



We use optional cookies to improve your experience on our websites, such as through social media connections, and to display personalized advertising based on your online activity. If you reject optional cookies, only cookies necessary to provide you the services will be used. You may change your selection by clicking “Manage Cookies” at the bottom of the page. [Privacy Statement](#) [Third-Party Cookies](#)

Accept

Reject

Manage cookies

# Microsoft Ignite

Nov 19–22, 2024

Register now >



Learn

Discover

Product documentation

Development languages

Topics



Sign in

## Open Specifications

Specifications

Dev Center

Events

Test

Support

Programs

Patents

Blog



Filter by title

Open Specifications

Protocols

Protocols

Windows Protocols

Windows Protocols

Technical Documents

Technical Documents

[MS-FSCC]: File System Control Codes

[MS-FSCC]: File System Control Codes

1 Introduction

2 Structures

3 Structure Examples

4 Security

5 Appendix A: NTFS Alternate Streams

5 Appendix A: NTFS Alternate Streams

5.1 NTFS Streams

5.2 NTFS Attribute Types

5.3 NTFS Reserved File Names

5.4 NTFS Stream Names

5.5 NTFS Stream Types

5.6 Known Alternate Stream Names

6 Appendix B: Product Behavior

7 Change Tracking

8 Index

Learn /



## 5.1 NTFS Streams

Article • 12/14/2021

Feedback

All files on an NTFS volume consist of at least one stream - the main stream – this is the normal, viewable file in which data is stored. The full name of a stream is of the form below.

<filename>:<stream name>:<stream type>

The default data stream has no name. That is, the fully qualified name for the default stream for a file called "sample.txt" is "sample.txt:.\$DATA" since "sample.txt" is the name of the file and ".\$DATA" is the stream type.

A user can create a named stream in a file and ".\$DATA" as a legal name. That means that for this stream, the full name is sample.txt:.\$DATA:.\$DATA. If the user had created a named stream of name "bar", its full name would be sample.txt:bar:.\$DATA. Any legal characters for a file name are legal for the stream name (including spaces). For more information about the naming format for streams, see [MS-FSCC]. For more information about the attributes of a stream, see [MS-FSA].

In the case of directories, there is no default data stream, but there is a default directory stream. Directories are the stream type \$INDEX\_ALLOCATION. The default stream name for the type \$INDEX\_ALLOCATION (a directory stream) is \$I30. (This contrasts with the default stream name for a \$DATA stream, which has an empty stream name.) The following are equivalent:

Dir C:\Users

Dir C:\Users:\$I30:\$INDEX\_ALLOCATION

Dir C:\Users::\$INDEX\_ALLOCATION

Although directories do not have a default data stream, they can have named data streams. These alternate data streams are not normally visible, but can be observed from a command line using the /R option of the DIR command.

## Additional resources




Events


Nov 20, 12 AM - Nov 22, 12 AM



Join online sessions at Microsoft Ignite created to expand your skills and help you tackle today's complex issues.

 Download PDF

Register now


 English (United States)

 Your Privacy Choices


 Theme 

Manage cookies


Previous Versions

Blog 

Contribute

Privacy 

Terms of Use

Trademarks 

© Microsoft 2024