

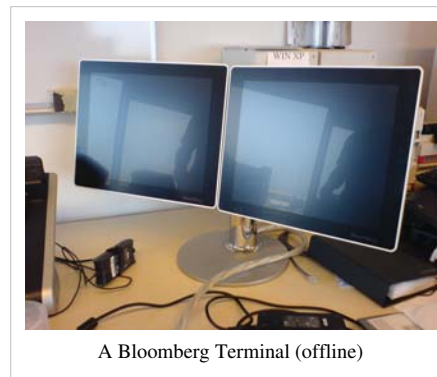
# Bloomberg Terminal

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The **Bloomberg Terminal** is a computer system provided by Bloomberg L.P. that enables professionals in finance and other industries to access the **Bloomberg Professional** service through which users can monitor and analyze real-time financial market data movements and place trades on the electronic trading platform.<sup>[1]</sup> The system also provides news, price quotes, and messaging across its proprietary secure network. Most large financial firms have subscriptions to the Bloomberg Professional service. Many exchanges charge their own additional fees for access to real time price feeds across the terminal. The same applies to various news organizations. All Bloomberg Terminals are leased in 2 year cycle, with leases based on how many displays are connected to each terminal. A subscription is around US\$1,500 per month.<sup>[2]</sup> Most Bloomberg setups have between 2 and 4 displays. As of May 2010, there are 310,000 Bloomberg Terminal subscribers worldwide.<sup>[3]</sup>

## Architecture

The terminal implements a client-server architecture with the server running on a multiprocessor Unix platform. The client, used by the end users to interact with the system, is a Windows application. End users can also make use of an extra service (*Bloomberg Anywhere*) that allows Web access to this Windows application via a Citrix client. There is also a Wireless Application Protocol (WAP) portal, and applications that allow mobile access via Android, BlackBerry, and iOS. The server side of the terminal was originally developed using mostly the programming languages Fortran and C. Recent years have seen a transition towards C++ and embedded JavaScript on the clients and servers.



A Bloomberg Terminal (offline)

Each server machine runs multiple instances of the server process. Using a proprietary form of context-switching, the servers keep track of the state of each end user, allowing consecutive interactions from a single user to be handled by different server processes. The graphical user interface (GUI) code is also proprietary.

## Keyboard

In Michael Bloomberg's 1997 autobiography, in a chapter titled "Computers for Virgins", he explained how the design of the terminal was slightly different from the standard IBM PC keyboard layout that was popular at that time. The keyboard layout was designed for traders and other market makers who had no prior computer experience. While the look and feel of the Bloomberg keyboard is very similar to the standard computer keyboard, there are several enhancements that help users navigate through the system, from the idea for a user friendly system when originally designed in the early 1980s.

Commands for the keyboard are commonly referred to inside angle brackets. The keys were replaced from the technical name (i.e. F10) and the then standard beige color, opting for a user friendly name and a memorable color, in this example for a lookup on an Index with a yellow key. Another example, the "Esc" for most computer keyboards is referred to as red colored <CANCEL> key in the Bloomberg system, with the red to catch one's eye to stop a task. The "Enter" key is referred to as <GO> with a green color, deriving from the *Monopoly* game board, by passing "Go" and collecting \$200 in a hope that the user could make money on the information he would find (hence the green key.)<sup>[4]</sup>

Crucially, the Bloomberg keyboard includes a unique <MENU> key, which serves a similar function to the "back" button in an internet browser.

The yellow hot keys along the top of the keyboard are used to enter market sectors, and must be used to allow the terminal to correctly identify a security.

- GOVT - government securities (US treasury and non-US)
- CORP - corporate debt
- MTGE - mortgage securities
- M-Mkt - money market
- MUNI - municipal debt
- PFD - preferred shares
- EQUITY - equity shares
- COMDTY - commodity markets
- INDEX - indices
- CURRENCY - currency markets



Bloomberg terminal keyboard

For example, if someone interested in the Vodafone stock listed in London market, one enters VOD LN <Equity> <GO> where VOD is the company's ticker, and LN is the venue code for London. A detailed option list related to Vodafone UK stock will pop up, the person can then choose different options by pressing related keys or using the mouse to select the option.

Similarly, USDEUR <Curncy> <GO> displays the US dollar / Euro exchange rate.

other common Bloomberg commands for Equity:

- HP - Display the detailed 1 year price of that stock
- DVD - Dividend / Split Summary of that stock
- CACS - Corporate Actions related to that stock
- CN - News feeds related to that stock

Thus, if someone interested in the Vodafone UK stock price, they can in fact directly type in VOD LN <Equity> HP <GO>.

The Bloomberg keyboard is heavier and sturdier than standard keyboards (the current version, SEA100 Bloomberg keyboard weighed around 3 kg); it also comes with built-in speakers for video and multimedia features. The current SEA100 version, as well as the previous version has built-in biometric sensor to ensure the terminal remains to the registered user alone.

### Bloomberg keys on a US Windows keyboard

CANCEL	HELP	GOVT	CORP	MTGE		M-MKT	MUNI	PFD	EQUITY		CMDTY	INDEX	CRNCY	CLIENT	PRINT	ScrLk	CONN DFLT					
~	!	@	#	\$	%	^	&	*	(	)	-	=	← Backspace		CMAND	HOME	BACK	€ /4	₪ /8	¥ /32	£ /64	
Tab	Q	W	E	R	T	Y	U	I	O	P	{	}										
Caps Lock	A	S	D	F	G	H	J	K	L	:	"	'	↵	Enter								
Shift	Z	X	C	V	B	N	M	<	>	?	/	.	,	Shift								
Ctrl	Win Key	Alt								Alt		Win Key	Menu	Ctrl								

DEL	MENU	FWD	QUTE 1	QUTE 2	SRVYS	/16 1/2
			RPRT 1	RPRT 2	NEWS	
	↑		MESSAGE	MEMO	MNTOR	GO
←	↓	→	PANEL		CODE	

## Terminal and related products

Self-contained operating system running on custom hardware - commonly referred to as a "Bloomberg Box"<sup>[5]</sup> - the Bloomberg Terminal now functions as an application within the Windows environment. From a user's perspective, there are essentially 3 distinct levels to the system:

### Core Terminal

This is the original system, consisting typically of 4 windows or "Panels", each containing a separate instance of the terminal command line. By entering tickers and functions, data can be displayed and programs run to analyze it. These multiple windows allows users to call up several entirely different sets of data and compare it quickly. Users can run all four windows on a single monitor or spread them out amongst many monitors, maximizing each to create, in effect, up to 4 Terminals!

In Feb 2012 Bloomberg LP publicly announced an upgrade to the Terminal called "Bloomberg NEXT". The stated goals of this multi-year, \$100M project were to improve the discoverability and usability of the Core Terminal's functionality, making it easier and more intuitive to use.<sup>[6]</sup>

### Launchpad

Launchpad is a customizable display consisting of a number of smaller windows, called 'components', each of which dedicated to permanently displaying one set of data. A typical user would be a stockbroker who wishes to keep a list of 30 stocks visible at all times: Launchpad creates a small component which will show these prices constantly, saving the broker from having to check each stock independently in the terminal. It can be toggled on or off by hitting the <LPAD> key. Other functions, such as email inboxes, calculation tools and news tickers can be similarly displayed. The Instant Bloomberg messaging/chat tool is a Launchpad component, as are the chat windows it creates. To launch a normal function from the Bloomberg Terminal's 4 Screens into launchpad type LLP and press enter on the target screen you wish to turn into a launchpad item.

### Application programming interface

The Bloomberg Open API (BLPAPI) application programming interface (API) allows third-party applications, such as Microsoft Excel, to access Bloomberg data via the Terminal and Bloomberg's market data products. A user might wish to use Bloomberg data from the Terminal to create their own calculations; by accessing streaming, historical, and reference market data from another program, they can build these formulae. The Bloomberg Terminal installation ships with Excel add-ins which facilitate building spreadsheets which consume market data.<sup>[7]</sup> In addition, the MIT licensed BLPAPI SDK allows Bloomberg subscribers to build their own software which accesses market data in C, C++, Java, and Perl from Windows, Linux, and Solaris.<sup>[8]</sup>

## Competitors

Leading competitors for electronic financial data provision include SIX Financial Information, Thomson Reuters, Morningstar Direct, Markit, Zacks Investment Research, FactSet Research Systems, Capital IQ, PrivateRaise.com, Advantage Data Inc, Fidessa and Dow Jones. According to Burton-Taylor International Consulting,<sup>[9]</sup> the market for financial data and analytics was worth almost \$25 billion as of 2011, with Bloomberg and Thompson Reuters splitting 30% each of the market share. This was a major improvement for Bloomberg: in 2007 Bloomberg's share was 26% to Reuters' 36%.

## References

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## External links

- Bloomberg Professional (<http://about.bloomberg.com/professional/index.html>)
- Bloomberg Terminal redesign (<http://www.portfolio.com/culture-lifestyle/goods/gadgets/2007/07/09/Bloomberg-Terminals-Design>)
- Bloomberg LP. 2001. Bloomberg Basic Manual (<http://firestone.princeton.edu/econlib/blp/docs/bloombergmanualehighuniversity.pdf>). Correction 15 Feb. 2012: This 84-page 1.4 Mb PDF file has been deleted from Princeton.edu, but is still available (only) at <http://www.weave.de/wp-content/uploads/2012/01/bloombergmanualehighuniversity.pdf>

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