

Blackberry Technology

Jyothisha A R, Anina Thomas

ABSTRACT: Blackberry is a wireless handheld device introduced in 1997 as a two-way pager. The more commonly known smartphone Blackberry, which supports push e-mail, mobile telephone, text messaging, internet faxing, web browsing and other wireless information services was released in 2002.

A Blackberry technology is a personal communications device developed, distributed, and serviced by Research in Motion (RIM), a Canadian company headquartered in Waterloo, Ontario. Blackberry can provide email, text messaging, web browsing and telephone service. It is an end-to-end wireless email solution that allows access to your Outlook inbox, calendar, contacts and Tasks with full wireless synchronization.

The process works in reverse when you make changes on your Blackberry device that need to be copied into your Outlook account, example: 'if you send a message that needs to be copied to your contacts list'. The original Blackberry device had a monochrome display, but all current models have colour display.

Most Blackberry are Bluetooth capable, allowing for the use of wireless Bluetooth headsets to handle telephone calls. Because the Blackberry relies on the cellular telephone network, it is only available through cell phone carrier, like cell phones, each carrier has its own unique models.

INTRODUCTION

Blackberry handhelds are integrated into an organization's e-mail system through a software package called "Blackberry Enterprise Server" (BES). Versions of BES are available for Microsoft Exchange, Lotus Domino and Novell GroupWise. While individual users may be able to use a wireless provider's e-mail services without having to install BES themselves, organizations with multiple users usually run BES on their own network. Some third-party companies provide hosted BES solutions.

Every Blackberry has a unique id called Blackberry PIN which is used to identify the device to the BES. BES can act as a sort of e-mail relay for corporate accounts so that users always have access to their e-mail. The software monitors the user's local "inbox", and when a new message comes in, it picks up the message and passes it to Rim's Network Operations Center (NOC).

The messages are then relayed to the user's wireless provider, which in turn delivers them to the user's Blackberry device. This is called "push e-mail," because all new e-mails, contacts and calendar entries are "pushed" out to the Blackberry device automatically, as opposed to the user synchronizing the data by hand.

Device storage also enables the mobile user to access all data offline in areas without wireless service. As soon as the user connects again, the BES sends the latest data. An included feature in the newer models of the Blackberry is the ability for it to track your current location through Trilateration.

One can view the online maps on the phone and see current location denoted by a flashing dot. However, accuracy of Blackberry trilateration is less than that of GPS due to a number of factors, including cell tower blockage by large buildings, mountains, or distance. BES also provides handhelds with TCP/IP connectivity accessed through a component called "Mobile Data Service" (MDS). This allows for custom application development using data streams on Blackberry devices based on the Sun Microsystem Java ME platform. In addition, BES provides security, in the form of Triple DES or, more recently, AES encryption of all data (both e-mail and MDS traffic) that travels between the Blackberry handheld and a Blackberry Enterprise Server.

Most providers offer flat monthly pricing for unlimited data between Blackberry units and BES. In addition to receiving e-mail, organizations can make intranets or custom internal applications with unmetered traffic.

What is Blackberry Technology?

The recent Blackberry 9000 series has been designed and work on the Intel Xscale 624MHz CPU. The earlier version of Blackberry cell phones worked with an 80MHz processor and were hence comparatively slower in downloading 3G web pages. Blackberry uses an IPD file for its data storage. A single IPD is used. The recent Blackberry 9000 series has been designed and work on the Intel Xscale 624MHz for the database handling which makes the performance even faster. The technology encompasses simple features like calendar, reminders and games, along with the basic applications of making and receiving calls and messages. Besides the basic features it also allows you to send emails and browse web pages.

The manufacturers have also tied up with various vendors like Microsoft, IBM and Novell to integrate Outlook, Notes and Groupwise into these phones. Almost all the phones manufactured with the Blackberry technology have Bluetooth integrated in them. Some models also have inbuilt cellular feature. History The Blackberry was a communication device that was developed in a Canada based company, Research in Motion (RIM) in 1999. It was built in with a multi-tasking operating system. The earlier phones manufactured under this technology used the 80386 microprocessor for their working.

How it works

As we all know, there is always software behind the hardware. This holds true for the blackberry as well. Blackberry Server Software comes in two forms

1. BlackBerry Professional Software (BPS)
2. BlackBerry Enterprise Server (BES)

The way that the BlackBerry server works applies to both the BlackBerry Professional Software (BPS) and the BlackBerry Enterprise Server (BES)

The basic steps in receiving an email on a blackberry device are as follows :

1. The email message is sent.
2. Message arrives at your email server (usually the exchange server) and is sent as normal to your PC/ Laptop (as in fig 3.1).
3. The BlackBerry server (the mail is delivered using a "push" concept to the Blackberry Enterprise Server) compresses, encrypts and forwards the message automatically to your BlackBerry handset.
4. Message arrives at the BlackBerry via the Internet and the mobile carrier's network.
5. The Blackberry handheld device receives decrypts and decompresses the email, and alerts the user.

BlackBerry Professional Software (BPS)

When you buy a Blackberry handheld you can download for free a fully-functional version of Blackberry Professional Software (BPS) for your existing email server.

It is express is the ideal solution for smaller organisation with their own email server or for large organisation that aren't sure how many Blackberry users they will go.

Blackberry Enterprise Server (BES)

Blackberry Enterprise Server is the fully-featured Blackberry mobile email service. It's designed for medium to large organizations with their own Lotus Domino or Microsoft Exchange servers for email and mobile data applications, that are going to start with at least 20 users and grow from there.

Blackberry Enterprise Server lets the user access his/her email, electronic calendar, tasks list and contacts list as well as any internal applications or software on their BlackBerry handheld.

The Blackberry Enterprise Server supports triple DES security (considered unbreakable) so confidential data is transmitted securely.

Blackberry Enterprise Solution Overview

The BlackBerry® Enterprise Solution is a flexible, IT-friendly solution that gives mobile users secure wireless access to their enterprise email and business-critical applications.

The complete wireless solution for the enterprise:-

The BlackBerry Enterprise Solution allows mobile users to access communications and information wirelessly, including:

- Email
- Corporate data
- Instant messaging
- Phone
- Internet
- MMS and SMS
- Organizer

Solutions for Blackberry Devices

They are 3 ways:-

1. Create a web site to be accessed using the Blackberry Browser.
2. Develop a server-based application that pushes content such as a web page and images, or data in general, to the blackberry device.
3. Write a software application that operates on the Blackberry device and, possibly, also on a remote server

What are the advantages of Blackberry technology?

1.Email: Blackberry provides email accessing facility with its wireless extension. Normal email activities can be performed without hassles. It remains continuously connected to the wireless network which enables the user to access email. The mail will appear on the device without retrieving it.

2.Phone: The Blackberry hand held has all the features of a mobile. In addition it has digital walkie-talkie, SIP based IP telephony and also provides headsets with comfort, clarity and convenience.

3.Wireless Internet: The hand held phone have special features which enables to browse the internet by clicking and scroll track wheel for navigating the pages and types the URLs by using QWERTY keyboards.

4.Tethered Modem: Some of the Blackberry hand held devices are available with features like speedy wireless services with fast email and browsing experiences. This device acts as a tethered modem without carrying a wireless PC card.

5.Organizer: The mobile is provided with functionality regarding day to day activities.

6.SMS: Blackberry devices support the facility of sending and receiving text messages.

7. Instant Messaging: This feature helps the user for contacting people once they are connected to the wireless network.

8. Corporate Data Access: Business goals can be achieved with access to the corporate data, by using wireless connectivity technology.

9. Paging: Some of the Blackberry models provide paging services to the Blackberry users who do not have an email account.

CONCLUSION

A blackberry is an end-to-end wireless email solution that allows access to your Outlook Inbox, Calendar, Contacts, and Tasks with full wireless synchronization. It is an example of convergent device.

It uses push technology for internet services. The Blackberry has been designed from the ground-up to be a secure platform.

This strict adherence to security has made the platform very popular with governments and corporations worldwide.