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## 5.1 NTFS Streams

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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.

English (United States)

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