVISION
UPDATE_SOFTWARE_REVISION
UPDATE_SYSTEM_ID
UPDATE_PNP_ID
UPDATE_IEEE_REG_CERT_DATA_LIST
```

8 Running the Demo

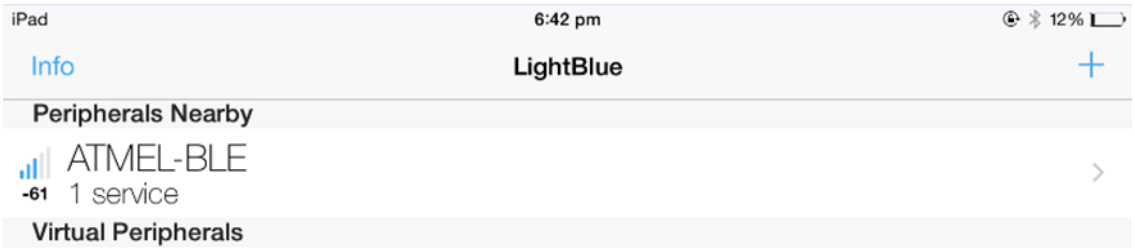
1. Power on the ATSAMB11 by connecting the USB cable.
2. Open any Terminal Application (e.g. TeraTerm). Select the appropriate COM Port (Settings: Baudrate 115200, None Parity, one Stop bit, one Start bit, no Hardware Handshake).
3. Press the Reset button on the ATSAMB11 board.
4. The device is now in advertising mode.

Figure 8-1. Console Display for Device in Advertising Mode

```
Initializing Device Information Service Application
Initializing SAMB11
BD Address:0xF8F005F23FFF, Address Type:0
BLE Started Adv
```

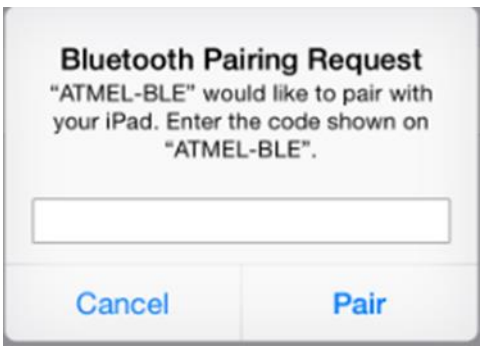
5. Enable Bluetooth® from the Settings page on the iPhone. Use the LightBlue application to scan for peripheral devices. A device with the name ‘Atmel-BLE’ will appear in the list of scanned devices.

Figure 8-2. Atmel-BLE Device Discovered by LightBlue Application



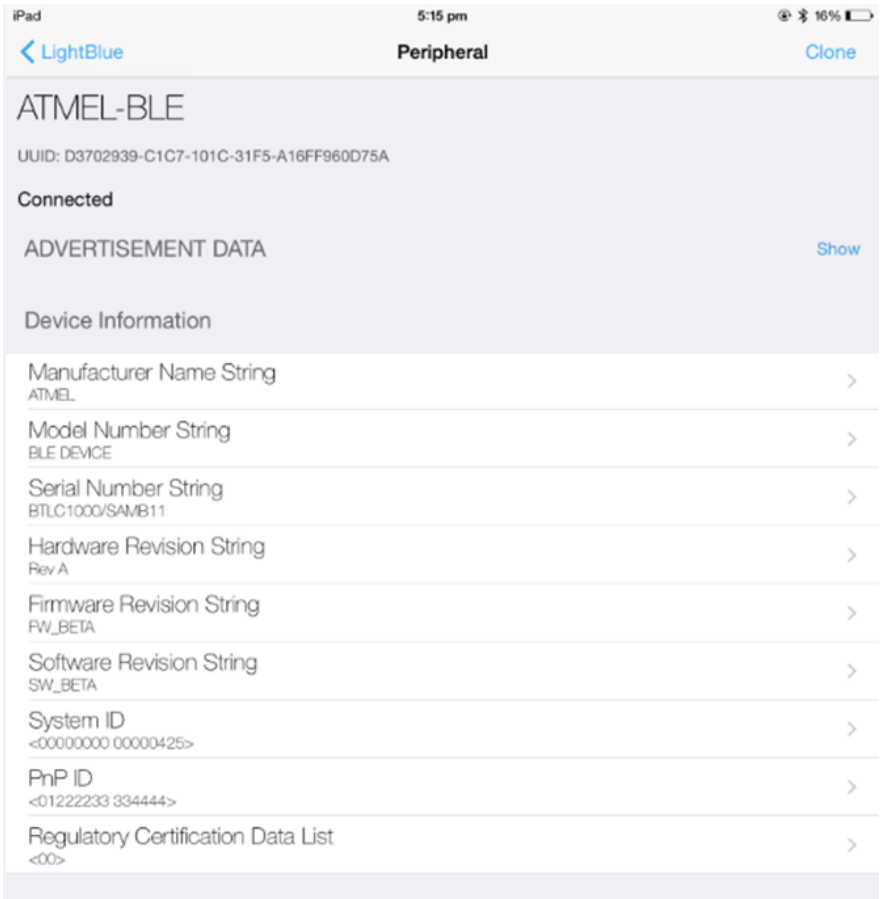
6. Click on ATMEL-BLE device. A pop-up will appear requesting a pass-key. Enter “123456” and click on ‘Pair’.

Figure 8-3. Pairing Pop-up Screen



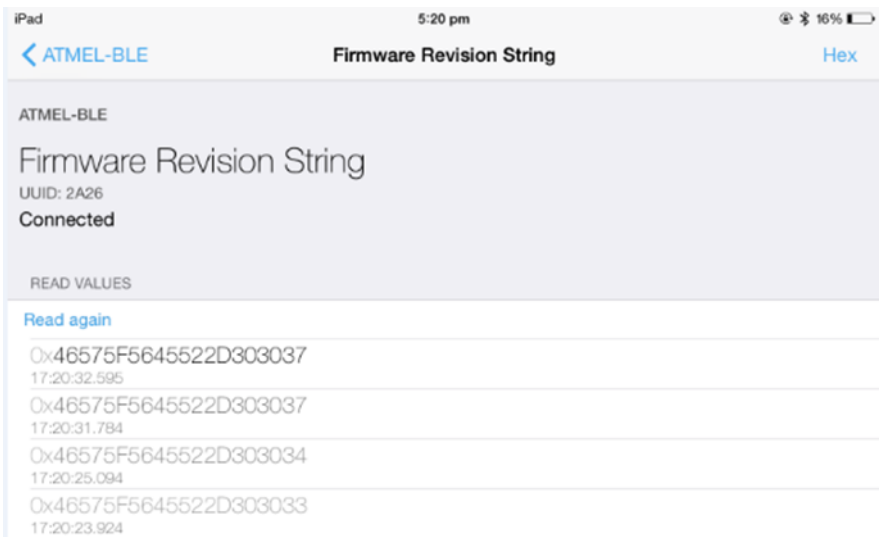
7. The user can see the device information service characteristics.

Figure 8-4. Display of Device Information Service



8. The user can click on any characteristic, and read the latest value of the characteristic by clicking on the read option as shown below.

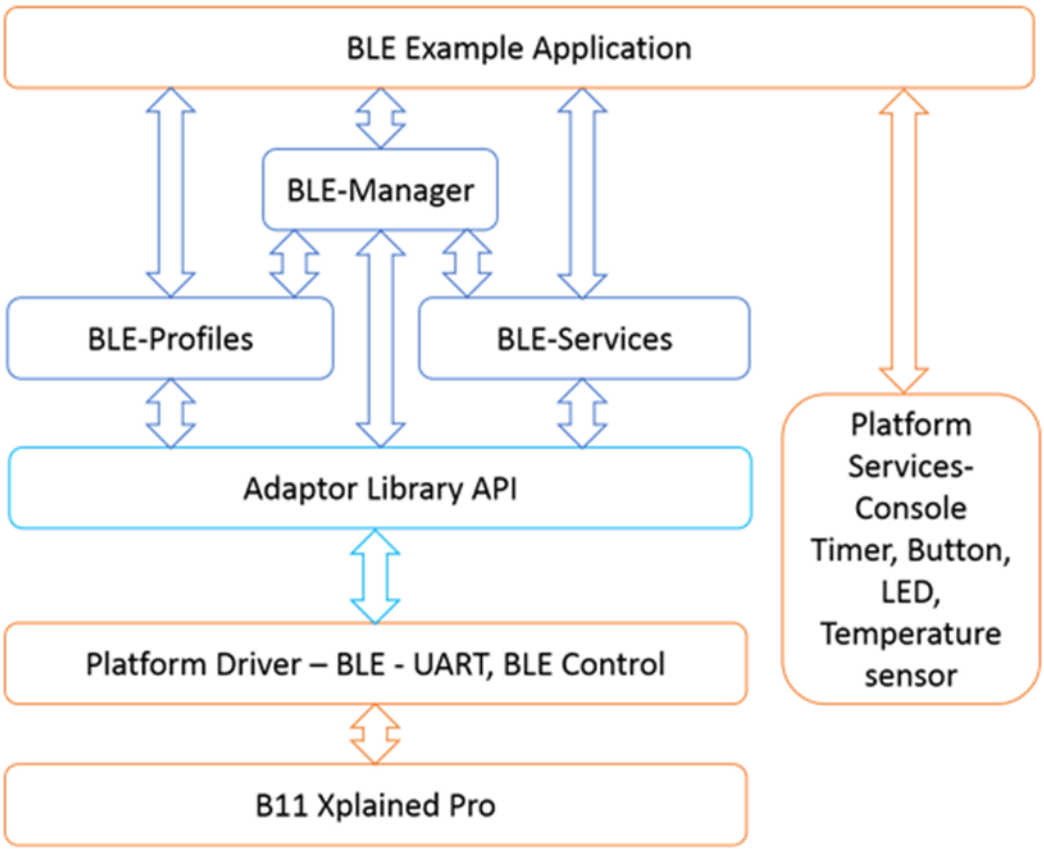
Figure 8-5. Display of Firmware Revision String Characteristic



9 BluSDK SMART Software Architecture

Figure 9-1 illustrates the top level diagram for the ATSAMB11 configuration.

Figure 9-1. ATSAMB11 Software Architecture



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11 Revision History

Doc Rev.	Date	Comments
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