WebSphere software

IBM WebSphere Everyplace Connection Manager, Version 5.0

Highlights

- ***Offers secure access to e-business applications to mobile users over wireless and wired networks***
- ***Provides mobile access, messaging and Wireless Application Protocol (WAP) services***
- ***Includes a Java™ technology gatekeeper to set up and configure users across multiple platforms***
- ***Seamless roaming allows uninterrupted connectivity to critical applications***
- ***Helps reduce data transmission costs over wireless networks***
- ***Accommodates a wide selection of wireless and wired network connectivity choices***

WebSphere Everyplace Connection Manager

IBM WebSphere® Everyplace® Connection Manager, Version 5.0, allows enterprises to securely and efficiently extend existing applications to mobile workers over many different wireless networks. WebSphere Everyplace Connection Manager V5 also allows Service Providers to provide multiple solutions to their customers.

WebSphere Everyplace Connection Manager V5 is a distributed, scalable, multipurpose UNIX® communications platform designed to optimize bandwidth, reduce costs, ensure security, and roam seamlessly across a wide range of networks. It creates a mobile Virtual Private Network (VPN) that encrypts data over vulnerable Wireless Local Area Networks (LAN) and Wireless Wide Area Networks (WAN) connections. Additionally, WebSphere Everyplace Connection Manager V5 integrates an exhaustive list of standard Internet Protocols (IP) and non-IP wireless bearer networks, server hardware, device operating systems and mobile security protocols. WebSphere Everyplace Connection Manager V5 provides support for the WAP Version 1.2.1 standard.

WebSphere Everyplace Connection Manager V5 allows users with different application needs (such as lower transmission costs, more coverage or greater number of devices) to select the best wireless network for their specific situation.

WebSphere Everyplace Connection Manager V5 is also available without the WAP functions. This allows customers who do not need WAP to take advantage of the remote access and messaging functions for a lower cost.

Mobility Client

The Mobility Client software runs locally on your mobile device and provides a full-function interface to communicate with WebSphere Everyplace Connection Manager.

Once Mobility Client authenticates to Connection Manager, a VPN is established and the device securely joins the enterprise intranet. The WebSphere Everyplace Connection Manager supports standard IP routing — even over non-IP wireless bearer networks — to help ensure unbroken, end-to-end TCP sessions between mobile devices and application servers. Mobility Client also includes a toolkit and application program interfaces (APIs) to create network-aware applications.

Supports multiple mobile networks

Connection Manager supports a comprehensive spectrum of communication protocols for both IP and non-IP networks. Flexible connections are created by configuring multiple Mobile Network Connections (MNC) for any combination of public or private physical networks. Each MNC can be tuned for optimal performance, compensating for latency, link speed and other characteristics that vary across different communications technologies.

Network connections

Cellular Networks:
CDMA
TDMA
GSM CSD, SMS
PCS 1900
PDC (Japan)
PHS (Japan)
CDMA2000, 1XRTT, eVDO
GPRS (GSM)
UMTS
PDC-P (Japan)
iDEN
CDPD and CS-CDPD
AMPS & N-AMPS

SMS-C Connections:
OIS
SMPP
SMTP
SNPP
UCP
WCTP

W-LAN, W-PAN:
802.11b
802.11a
Bluetooth

LAN Connections:
Ethernet
Token Ring

Internet Connections:
Cable Modem
ADSL/DSL
ISDN
ISP

Dial Connections:
DIAL/TCP
ISDN
PPP
PSTN (POTS)

Public Non-IP Radio Networks:
DataTAC 4000 (US)
DataTAC/IP
DataTAC 5000 (Europe)
Modacom (Germany)
DataTAC 6000 (Asia)
DataTAC/IP
Mobitex (Worldwide)
Mobitex/IP (US)
Motient

Private Packet Radio Networks:
Dataradio
Motorola Private Radio (DataTAC)

Satellite Networks:
Norcom
Wireless Matrix

Mobile access services

An encrypted tunnel secures wireless connections between the Connection Manager and the Mobility Client. The Mobility Client, in conjunction with the Connection Manager, offers enhanced functionality, improved performance and a high level of security.

The Connection Manager supports applications using industry standard sockets programming interfaces provided by the operating system, so developers don't need to learn special programming interfaces or proprietary tools and protocols.

Gatekeeper: Distributed administration

Gatekeeper provides a Java technology-based administrator console to the WebSphere Everyplace Connection Manager and to wireless resources. Administration of Connection Manager is simplified with Gatekeeper and optional user administration portlets using the IBM WebSphere Portal Server or IBM WebSphere Everyplace Access. You also have the flexibility to define multiple Gatekeeper administrators, which can allow you to distribute administrative permissions and responsibilities among them and match the Information Technology (IT) needs of your organization. All administration and configuration data resides in a common Lightweight Directory Access Protocol (LDAP) directory.

Remote Gatekeeper administration communicates securely to the Connection Manager via Extensible Markup Language (XML) over Secure Sockets Layer (SSL) connections.

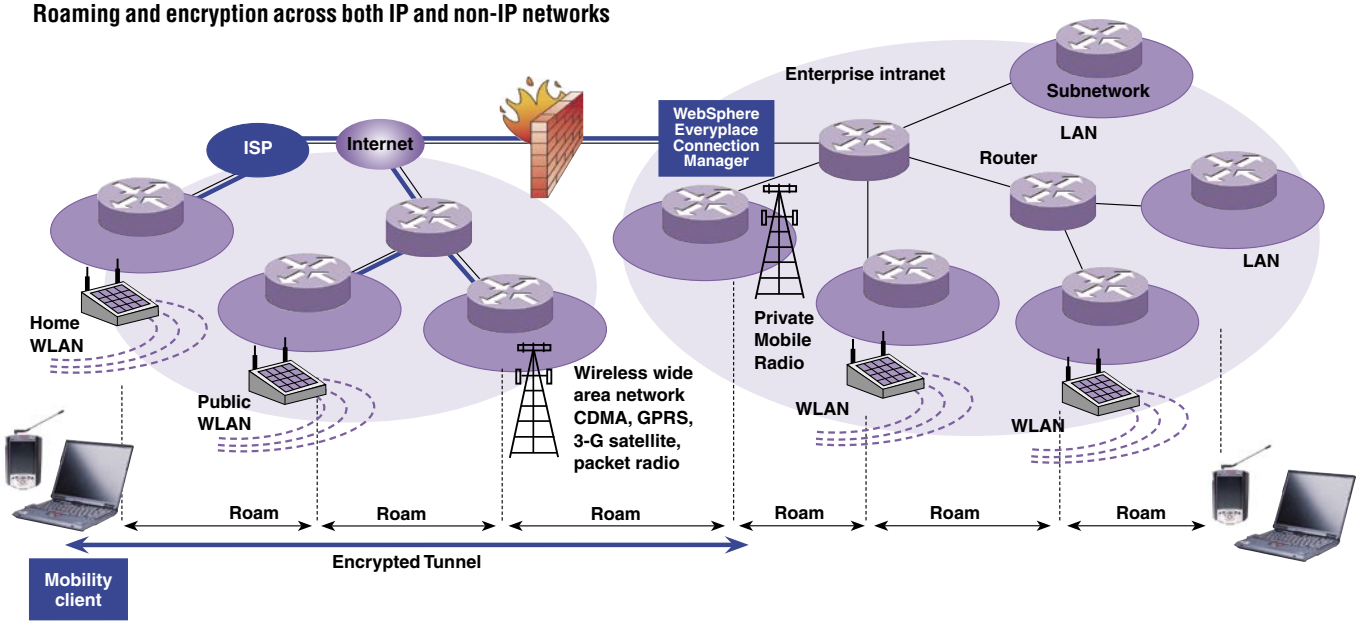
Cluster support

WebSphere Everyplace Connection Manager V5 provides a highly scalable architecture enabled via gateway clustering. Gateway clustering distributes load geographically across multiple sites and scales with the mobile needs of the customer. By supporting High Availability Cluster Multiprocessing (HACMP), WebSphere Everyplace Connection Manager V5 helps to obtain high reliability.

Seamless cross-network roaming

WebSphere Everyplace Connection Manager V5 allows mobile users to maintain session persistence when the mobile device changes network connections from an IP subnetwork or enterprise intranet to a wireless network outside the firewall or enters an area with intermittent or no connection. WebSphere Everyplace Connection Manager V5 supports a variety of communication protocols for cellular, packet radio, satellite, 802.11a, 802.11b, Ethernet, and Token-Ring networks. This dynamic roaming feature can enable access across physical networks without breaking the application's end-to-end Transmission Control Protocol (TCP) sessions and can provide mobile users with uninterrupted connectivity to critical applications.

Roaming and encryption across both IP and non-IP networks



In addition to providing virtually seamless roaming between wired and wireless networks, WebSphere Everyplace Connection Manager enables a secure, encrypted tunnel.

Security

WebSphere Everyplace Connection Manager has been awarded the Federal Information Processing Standard FIPS 140-2 level of certification, widely viewed as the most stringent security standard internationally. Developed by U.S. and Canadian governments, FIPS 140-2 defines the requirements for commercial cryptographic products that may be procured by U.S and Canadian Federal agencies. It is also becoming a sought-after indicator throughout federal, provincial, state, and local governments, as well as security-insistent enterprises to validate the degree of security "robustness" of enterprise networking products.

WebSphere Everyplace Connection Manager provides multiple levels of authentication and encryption to help assure the identity of the mobile user and prevent unauthorized access. In addition to the mobile VPN option, Connection Manager incorporates Secure Socket Layer connectivity, Wireless Transport Layer Security and Point-to-Point Protocol (PPP) remote access standard from PPP clients. A symmetric encryption key is used to encode or decode the data with varying key lengths, the strongest being the 256-bit key used in the Advanced Encryption Standard algorithm. To provide data privacy and protection, customers can choose from an extensive cryptographic library, which includes Data Encryption Standard (DES), Triple DES, RC5 or Advanced Encryption Standard (AES) algorithms.

Data optimization

In WebSphere Everyplace Connection Manager V5, the Connection Manager and the Mobility Client work in tandem to help reduce data transmission costs over wireless networks by utilizing advanced data compression, header reduction and minimization of Transmission Control Protocol retransmissions to reduce data loads, increase effective bandwidth and lower connection fees.

Messaging services

WebSphere Everyplace Connection Manager V5 messaging services support several types of messaging modes, including Short Message Service (SMS), e-mail using Simple Mail Transfer Protocol (SMTP), unconfirmed WAP push, message delivery over proprietary networks such as Mobitex or Motient, and Simple Network Paging Protocol

Feature	Advantage
Wireless network data optimization	• Improves data communication efficiency for VPN networking over wireless, reducing data volume and costly overhead
Authentication	• 2-party strong authentication verifies both server and client
Encryption	• Advanced Encryption Standard executes faster than 3DES
Cross-network roaming	• Mobile VPN and applications persist when switching networks
Thin client secure access options	• Supports phones and devices with no IBM client software via HTTPS and WTLS industry standards
SMS gateway and push services	• Same product configurable as full featured SMS gateway • Messaging SDK supporting :Java™, C, C++
Server integration	• Integrates with existing AAA via Radius support, directories via LDAP and ODBC databases
Reliability and scalability	• Server has 24x7 reliability with scalable, distributed design

Comparative overview

Mobility Client feature	IBM WebSphere Everyplace Connection Manager	Traditional IPSec VPN
End-to-end encryption	✔	✔
Seamless, cross-network roaming IP and non-IP networks	✔	
Secure IP routing through non-IP networks	✔	
Network address translation	✔	
Bi-directional, two-factor authentication	✔	✔
Header reduction, IP data compression and filtering to reduce packet overhead	✔	
TCP protocol optimization to minimize costly retransmissions due to network latency	✔	
Dynamic disconnect/reconnect	✔	
Performance tuning profiles customizable for differences in connection technologies	✔	
Support for Microsoft® CE.Net, Windows®, Pocket PC, Win CE, Palm OS and Linux	✔	✔

(SNPP). Additionally, the Wireless Communication Transfer Protocol (WCTP) has been added to deliver wireless messages, both one- and two-way, to appropriate receiving devices such as pagers, mobile phones or other wireless devices. WCTP has the ability of receiving end-to-end acknowledgments and replies from a two-way messaging device such as ReFLEX units.

The WebSphere Everyplace Connection Manager Messaging Services and Push Toolkit and API for WAP 1.2. services are available to create push applications by specifying the address type. Connection Manager hides the complex details of message encoding, specific protocols for each network and connections to the network from the developer. The Messaging Services are tightly integrated with IBM WebSphere Everyplace Access Intelligent Notification Services (INS), adding another rich layer of functionality. INS monitors information from a variety of sources, recognizes when an event occurs and notifies workers via cell phones, personal digital assistants (PDAs) or pagers.

WAP proxy

The Connection Manager, when configured as a WAP proxy, can provide connectivity for multi-vendor WAP 1.1 and WAP 1.2 client services. Connection Manager fully supports the WAP Wireless Session Protocol (WSP), which links the microbrowser with cell phones and PDAs. WebSphere Everyplace Connection Manager V5 functions as a WAP Push Proxy Gateway, allowing external applications to push various content down to WAP devices. Wireless Transport Layer Security (WTLS) secures the connection from the Connection Manager to the WAP client device. Secure Sockets Layer is used to establish a secure connection from the Connection Manager to backend Web servers.

WebSphere Everyplace Connection Manager V5 optimizes and compresses WAP data to reduce transmission costs and increase data efficiency. WebSphere Everyplace Connection Manager provides a dynamic disconnection and reconnection when not in use to help lower connection fees.

Connection Manager without WAP

For customers who do not require the WAP functions, WebSphere Everyplace Connection Manager V5 is available without WAP. This option provides all of the components and capabilities of WebSphere Everyplace Connection Manager except WAP, and at a reduced price.

Support for standard PPP clients

Another broad category of mobile client connectivity that is supported by WebSphere Everyplace Connection Manager V5 is comprised of devices that can establish a PPP connection to the Connection Manager as the Network Access Server. For this PPP client support, Mobility Client software is not required on the mobile device. With PPP connections, performance optimization is much less and security functionality is restricted to authentication (no encryption).

About IBM

Pervasive computing products from IBM can empower both enterprises and Service Providers to create and deploy applications for the new generation of mobile computing. With WebSphere Everyplace Connection Manager, we have created a platform that can enable you to easily extend e-business to mobile users over wired and wireless networks.

For more information

To learn more about IBM pervasive computing solutions, visit **ibm.com**/pvc or call your local IBM representative.

WebSphere Everyplace Connection Manager hardware requirements

Hardware requirements
The following are minimum configurations for WebSphere Everyplace Connection Manager V5.0:
IBM AIX® operating environment: • IBM RS/6000 7043-150 tower with 250MHz 32-bit 604e processor • 128MB memory
Sun Solaris operating environment: • Ultra 10 • 1GB RAM • CD-ROM • Minimum 9GB HDD
Linux operating environment: • An x86 platform server with a minimum of a 400MHz processor, 256MB RAM, and 60MB disk space available.
The following is required to use the Gatekeeper component: • On Intel platforms, 400MHz or greater Pentium processor, and on RISC platforms, 250MHz or greater processor – Minimum of 128MB RAM – Minimum of 30MB disk space
A Mobility Client requires: • Connection Manager configured for mobile access services • A mobile computer with sufficient resources (processor speed, hard drive, and memory) to run the operating system, manage modem communications, and run your other applications.
A modem or interface adapter for your network provider: • Not all WebSphere Everyplace Connection Manager operating system platforms include roaming support today
Mobility Client disk space requirements to install the full Mobility Client image: • On Windows 98, Windows NT, Windows XP, Windows ME, or Windows 2000: 1MB to 3MB • On Windows CE: 0.5MB to 2MB. The full 2MB is required for the installation process from a desktop system, but the final image on the Windows CE device is smaller. • On Palm OS: 5MB • On Linux desktop client: 12MB • Sharp Zaurus 5600 Handlheld: 1.9MB

Software requirements

WebSphere Everyplace Connection Manager V5.0 should be installed on a new or overwrite AIX installation. The following system software is required to use WebSphere Everyplace Connection Manager:

- IBM AIX V5.1 and V5.2 including:
  - AIXLink 1.1.5.0, or later (required only if using an X.25 adapter)
  - AIXlink/X.25 runtime environment
  - AIXlink/X.25 server support
  - AIXlink/X.25 NPI (network programming interface)
  - ODBC-compliant relational database such as IBM DB2® 7.2, or Oracle 8.1.5 or 8.1.6 (which requires Merant DataDirect Connect ODBC V3.6.0), or Oracle 8.1.7 (which requires Merant DataDirect Connect ODBC V4.20)
  - LDAP database, both server and client (IBM SecureWay™ Directory Server V3.2, or later), Netscape 4.1.x
  - HTTP Proxy Server (if using WAP proxy or HTTP access services)

WebSphere Everyplace Connection Manager V5 software requirements for Sun Solaris:

- Solaris V7, Solaris V8 or Trusted Solaris 8
- For X.25 support the following software is required: X.25 StreamSuite from Gcom, Inc. (www.gcom.com)
- ODBC-compliant relational database such as IBM DB2 7.2 or Oracle 8.1.5 or 8.1.6 (which requires Merant DataDirect Connect ODBC V3.6.0), or Oracle 8.1.7 (which requires Merant DataDirect Connect ODBC V4.20)
- LDAP database, both server and client (IBM SecureWay Directory Server V3.2 or higher), Netscape 4.1.X
- HTTP Proxy Server (if using WAP proxy or HTTP access services)

WebSphere Everyplace Connection Manager V5 software requirements for Linux:

- Red Hat 7.3, Red Hat 8.0, SuSE 7.3, SuSE 8.0, SuSE 8.1, UnitedLinux 1.0
- For X.25 support the following software is required: X.25 StreamSuite from Gcom, Inc. (www.gcom.com)
- ODBC-compliant relational database such as IBM DB2 7.2 or Oracle 8.1.5 or 8.1.6 (which requires Merant DataDirect Connect ODBC V3.6.0), or Oracle 8.1.7 (which requires Merant DataDirect Connect ODBC V4.20)
- LDAP database, both server and client (IBM SecureWay Directory Server V3.2 or higher), Netscape 4.1.X
- HTTP Proxy Server (if using WAP proxy or HTTP access services)

WebSphere Everyplace Connection Manager V5.0 Gatekeeper software requirements:

You can install the Gatekeeper component on any of the following operating systems with TCP/IP protocol installed:

- IBM AIX Version 5.1 or later
- Microsoft Windows 98
- Microsoft Windows NT
- Microsoft Windows 2000
- Microsoft Windows Me
- Microsoft Windows XP
- Sun Solaris 7
- Sun Solaris 8
- Trusted Solaris 8
- Red Hat Linux 7.2
- Turbolinux Workstation 7.0
- SuSE Linux 7.2

WebSphere Everyplace Connection Manager V5.0 Mobility Client software requirements:

You can install the Mobility Client on any of these operating systems with TCP/IP protocol installed:

- Palm OS 3.5.x, 4.x
- Microsoft Windows XP, Windows 98, Windows NT, Windows 2000, Windows ME
- Microsoft Windows CE Version 3.0 on a Handheld PC 2000 device and H/PC 2000 platform or a Pocket PC 2002 device on the Pocket PC platform
- Sharp Zaurus SL5600 Personal Mobile Tool using embedded Linux
- Linux desktop using one of the following distributions

Distribution	Kernel level	glibc level
Red Hat 7.3	2.4.18	2.2.5
Red Hat 8.0	2.4.18	Ships with glibc 2.2.93
SuSE 7.3	2.4.10-4GB or later versions available from SuSE FTP site	Patched glibc 2.2.4 available from yast2 online update
SuSE 8.0	2.4.18	2.2.5
SuSE 8.1	2.4.19	2.2.5
UnitedLinux 1.0	–	–

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