Active Message ID Allocation for Network Protocols and Applications

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Note

This document specifies a Best Current Practices for the TinyOS Community, and requests discussion and suggestions for improvements. Distribution of this memo is unlimited. This memo is in full compliance with [TEP_1].

1. Introduction

In order to document the Active Message Type [TEP_116], also known as Active Message Identifier (AM ID), used by the protocols and to prevent AM ID conflicts between applications and protocols distributed with TinyOS 2.x, the application and protocol developers MUST use AM IDs in the appropriate range. The network protocol implementors MUST use AM ID allocated by the Network Protocol Working Group for the specific protocol. The application developers MUST use AM IDs from the unreserved pool. This TEP describes the process of AM ID allocations and deallocations and how the allocations are documented.

2. AM ID pools

The unreserved pool is in the range 128-255 (0x80-0xFF). The reserved pool is in the range 0-127 (0x00-0x7F).

2.1 Unreserved pool (0x80 - 0xFF)

When an application uses the AM ID in the range 128-255, it is guaranteed to not conflict with AM IDs used by the protocols distributed with TinyOS 2.x. These IDs

may conflict with the protocols in the contrib tree or other applications. No allocation request is necessary to use AM IDs in this range.

2.2 Reserved pool (0x00 - 0x7F)

When a protocol uses an allocated AM ID in the reserved pool, it is guaranteed to not conflict with AM IDs used by applications or other protocols that also use an allocated AM ID. The AM ID may conflict with the protocols and applications in the contrib tree.

3. Requesting AM ID Allocation

The Network Protocol Working Group will maintain a list of all the allocations in the reserved range.

Developers whose protocols will be included within the ”tos” directory MUST receive AM ID allocation from the Network Protocol Working Group. This allocation policy applies to software and protocols maintained by any working group.

To receive an AM ID allocation, please send an email to the chair of Network Protocol Working Group with the following information: * Working Group responsible for the protocol * Name of the protocol and relevant TEPs * Location of the protocol in TinyOS source tree * Number of AM IDs requested and description of each ID * Specific AM ID request (only if necessary)

Upon receiving this request, the chair of the Network Protocol Working Group will allocate the AM ID(s) and document the allocation. If the request is made for a specific AM ID, the chair of the Network Protocol Work Group will try to accommodate that request.

4. Reclaiming the AM ID Allocation

When the working group responsible for maintaining the protocol with an allocated AM ID obsoletes the protocol, the chair of the working group should send a deallocation request to the chair of the Network Protocol Working Group. The chair of the Network Protocol Working Group will document the deallocation.

5. Documenting allocations and deallocations

For each TinyOS 2.x release that introduces a new protocol or use of a new AM ID, the chair of the Network Protocol Working Group creates a new Informational TEP that lists all the AM ID allocations for that release. The TEP is finalized at the time of the release. [TEP_135] documents the AM IDs allocated for TinyOS 2.1.

6. Acknowledgments

Thanks to the TinyOS community at large for helping to formulate this ID allocation policy.

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8. Citations

[TEP_116] TEP 116: Packet Protocols

[TEP_135] TEP 135: Active Message ID Allocation in TinyOS 2.1