

# **Reporting Device Nonvolatile Write Cache**

**(ACS-3)**

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**Revision 2**

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**Document Status**

<b>Revision History</b>		
<b>Rev</b>	<b>Date</b>	<b>Description</b>
0	February, 26 2008	Initial Revision
1	February, 17, 2009	Changed wording in ID bit description, added definition of Nonvolatile Write cache
2	October 21, 2009	Changed wording in ID bit description, edited definition of Nonvolatile Write cache

## 1 Introduction

Reason for change request: ATA devices are emerging that have the ability to purge the contents of their write cache to the media in event of power loss. Many hosts, especially in the enterprise environment, automatically disable the write cache on the device due to the traditionally volatile nature of it. Such a host may consider enabling the write cache if it knew that the write cache was nonvolatile. This proposal provides a method for the device to report that it has a nonvolatile write cache.

## 2 Scope

This proposal requests a simple, informational addition to the ACS-3 standard. The request is to provide IDENTIFY DEVICE data resource to support this information. The information requested to be reported by IDENTIFY DEVICE data is the ability to support nonvolatile write cache.

## 3 Overview

This proposal does not request implementation of a feature set for this information. It simply requests information be provided about the ATA device. As such, it is believed that only the IDENTIFY DEVICE data need be affected.

## 4 Changes to ACS-3

### 4.1 Changes to clause 2

#### 4.1.1 Changes to Approved ANSI References

n/a

#### 4.1.2 Changes to ANSI References Under Development

n/a

#### 4.1.3 Changes to Other References

n/a

### 4.2 Changes to clause 3

#### 4.2.1 Changes to Definitions and abbreviations

- 1 **Non-Volatile Write cache:** Write cache that retains data through all power and reset events.

### 4.3 Changes to clause 4

#### 4.3.1 Overview - Changes to the Feature Set Summary Table

n/a

**4.3.2 New Feature Set**

n/a

**4.4 Changes to clause 7**

**4.4.1 Command Definition**

**4.4.1.1 Your Command Name – n/a,**

n/a

**4.4.1.2 Feature Set**

n/a

**4.4.1.3 Description**

n/a

**4.4.1.4 Inputs**

n/a

**4.4.1.5 Normal Outputs**

n/a

**4.4.1.6 Error Outputs**

n/a

**4.4.1.7 Input Data Structure**

n/a

**4.4.1.8 Output Data Structure**

n/a

**4.4.2 Changes to DCO Set**

n/a

**4.4.3 Changes to IDENTIFY DEVICE data**

This proposal does not add a feature set or command. (There should not be an addition to the IDENTIFY DEVICE data to indicate both supported and enabled descriptions.)

Word	O M	S P	F V	Description
TBD	M	B	V	tbd 0 = Write cache may be volatile 1 = All write cache is nonvolatile
Key:				V The contents of the field is variable and may change depending on the state of the device or the commands executed by the device.
O/M Mandatory/optional requirement.				X The content of the field may be fixed or variable
M Support of the word is mandatory.				S/P Content applies to Serial or Parallel transport
O Support of the word is optional.				S Serial Transport
F/V Fixed/variable content				P Parallel Transport
F The content of the field is fixed and does not change. The DCO command may change the value of a fixed field. For removable media devices, these values may change when media is removed or changed.				B Both Serial and Parallel Transports
				N Belongs to a transport other than Serial or Parallel

**Editor's NOTE: Please assign 1 bit.**

**4.4.4 Changes to IDENTIFY DEVICE description**

The Nonvolatile Write Cache bit shall be set to one if all of the write cache on the device is nonvolatile.

**Note:**

A nonvolatile write cache is independent of the NV Cache Feature Set.