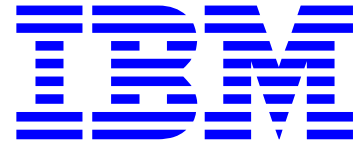


To: INCITS Technical Committee T10
From: Kevin Butt
Date: Tuesday, October 07, 2008 5:05 pm
Document: T10/08-407r0 — iADT: ADT Port State Machine



Revisions

08-407r0 (07 October 2008) Initial revision

Introduction

The more time spent discussing the iADT proposal the more apparent it becomes that understanding what happens in response to each Service Request and when each Service Indication is received depends on what state the ADT port is in. To date, there is no ADT Port connection state machine.

This proposal attempts to define such a state machine. When this definition is agreed to then discussing the Service Requests and Service Indications will be easier because we will have the basis needed for that discussion. At a minimum, this effort needs to occur for those discussions. Furthermore IBM believes that the standard that has iADT included also needs to have the state machine included in order for people to understand it.

Proposal

1.1 iADT state machines

1.1.1 ADT Port Connection state machine

1.1.1.1 ADT Port Connection state machine overview

The ADT Port Connection state machine is used to manage the connection process. The states are as follows:

- a) AP0:Not Connected;
- b) AP1:Listening;
- c) AP2:Connecting;
- d) AP3:Connected; and
- e) AP4:Disconnecting;

This state machine shall start in the AP0:Not Connected state after a hard reset event.

Figure 1 shows the ADT Port Connection state machine. The following subclauses describe the transitions and the actions taken in each state.

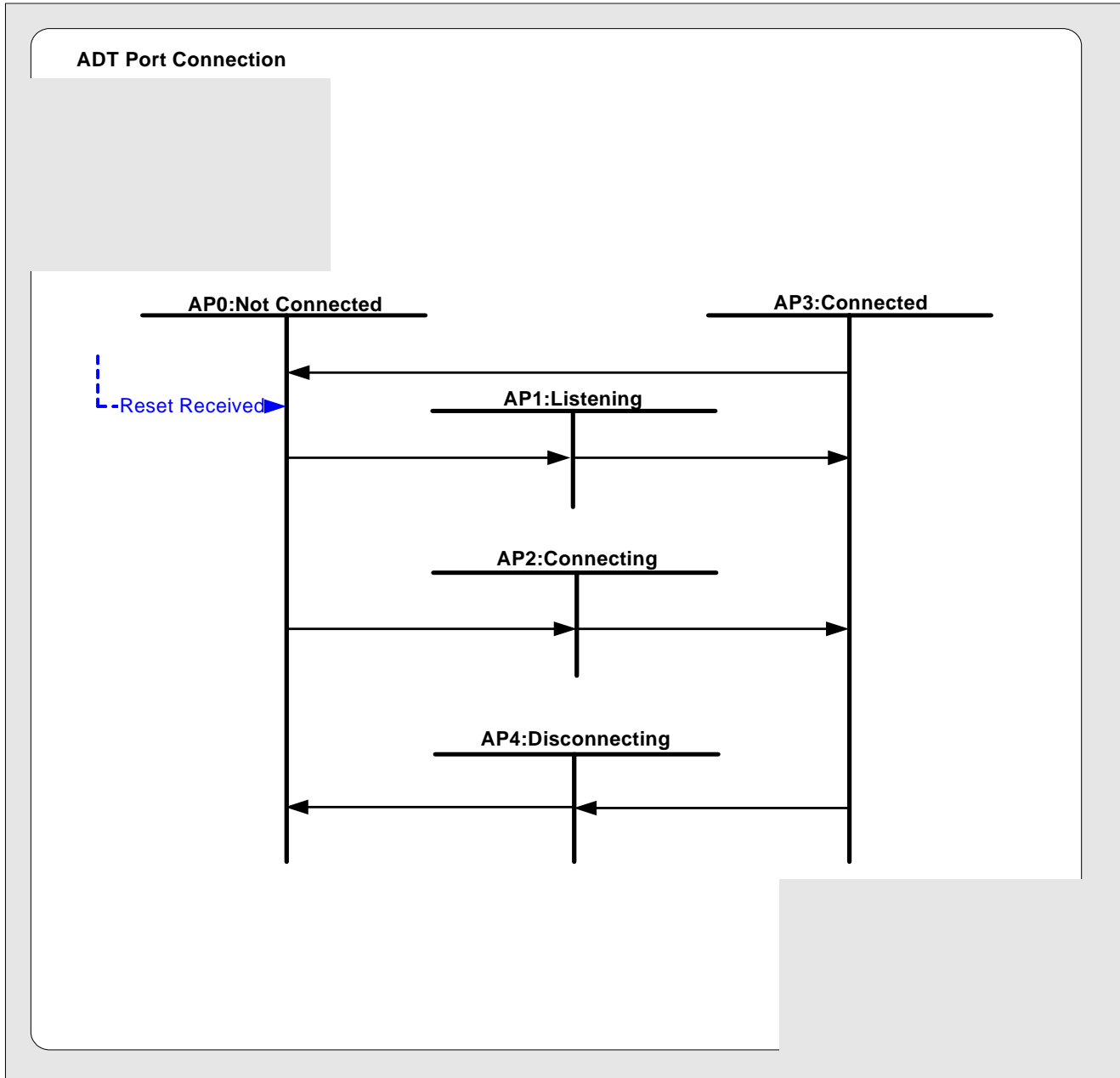


Figure 1 — ADT Port Connection State Diagram

Editors Note 1 - kdbutt: I will use “[” and “]” to surround text that describes the intent but that is not necessarily appropriate for the standard.

1.1.1.2 AP0:Not Connected state

1.1.1.2.1 State description

The AP0:Not Connected state waits for the ADT Port Connection state machine to receive a Listen Service Request or Connect Service Request.

While in the AP0:Not Connected state, *<Need to add>*

1.1.1.2.2 Transition AP0:Not Connected to AP1:Listening

The ADT Port Connection state machine shall transition from AP0:Not Connected to AP1:Listening when the port sends Listen Service Request.

1.1.1.3 AP1:Listening state

1.1.1.3.1 State description

When the ADT Port Connection state machine enters the AP1:Listening state the port shall [cause a listen() socket function call to be sent from the ADT interconnect port].

1.1.1.3.2 Transition AP1:Listening to AP3:Connected

A ADT Port Connection state machine in the AP1:Listening state shall transition to the AP3:Connected state when it receives a Connected Service Indication.

1.1.1.4 AP2:Connecting state

1.1.1.4.1 State description

When the ADT Port Connection state machine enters the AP2:Connecting state it shall [cause a connect() socket function call to be sent from the ADT interconnect port].

1.1.1.4.2 Transition AP2:Connecting to AP0:Not Connected

A ADT Port Connection state machine in the AP2:Connecting state shall transition to the AP0:Not Connected state when it detects a failed connection.

1.1.1.4.3 Transition AP2:Connecting to AP3:Connected

A ADT Port Connection state machine in the AP2:Connecting state shall transition to the AP3:Connected state when the port receives a Connected Service Indication.

1.1.1.5 AP3:Connected state

1.1.1.5.1 State description

When the ADT Port Connection state machine is in the AP3:Connected state the port is able to send and receive data through the ADT interconnect port.

1.1.1.5.2 Transition AP3:Connected to AP0:Not Connected

A port in the AP3:Connected state shall transition to the AP0:Not Connected state when it receives a Disconnected Service Indication.

1.1.1.6 AP4:Disconnected state

1.1.1.6.1 State description

When the ADT Port Connection state machine enters the AP4:Disconnected state, it shall [cause that a shutdown() socket function call or a close() socket function call be sent from the ADT interconnect port].

[Editors Note 2 - kdbutt: There is a flushing issue to discuss here.](#)

1.1.1.6.2 Transition AP4:Disconnected to AP0:Not Connected

A port in the AP4:Disconnected state shall transition to the AP0:Not Connected state when it receives a Disconnected Service Indication.