

[MS-FSCC]: File System Control Codes

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Errata below are for Protocol Document Version [V51.0 - 2021/06/25](#).

Errata Published*	Description
2021/12/14	<p>In section 2.1.5.9.34, FSCTL_SET_INTEGRITY_INFORMATION_EX, revised condition tested for InputBuffer.KeepIntegrityStateUnchanged.</p> <p>Changed from:</p> <p>If InputBuffer.KeepIntegrityStateUnchanged != 0, the object store MUST:</p> <p>...</p> <p>If InputBuffer. KeepIntegrityStateUnchanged != 0, the object store MUST:</p> <p>Changed to:</p> <p>If InputBuffer.KeepIntegrityStateUnchanged == 0, the object store MUST:</p> <p>...</p> <p>If InputBuffer. KeepIntegrityStateUnchanged == 0, the object store MUST:</p>
2021/12/14	<p>In 2.1.5.9.33, FSCTL_SET_INTEGRITY_INFORMATION, added conditions for selecting the checksum algorithm.</p>

Errata Published*	Description
	<p>Changed from:</p> <p>If InputBuffer.ChecksumAlgorithm != CHECKSUM_TYPE_UNCHANGED, the object store MUST set Open.Stream.CheckSumAlgorithm to InputBuffer.ChecksumAlgorithm.</p> <p>Changed to:</p> <p>If InputBuffer.ChecksumAlgorithm != CHECKSUM_TYPE_UNCHANGED, the object store MUST set Open.Stream.CheckSumAlgorithm to CRC32 if the ReFS cluster size is 4KB or CRC64 if the cluster size is 64K.</p>
2021/12/14	<p>In section 2.1.5.9.34, FSCTL_SET_INTEGRITY_INFORMATION_EX, changed the product behavior note.</p> <p>Changed from:</p> <p><123> Section 2.1.5.9.34: Only ReFS supports integrity.</p> <p>Changed to:</p> <p><123> Section 2.1.5.9.34: Only ReFS v3.2 or higher (Windows 10 v1507 operating system or higher) supports integrity.</p>
2021/12/14	<p>In section 2.3.74, FSCTL_SET_INTEGRITY_INFORMATION Reply, removed the "the file is not empty" from the list of causes for STATUS_INVALID_PARAMETER.</p> <p>Changed from:</p> <p>The input buffer length is less than the size, in bytes, of the FSCTL_SET_INTEGRITY_INFORMATION_BUFFER element; the handle is not to a file or directory; the file is not empty; or the requested ChecksumAlgorithm field is not one of the values listed in the table for the ChecksumAlgorithm field in the FSCTL_SET_INTEGRITY_INFORMATION Request.</p> <p>Changed to:</p> <p>The input buffer length is less than the size, in bytes, of the FSCTL_SET_INTEGRITY_INFORMATION_BUFFER element; the handle is not to a file or directory; or the requested ChecksumAlgorithm field is not one of the values listed in the table for the ChecksumAlgorithm field in the FSCTL_SET_INTEGRITY_INFORMATION Request.</p> <p>In section 2.3.76, FSCTL_SET_INTEGRITY_INFORMATION_EX Reply, removed the "the file is not empty" from the list of causes for STATUS_INVALID_PARAMETER.</p> <p>Changed from:</p> <p>The input buffer length is less than the size, in bytes, of the FSCTL_SET_INTEGRITY_INFORMATION_BUFFER_EX element; the handle is not to a file or directory; the file is not empty; or Version is not equal to 1.</p> <p>Changed to: The input buffer length is less than the size, in bytes, of the FSCTL_SET_INTEGRITY_INFORMATION_BUFFER_EX element; the handle is not to a file or directory; or Version is not equal to 1.</p>
2021/12/14	<p>In section 2.3.75, FSCTL_SET_INTEGRITY_INFORMATION_EX Request, revised the meaning of EnableIntegrity field values.</p> <p>Changed from:</p>

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	<table border="1" data-bbox="415 260 1414 436"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0x00</td> <td>The file or directory integrity state must not change.</td> </tr> <tr> <td>0x01</td> <td>The file or directory integrity state should change based on the EnableIntegrity parameter.</td> </tr> </tbody> </table> <p>Changed to:</p> <table border="1" data-bbox="415 579 1414 756"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0x00</td> <td>The file or directory integrity state should change based on the EnableIntegrity parameter.</td> </tr> <tr> <td>0x01</td> <td>The file or directory integrity state must not change.</td> </tr> </tbody> </table>	Value	Meaning	0x00	The file or directory integrity state must not change.	0x01	The file or directory integrity state should change based on the EnableIntegrity parameter.	Value	Meaning	0x00	The file or directory integrity state should change based on the EnableIntegrity parameter.	0x01	The file or directory integrity state must not change.
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2021/12/14	<p>In section 2.3.73, FSCTL_SET_INTEGRITY_INFORMATION Request, added description of the dependency of the checksum calculation on the cluster size.</p> <p>Changed from:</p> <table border="1" data-bbox="415 936 1414 1155"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>CHECKSUM_TYPE_CRC32 0x0001</td> <td>The file or directory is set to provide integrity using CRC32 checksum.</td> </tr> <tr> <td>CHECKSUM_TYPE_CRC64 0x0002</td> <td>The file or directory is set to provide integrity using a CRC64 checksum.</td> </tr> </tbody> </table> <p>Changed to:</p> <table border="1" data-bbox="415 1302 1414 1602"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>CHECKSUM_TYPE_CRC32 0x0001</td> <td>The file or directory is set to provide integrity using CRC32 or CRC64 checksum. If the ReFS cluster size is 4KB, the checksum used is CRC32; otherwise, if the cluster size is 64K, the CRC64 checksum is used.</td> </tr> <tr> <td>CHECKSUM_TYPE_CRC64 0x0002</td> <td>The file or directory is set to provide integrity using CRC32 or CRC64 checksum. If the ReFS cluster size is 4KB, the checksum used is CRC32; otherwise, if the cluster size is 64K, the CRC64 checksum is used.</td> </tr> </tbody> </table>	Value	Meaning	CHECKSUM_TYPE_CRC32 0x0001	The file or directory is set to provide integrity using CRC32 checksum.	CHECKSUM_TYPE_CRC64 0x0002	The file or directory is set to provide integrity using a CRC64 checksum.	Value	Meaning	CHECKSUM_TYPE_CRC32 0x0001	The file or directory is set to provide integrity using CRC32 or CRC64 checksum. If the ReFS cluster size is 4KB, the checksum used is CRC32; otherwise, if the cluster size is 64K, the CRC64 checksum is used.	CHECKSUM_TYPE_CRC64 0x0002	The file or directory is set to provide integrity using CRC32 or CRC64 checksum. If the ReFS cluster size is 4KB, the checksum used is CRC32; otherwise, if the cluster size is 64K, the CRC64 checksum is used.
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	<p>Changed to: <76> Section 2.3.75: The FSCTL_SET_INTEGRITY_INFORMATION_EX Request message is supported only by the ReFS file system. v3.2 or higher (Windows 10 v1507 operating system or higher).</p>
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*Date format: YYYY/MM/DD