Storage Consistency Customization Guide

Updated April 23, 2018 for use with
PCMark 8 Professional Edition v2.7.613

Usage

Before you start, please refer to the PCMark 8 Technical Guide for a detailed explanation of the operation of the Storage Consistency test and the PCMark 8 Command Line Guide for details of the options available when running PCMark 8 from the command line.

The PCMark 8 Storage Consistency test can be customized by editing a suitable benchmark definition file. We recommend starting with the Consistency test XML provided by Futuremark and editing only the settings that need to be changed.

Run the program from a command line that was started as an administrator, (right-click on the *cmd* shortcut, and select *Run as Administrator*).

Example

```
PCMark8Cmd.exe --custom=c:\my_consistency_test.xml
--storagepath=\\.\PhysicalDrive0
```

⚠ PCMark 8 Professional Edition license required for command line use.

Options

Setting	Default	Description
precondition_passes	2	The number of passes in the precondition phase.
precondition_block_size	131072	The block size (in bytes) used for write operations in the precondition phase.
post_precondition_idle	0	The time to idle (in ms) between precondition and degrade phases.
degrade_duration_init	600000	The initial duration (in ms) of a degrade phase pass.
degrade_duration_increment	300000	The amount of time (in ms) that the duration of the degrade phase pass is (cumulatively) incremented on each pass.
degrade_passes	8	The number of passes in the degrade phase.
degrade_min_block_size	4096	The minimum block size (in bytes) used with write operations in degrade phase.
degrade_max_block_size	1048576	The maximum block size (in bytes) used with write operations in the degrade phase.
degrade_alignment	4096	Alignment of write operation offsets in the degrade phase.
steady_passes	5	The number of passes in the steady phase.
steady_idle	0	The time to idle (in ms) between steady phase passes.
recovery_duration_init	300000	The initial duration (in ms) of a recovery phase pass.
recovery_duration_increment	0	The amount of time (in ms) that the duration of the recovery phase pass is (cumulatively) incremented on each pass.
recovery_passes	5	The number of passes in the recovery phase.
postcondition_passes	1	The number of passes in the postcondition phase.
postcondition_block_size	131072	The block size (in bytes) that is used with write operations in postcondition phase.
short_stroke	0	The size (in bytes) used on the device being tested. A value of 0 or any value larger than the device's capacity results in the whole capacity being used. Use this setting when only part of the device is used for performance reasons (a practise known as short stroking). The value must a multiple of the device's sector size (usually 512

		or 4096).

Storage Consistency test default XML

For version 2.0 of the test, released January 18, 2016

Version 2.0 of the test provides better support for NVMe drives. Scores from NVMe drives improve in some cases. Other types of drive are unaffected. Download the XML here.

```
<?xml version="1.0" encoding="utf-8"?>
<benchmark>
  <result_version>10</result_version>
  <sets>
    <set>
      <name>Pcm85StorageConsistencyv2</name>
      <settings>
        <setting>
          <name>window_message_id</name>
          <value>4001</value>
        </setting>
        <setting>
          <name>pre_work_sleep</name>
          <value>0</value>
        </setting>
      </settings>
      <workloads>
        <workload>
          <name>Pcm85StorageConsistencyv2</name>
          <settings>
            <setting>
              <name>binary</name>
              <value>StorageTracePlayback.exe</value>
            </setting>
            <setting>
              <name>action</name>
              <value>consistency</value>
            </setting>
            <setting>
              <name>storage_tech</name>
              <value>DiskTarget</value>
```

```
            </setting>
            <setting>
              <name>archive</name>
              <value>storage.dat</value>
            </setting>
            <setting>
              <name>trace_file</name>
<value>storagetraces\wow.xml;storagetraces\bf3.xml;storagetraces\pho
toshop_light.xml;storagetraces\photoshop_heavy.xml;storagetraces\ind
esign.xml;storagetraces\aftereffects.xml;storagetraces\illustrator.x
ml;storagetraces\word.xml;storagetraces\powerpoint.xml;storagetraces
\excel.xml</value>
            </setting>
            <setting>
              <name>run_time</name>
              <value>0</value>
            </setting>
            <setting>
              <name>precondition_passes</name>
              <value>2</value>
            </setting>
            <setting>
              <name>precondition_block_size</name>
              <value>131072</value>
            </setting>
            <setting>
              <name>post_precondition_idle</name>
              <value>0</value>
            </setting>
            <setting>
              <name>degrade_duration_init</name>
              <value>600000</value>
            </setting>
            <setting>
              <name>degrade_duration_increment</name>
              <value>300000</value>
            </setting>
            <setting>
              <name>degrade_passes</name>
              <value>8</value>
            </setting>
            <setting>
```

```
  <name>degrade_min_block_size</name>
  <value>4096</value>
</setting>
<setting>
  <name>degrade_max_block_size</name>
  <value>1048576</value>
</setting>
<setting>
  <name>degrade_alignment</name>
  <value>4096</value>
</setting>
<setting>
  <name>steady_passes</name>
  <value>5</value>
</setting>
<setting>
  <name>steady_idle</name>
  <value>0</value>
</setting>
<setting>
  <name>recovery_duration_init</name>
  <value>300000</value>
</setting>
<setting>
  <name>recovery_duration_increment</name>
  <value>0</value>
</setting>
<setting>
  <name>recovery_passes</name>
  <value>5</value>
</setting>
<setting>
  <name>postcondition_passes</name>
  <value>1</value>
</setting>
<setting>
  <name>postcondition_block_size</name>
  <value>131072</value>
</setting>
<setting>
  <name>short_stroke</name>
  <value>0</value>
```

```
            </setting>
            <setting>
              <name>write_through_flag</name>
              <value>false</value>
            </setting>
            <setting>
              <name>4k_alignment</name>
              <value>true</value>
            </setting>
          </settings>
        </workload>
      </workloads>
    </set>
  </sets>
</benchmark>
```

For version 1.1 of the test released November 27, 2014

You can download the XML here.

```
<?xml version="1.0" encoding="utf-8"?>
<benchmark>
  <result_version>10</result_version>
  <sets>
    <set>
      <name>Pcm85StorageConsistency</name>
      <settings>
        <setting>
          <name>window_message_id</name>
          <value>4001</value>
        </setting>
        <setting>
          <name>pre_work_sleep</name>
          <value>0</value>
        </setting>
      </settings>
      <workloads>
        <workload>
          <name>Pcm85StorageConsistency</name>
          <settings>
            <setting>
              <name>binary</name>
```

```
            <value>StorageTracePlayback.exe</value>
          </setting>
          <setting>
            <name>action</name>
            <value>consistency</value>
          </setting>
          <setting>
            <name>storage_tech</name>
            <value>DiskTarget</value>
          </setting>
          <setting>
            <name>archive</name>
            <value>storage.dat</value>
          </setting>
          <setting>
            <name>trace_file</name>
<value>storagetraces\wow.xml;storagetraces\bf3.xml;storagetraces\pho
toshop_light.xml;storagetraces\photoshop_heavy.xml;storagetraces\ind
esign.xml;storagetraces\aftereffects.xml;storagetraces\illustrator.x
ml;storagetraces\word.xml;storagetraces\powerpoint.xml;storagetraces
\excel.xml</value>
          </setting>
          <setting>
            <name>run_time</name>
            <value>0</value>
          </setting>
          <setting>
            <name>precondition_passes</name>
            <value>2</value>
          </setting>
          <setting>
            <name>precondition_block_size</name>
            <value>131072</value>
          </setting>
          <setting>
            <name>post_precondition_idle</name>
            <value>0</value>
          </setting>
          <setting>
            <name>degrade_duration_init</name>
            <value>600000</value>
          </setting>
```

```
<setting>
  <name>degrade_duration_increment</name>
  <value>300000</value>
</setting>
<setting>
  <name>degrade_passes</name>
  <value>8</value>
</setting>
<setting>
  <name>degrade_min_block_size</name>
  <value>4096</value>
</setting>
<setting>
  <name>degrade_max_block_size</name>
  <value>1048576</value>
</setting>
<setting>
  <name>degrade_alignment</name>
  <value>4096</value>
</setting>
<setting>
  <name>steady_passes</name>
  <value>5</value>
</setting>
<setting>
  <name>steady_idle</name>
  <value>0</value>
</setting>
<setting>
  <name>recovery_duration_init</name>
  <value>300000</value>
</setting>
<setting>
  <name>recovery_duration_increment</name>
  <value>0</value>
</setting>
<setting>
  <name>recovery_passes</name>
  <value>5</value>
</setting>
<setting>
  <name>postcondition_passes</name>
```

```
            <value>1</value>
          </setting>
          <setting>
            <name>postcondition_block_size</name>
            <value>131072</value>
          </setting>
          <setting>
            <name>short_stroke</name>
            <value>0</value>
          </setting>
        </settings>
      </workload>
    </workloads>
  </set>
 </sets>
</benchmark>
```