

Feature Status Reporting

To: X3T13 Technical Committee
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 Subj: Proposal for adding feature status to IDENTIFY DEVICE commands in ATA/ATAPI-4

To pick up the pieces from the proposal made by Richard Schnell of Apple (D96123R0), I propose the following.

In the IDENTIFY DEVICE, IDENTIFY DEVICE DMA, and IDENTIFY PACKET DEVICE responses the following be added.

Word	F/V	
82	F	Command set/feature supported. If words 82 and 83 = 0000h or FFFFh command set notification is not supported. 15 1=IDENTIFY DEVICE DMA command supported 14 1=NOP command supported 13 1=READ BUFFER command supported 12 1=WRITE BUFFER command supported 11 1=WRITE VERIFY command supported 10 1=Host protected area feature set supported 9 1=DEVICE RESET command supported 8 1=SERVICE interrupt supported 7 1=release interrupt supported 6 1=look-ahead supported 5 1=write cache supported 4 1=supports PACKET command feature set 3 1=supports power management feature set 2 1=supports removable feature set 1 1=supports security feature set 0 1=supports SMART feature set
83	F	Command set/feature supported. If words 82 and 83 = 0000h or FFFFh command set notification is not supported. 15 Shall be cleared to zero 14 Shall be set to one 13-1 Reserved 0 1=DOWNLOAD MICROCODE command supported
84	F	Command set/feature supported extension. If words 82, 83, and 84 = 0000h or FFFFh command set notification extension is not supported. 15 Shall be cleared to zero 14 Shall be set to one 13-0 Reserved

85	V	<p>Command set/feature enabled. If words 85, 86, and 87 = 0000h or FFFFh command set enabled notification is not supported.</p> <p>15 1=IDENTIFY DEVICE DMA command supported</p> <p>14 1=NOP command supported</p> <p>13 1=READ BUFFER command supported</p> <p>12 1=WRITE BUFFER command supported</p> <p>11 1=WRITE VERIFY command supported</p> <p>10 1=Host protected area feature set supported</p> <p>9 1=DEVICE RESET command supported</p> <p>8 1=SERVICE interrupt enabled</p> <p>7 1=release interrupt enabled</p> <p>6 1=look-ahead enabled</p> <p>5 1=write cache enabled</p> <p>4 1=supports PACKET command feature set</p> <p>3 1=supports power management feature set</p> <p>2 1=supports removable feature set</p> <p>1 1= security feature set enabled</p> <p>0 1= SMART feature set enabled</p>
86	V	<p>Command set/feature enabled. If words 85, 86, and 87 = 0000h or FFFFh command set enabled notification is not supported.</p> <p>15-1 Reserved</p> <p>0 1=DOWNLOAD MICROCODE command supported</p>
87	V	<p>Command set/feature default. If words 85, 86, and 87 = 0000h or FFFFh command set default notification is not supported.</p> <p>15 Shall be cleared to zero</p> <p>14 Shall be set to one</p> <p>13-0 Reserved</p>

8.8.46 Words 82-84: Features/command sets supported

Words 82, 83, and 84 indicate features/command sets supported. The values 0000h and FFFFh in these words indicate that the feature/command set support is not indicated. Bits 1 through 13 of word 83 and bits 0 through 13 of word 84 are reserved. Bit 14 of word 83 and word 84 shall be set to one and bit 15 of word 83 and word 84 shall be cleared to zero to provide indication that the features/command sets supported words are valid.

If bit 0 of word 82 is set to one, the SMART feature set is supported.

If bit 1 of word 82 is set to one, the security feature set is supported.

If bit 2 of word 82 is set to one, the removable feature set is supported.

If bit 3 of word 82 is set to one, the power management feature set is supported.

If bit 4 of word 82 is set to one, the PACKET command feature set is supported.

If bit 5 of word 82 is set to one, write cache is supported.

If bit 6 of word 82 is set to one, look-ahead is supported.

If bit 7 of word 82 is set to one, release interrupt is supported.

If bit 8 of word 82 is set to one, SERVICE interrupt is supported.

If bit 9 of word 82 is set to one, the DEVICE RESET command is supported.

If bit 10 of word 82 is set to one, the host protected area feature set is supported.

If bit 11 of word 82 is set to one, the device supports the WRITE VERIFY command.

If bit 12 of word 82 is set to one, the device supports the WRITE BUFFER command.

If bit 13 of word 82 is set to one, the device supports the READ BUFFER command.

If bit 14 of word 82 is set to one, the device supports the NOP command.

If bit 15 of word 82 is set to one, the device supports the IDENTIFY DEVICE DMA command.

If bit 0 of word 83 is set to one, the device supports the DOWNLOAD MICROCODE command.

8.8.47 Words 85-87: Features/command sets enabled

Words 85, 86, and 87 indicate features/command sets enabled. The values 0000h and FFFFh in these words indicate that the feature/command set enabled support is not indicated. Bits 1 through 15 of word 86 are reserved. Bits 0-13 of word 87 are reserved. Bit 14 of word 87 shall be set to one and bit 15 of word 87 shall be cleared to zero to provide indication that the features/command sets enabled words are valid.

If bit 0 of word 85 is set to one, the SMART feature set is enabled.

If bit 1 of word 85 is set to one, the security feature set is enabled.

If bit 2 of word 85 is set to one, the removable feature set is supported.

If bit 3 of word 85 is set to one, the power management feature set is supported.

If bit 4 of word 85 is set to one, the PACKET command feature set is supported.

If bit 5 of word 85 is set to one, write cache is enabled.

If bit 6 of word 85 is set to one, look-ahead is enabled.

If bit 7 of word 85 is set to one, release interrupt is enabled.

If bit 8 of word 85 is set to one, SERVICE interrupt is enabled.

If bit 9 of word 85 is set to one, the DEVICE RESET command is supported.

If bit 10 of word 85 is set to one, the host protected area feature set is supported.

If bit 11 of word 85 is set to one, the device supports the WRITE VERIFY command.

If bit 12 of word 85 is set to one, the device supports the WRITE BUFFER command.

If bit 13 of word 85 is set to one, the device supports the READ BUFFER command.

If bit 14 of word 85 is set to one, the device supports the NOP command.

If bit 15 of word 85 is set to one, the device supports the IDENTIFY DEVICE DMA command.

If bit 0 of word 86 is set to one, the device supports the DOWNLOAD MICROCODE command.