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## The S.M.A.R.T Attribute 193 Load/Unload counter keeps increasing on a SATA 2 hard drive

[Answer ID 5357](#) | Last Updated 12/21/2012[Share](#)[Print](#)[Email this page](#)

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**MUST READ: Western Digital is unable to provide support for the Unix/Linux operating systems outside of jumper configurations (for EIDE hard drives) and physical installation support.**

#### Affected Products:

- WD20EADS
- WD20EARS
- WD15EADS
- WD15EARS
- WD10EADS
- WD10EARS
- WD8000AARS
- WD7500AADS
- WD7500AARS
- WD6400AADS
- WD6400AARS
- WD5000AADS
- WD5000AARS

#### Problem:

The Load/Unload counter for S.M.A.R.T Attribute 193 continues to increase under some distributions of the Linux Operating system and some Windows applications.

#### Cause:

WD drives are designed to reduce power consumption, in part by positioning the heads in a park position (unloading the heads) and turning off unnecessary electronics, resulting in substantial power savings. WD defines this mode as Idle 3.

Some utilities, operating systems, and applications, such as some implementations of Linux, for example, are not optimized for low power storage devices and can cause our drives to wake up at a higher rate than normal. This can negatively impact some of the power savings associated with WD Green Power drives and artificially increases the number of load-unload cycles. The increase in load/unload cycles for a typical desktop user are within design margins (drive has been validated to 1 million load/unload cycles without issue).

**Solution:**

The number of systems using such applications and utilities is contingent on the types of system and applications being used. If you are concerned about your system we have provided three options depending on your system to disable the feature.

1. Do not wake up the drives unnecessarily every 10 to 30 seconds or so, thereby gaining substantial power savings and eliminating excess activity. Increasing logging to every 2 minutes would result in 525,600 minutes per year or 262,800 cycles per year. Increase to 5 minutes and cycles would not even be a factor.

a. Linux users: Decrease the logging message

i. Examine your `/etc/syslog.conf` file for unnecessary logging activity and to optimize its performance. If you don't want to log any system activity, consider disabling `syslogd` and `klogd` entirely; or, at the very least, minimize the amount of logging your system performs. You can also prefix each entry with the minus sign (-) to omit syncing the file after each log entry. This will log anything with a priority of info or higher, but lower than warning, to `/var/log/messages` or `/var/log/mail` without needing to sync to disk after each write. Since we want to keep all messages with a priority of warning, this will be logged to a different file without disabling disk syncing (to prevent data loss in the event of a system crash).

```
1. *.warning /var/log/syslog
```

```
2. *.info;*.!warning;mail.none -/var/log/messages
```

```
3. mail.info;mail.!warning -/var/log/mail
```

ii. Another item to be aware of is the `-- MARK --` messages that `syslogd(8)` writes. This will affect your hard drive inactivity settings. You can simply disable this by running `syslogd(8)` with:

```
1. if [ -x /usr/sbin/syslogd -a -x /usr/sbin/klogd ]; then
```

```
2. # '-m 0' disabled 'MARK' messages
```

```
3. /usr/sbin/syslogd -m 0
```

```
4. sleep 1
```

```
5. # '-c 3' displays errors on console
```

```
6. # '-x' turns off broken EIP translation
```

```
7. /usr/sbin/klogd -c 3 -x
```

```
8. fi
```

b. Modify OS power management timers in control panel

2. Disable Advanced power management using standard ATA command (Uses more power as turns off all low power modes but results in no load/unload cycles)

1. Linux users add following (`hdparm -B 255 /dev/sdX` where X is your hard drive device). ATA users can disable APM usually controlled via BIOS and/or OS.

3. Set Idle3 to max time (effectively turns off load/unload power saving feature thus will use more power) per below link.

Most of our customers do not disable the advanced power savings features. In addition to the options provided above we have also provided a utility. This utility will modify the behavior of the drive to wait longer before invoking Idle 3 mode. By disabling this feature your drive will consume additional power during periods of inactivity. This update is described in WD's Process Change Notice PCN 2579-701324-A02 (see attached PDF file).

The following article contains the download location: [Answer ID 3263: The S.M.A.R.T Attribute 193 Load/Unload counter continue to increase for the WD RE2-GP SATA II hard drives=](#)

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**File Attachments**

-  [PCN 2579-701324-A02.pdf](#) (42.66 KB)