



The **Portable Document Format (PDF)** is a [file format](#) developed in the 1990s to present [documents](#), including text formatting and images, in a manner independent of [application software](#), [hardware](#), and [operating systems](#).^{[3][4]} Based on the [PostScript](#) language, each PDF file encapsulates a complete description of a fixed-layout flat document, including the text, [fonts](#), [vector graphics](#), [raster images](#) and other information needed to display it. PDF was standardized as an [open format](#), ISO 32000, in 2008, and does not require any royalties for its implementation.

Today, PDF files may contain a variety of content besides flat text and graphics including logical structuring elements, interactive elements such as annotations and form-fields, layers, [rich media](#) (including video content) and three dimensional objects using [U3D](#) or [PRC](#), and various other data formats.^[citation needed] The PDF specification also provides for encryption and [digital signatures](#), file attachments and metadata to enable workflows requiring these features.