



Product Brief

Nortel Business Communications Manager Release 5.0

The all-in-one product portfolio that delivers the industry's best-in-class unified communications features and capabilities to SMBs

Business Communications Manager (BCM) is the award-winning Linux-based IP/TDM PBX convergence system that delivers productivity-driving unified communications (UC) capabilities, proven and reliable voice processing, and an extensive range of feature-rich business telephony applications.

Already the number one choice of small and medium businesses (SMBs) in more than 120 countries, BCM is ideal for companies looking for a future-proof telecommunications solution that combines the telephony features enjoyed by enterprises with the operational and business efficiencies offered by unified communications to deliver competitive advantage.

It's simple — choose from two options to meet varying business needs

Whether you're a small branch office of five users, a large site with 300 users or a number somewhere in between, BCM delivers a complete end-to-end communications solution to match your unique business needs. BCM now offers one common feature-rich software stream on two purpose-built hardware platforms: the BCM50 and the BCM450. Designed with ease of use in mind, both products include a common, user-friendly, browser-based management platform.

Convergence and unified communications

BCM delivers converged voice and data communications, simultaneously supports any mix of IP and digital clients, and provides best-in-class industry capabilities, including advanced unified communications such as InTouch for federated presence, FindMe/FollowMe, Message Forwarding and more.

Client support and advanced applications

BCM supports a wide variety of clients and phones and comes fully loaded with an extensive suite of applications including telephony, mobility, unified communications, productivity applications, open interfaces and toolkits — all of which can be activated easily through a simple KeyCode.

End-to-end IP solution with integrated SIP trunking

Through its support for Session Initiation Protocol (SIP) trunking, BCM offers comprehensive interoperability with converged IP access services from SIP carriers and Internet Telephony service providers.

Accelerated customization through a developer ecosystem

The BCM Developer Ecosystem enables businesses to build specialized applications from a broad "collection" of third-party development companies. Through an extensive ecosystem of more than 50 companies, companies can develop niche products and services to differentiate themselves from the competition.

Layered security to keep your business safe

Extensive, multi-layered security enables BCM to withstand network attacks from the Internet or from within the organization, such as computer worms, viruses, online fraud and other cyber attacks.

Comprehensive support — when and where you need it

A full suite of implementation, support and managed services is available to you either directly from Nortel or from one of our many qualified partners.



Business Communications Manager Release 5.0 technical specifications

Product metrics		BCM50	BCM450
Operating system	Existing system OS	Linux OS	Linux OS
CPU	Existing system CPU	PowerQuickII 8270	Freescale MPC8567E (1.3GHz core CPU and 3 onboard T1 600MHz DSP)
Memory	Existing system memory	256 Mbytes of SDRAM	512MB DDR2 SDRAM
Hard drive specifications	Existing system hard drive specification	40G Serial ATA HD	80GB SATA HD
Media Bay Module (MBM)	Total number of MBMs supported	No MBMs are supported on the main chassis; total of 2 w/2 expansion units	Up to 4 on main chassis, 6 on expansion cabinet for a total of 10
Expansion cabinet	Total number of expansion cabinets supported	Maximum of 2 BCM50 expansions; up to 2 MBMs, if used with two BCM50 expansions	Maximum of 1 BCM expansion unit; up to 6 additional MBMs
Maximum number of stations	Total handsets supported by PBXs in a distributed or networked configuration	50	100 without CEC, 300 with CEC, no restrictions on the mix of IP vs. digital
Maximum number of IP stations	Total handsets that connect to the PBX using IP lines supported by a single controller	32	300
Maximum number of digital stations	Total handsets that connect to the PBX using digital lines supported by a single controller	44	300
Maximum number of analog stations	Total handsets that connect to the PBX using analog lines supported by a single controller	4 on main unit, plus up to 16 with expansions	48 + 48
Maximum number of soft phones	Total IP soft phones that connect to the PBX using IP lines supported by a single controller	32	300
Number of controllers that can be internetworked	Total call control servers that can be networked together to scale the packet PBX system	Configuration-dependent	Configuration-dependent
Number of IP trunks	Total IP telephone exchange lines that terminate on each system	12	130
Number of digital trunks	Total digital telephone exchange lines that terminate on each system	2 T1/N.A. PRI/ETSI PRI; 2 BRI lines on main unit (BCM50b/be) and up to 8 BRI lines with expansions	130 Trunk Channels (T1/N.A. PRI/ETSI PRI)
130 Trunk Channels (T1/N.A. PRI/ETSI PRI) VPN tunnels		Up to 10	No
Integrated DSL		No	No
Number of analog trunks	Total analog telephone exchange lines that terminate on each system	0 or 4 (main unit) + 16 (two expansion with GATM8) = 16 or 20	80
Maximum number of simultaneous calls	Total number of simultaneous calls each controller can support	Variable, dependent upon requirements for system and DSP throughput, IP trunks, and MeetMe	215
Switch type	Type of switch (i.e., digital or IP) used in PBX center stage	IP/Converged/Hybrid	IP/Converged/Hybrid
Switch matrix type	Type of switch matrix (i.e., IP, TDM and ATM) used in PBX center stage	TDM, IP	TDM, IP
Call processor operating	Type of operating system (i.e., Windows, Unix, VxWorks, proprietary) used by call control server	Linux	Linux

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Business Communications Manager Release 5.0 technical specifications — continued

Product metrics		BCM50	BCM450
Centralized or distributed call processor	Indicates whether the system relies on a single call processor or supports multiple processors distributed throughout the network	Single centralized	Single centralized
Redundant call processor	Indicates whether the platform can support a duplicate call processor for improved reliability	No	No
Signalling systems	Type(s) of signalling protocol used to set up and maintain calls	SIP, H.323, Q.SIG, Q.931, MCDN, DPNSS	SIP, H.323, Q.SIG, Q.931, MCDN, DPNSS
Call control and messaging APIs	Type of interface the PBX uses to exchange data with external hosts	Optional (TAPI, LAN CTE), TCP/IP	Optional (TAPI, LAN CTE), TCP/IP
Data switch interfaces	Type of circuit, packet or cell-based interfaced used to interconnect switches (i.e., IP, frame, ATM, etc.)	IP and Ethernet	IP and Ethernet
VoIP protocols supported	Type of voice-over-IP protocols (i.e., H.323, SIP, MGCP, H.248 and proprietary) supported by the PBX	SIP, H.323 v4	SIP, H.323 v4
QOS protocols	Type of protocols (i.e., 802.1p/q, RTP, proprietary, etc.) used to maintain voice quality across IP line and trunks	DiffServ	DiffServ
Voicemail platform (standard or optional)	Integration of software used to provide voicemail services to end users	Optional (KeyCode-enabled)	Optional (KeyCode-enabled)
Message forwarding	This feature routes incoming calls to a user's mobile phone, home phone or alternate extension when away from the office	Yes (supported with UM)	Yes (supported with UM)
Unified messaging	Integration of e-mail, voicemail and fax using a single email client such as Microsoft Outlook or Lotus Notes	Optional (KeyCode-enabled)	Optional (KeyCode-enabled)
Email protocol support	Type of messaging protocols supported by the system, such as SMTP, POP3 and IMAP4	Unified messaging integration with either SMTP or IMAP4 clients	Unified messaging integration with either SMTP or IMAP4 clients
Contact database support	Contact databases, such as those provided in email applications, appear as screen pops when the PBX recognizes the incoming phone number and identifies the contact	Optional	Optional
Automatic call distribution	Automated attendants answer incoming calls and transfer by name or extension number, or into voicemail. Features include voice prompts and programmable menus. Call distribution sends incoming calls to wait queues when call center agents are engaged	Optional (KeyCode-enabled)	Optional (KeyCode-enabled)
Number of agents	Total number of call center agents supported by the system	100 configured and 50 active	250 configured, 80 active
Number of simultaneous conference calls	Maximum number of conference calls the PBX system can support simultaneously	9 calls	60 calls
Maximum participants per session	Maximum number of participants the PBX system can support in any single conference call	18 MeetMe, 18 Ad-hoc	60 MeetMe, ~60 Ad-hoc
Management server operating system	Operating system of administration terminal	Windows XP/Vista	Windows XP/Vista
Web-based management console	PBX call control management available through Web browser interface	Yes	Yes
Built-in/custom reporting	Built-in custom reporting allows the user to select, track and display types and sub-types of calls (e.g., calls made between 9:00 a.m. and 11:15 a.m. that lasted at least one minute, but not longer than two minutes, and were initiated in area code 206)	Reporting for intelligent contact center	Reporting for intelligent contact center

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Business Communications Manager Release 5.0 technical specifications — continued

Product metrics			
		BCM50	BCM450
Real-time status monitor	A fault-tolerance feature that allows the PBX server to monitor its status continually for power outages and other interruptions in service	Yes	Yes
Time-of-day policy management	Time-of-day policy management provides for customized calling times in order to take advantage of the lowest call rates and blocking of unauthorized, after-hours calls	Yes	Yes
Hot-pluggable hardware	Ability of hardware to be plugged into the system with full and immediate operability	No	No
RAID	Redundant Array of Inexpensive Discs, a disc-based form of data backup	No	Yes, optional
Automated backup/client log-on	Automated backup copies the configuration and message files of the PBX to another machine on the LAN at regular intervals. Thus, if the main server goes down or power is cut, the configuration data are not irretrievably lost. Automated client log-on auto manager	Supported via BCM Network Configuration Manager; automated log-on not supported	Supported via BCM Network Configuration Manager; automated log-on not supported
Call detail recording	Tracks call usage and types of calls made (e.g., long distance calls). Also allows/disallows types of calls based on a variety of parameters set by the customer (e.g., time of day and user's profile)	Data captured by BCM can be exported to integrated or various third-party CDR applications	Data captured by BCM can be exported to integrated or various third-party CDR applications
Accounting/billing platform	These features include the billing and reporting for voice calls through the PBX system. Typical of these features is the tracking of traffic volume and costs, types of calls, extensions from which calls were made, etc.	Yes, integrated or third-party	Yes, integrated or third-party

Applications and key features	
Key features	For BCM50 and BCM450
Unified communications	Offers three major new unified communications features
InTouch	A simple, streamlined and integrated method of communicating with business and personal contacts. The application offers click-to-call, presence information and Instant Messaging (IM) – all within a simple expanded Microsoft Outlook window.
InTouch minimum requirements	<ul style="list-style-type: none"> Operating system: Windows XP Professional SP3, Windows Vista SP2 Business, Ultimate or Enterprise (32 OR 64 bit), .Net Framework 3.5 Service Pack 1 Microsoft Outlook: 2002 (XP), 2003, 2007 Skype (optional): 3.8.0.188 or later MSN (optional): 14.0 or later BCM: BCM50 Release 5.0, BCM450 Release 5.0 BCM Release 5.0 LAN CTE client Microsoft Exchange: 2000, 2003 User PC minimum hardware requirements: 1 GHz 32-bit (x86) or 64-bit (x64) processor, 1 GB of system memory, 20 MB of available space for installation and 10 MB for data A network connection: 10 Mbps minimum
FindMe/FollowMe	Significantly improves the ability of an end user to be reached through the personal programming of up to five additional external termination numbers. The BCM will ring the programmed numbers when a call terminates on the BCM telephone extension of that user.
Message Forwarding	Sends an email message when new messages arrive in a subscriber's voice mailbox. The feature attaches the voice message or fax as a linear WAV file to the forwarded email message so the user can play the voice message or display the fax message on the destination device (e.g., BlackBerry). This facilitates the simplification and consolidation of messaging services so that the users can ensure that important messages are received, even when they are on the move.

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Business Communications Manager Release 5.0 technical specifications — continued

Applications and key features	
Key features	For BCM50 and BCM450
Platform additions	Includes new software and hardware platform capabilities
Interactive Voice Response	For BCM450 only, introduced on Release 5.0, consistent with the IVR solution on BCM200/400 RIs 4.0.
Professional Call Recording	Recording provides a new simple and integrated call recording solution for the small and medium businesses (SMBs).
Complete redundancy solution	Includes hard disk redundancy (RAID), the availability of BCM450 redundant system packaged and configured at the factory.
Investment protection	In addition to regular software upgrades for BCM50 RIs 3.0 and BCM450 RIs 1.0, the BCM provides many important upgrade/migration features to empower the SMB.
Hardware and software upgrade package for BCM200/400 RIs 4.0 systems	By upgrading a BCM200/400 system, one gets access to the large number of features introduced since BCM RIs 4.0 and also achieves a very significant capacity gain (up to 300 users). A key capacity benefit is the addition of the expansion port on the upgraded BCM200 systems (extending maximum number of connected MBMs from 2 to 8 on such systems).
Data Migration Manager (DMM)	This tool provides configuration data conversion from a BCM200/400/1000 RIs 4.0 system to a BCM RIs 5.0 system.
Portfolio simplification	BCM Release 5.0 is the first common software release between the BCM50 and BCM450 platforms. With this single software release spanning the two BCM platforms, customers now have a uniform solution that spans a very broad deployment size range (from 5 users to 300 users) and therefore simplifies their deployments.
System management	Common amongst BCM50 Release 5.0 and BCM450 Release 5.0
Network management	Common amongst BCM50 Release 5.0 and BCM450 Release 5.0
Documentation	Common among BCM50 and BCM450, except for platform specific aspects
Training	Common among BCM50 Release 5.0 and BCM450 Release 5.0
Certification	Common among BCM50 Release 5.0 and BCM450 Release 5.0
Accreditation	Common among BCM50 Release 5.0 and BCM450 Release 5.0
VoIP and telephony enhancements	BCM RIs 5.0 provides scalability enhancements on the BCM450 platform, making it even easier to deploy BCM450 in large deployments of up to 300 users.
Scalability enhancements	The maximum of numbers of Target Lines, Class of Service Password, System Speed Dial, EKEMs and Call Logs are all significantly increased for BCM450; the maximum number of Call Logs is also increased on the BCM50 platform.
SIP trunk functionality	Ability to create multiple SIP trunk user accounts each associated with a remote SIP domain — in this way addressing the interoperability needs of many IP Telephony service providers.
WLAN 6120 and 6140 IP Phones	BCM Release 5.0 introduces support for the Release 3.0 version of WLAN 6120 and 6140 IP Phones to further enhance the BCM VoWLAN solution with lower infrastructure cost and faster handoff functionality.
Operational enhancements	Includes several significant operational enhancements to make it easier and more cost-effective to manage BCM.
Crediting and transfer capability for software authorization codes	End customers who own multiple BCMs will be able to manage their investment in software authorization codes through a pool accessible to the BCM systems under their ownership (conditional to the fee-based registration of these BCM systems to the pool).
KeyCode migration for BCM50 to BCM450 replacement	Customers will be able to migrate relevant software keys when replacing a BCM50 system with a BCM450 system (typically to address growth requirements).
Email notification of alarm	BCM can send an email (to a pre-configured email address) to notify of an alarm — therefore speeding time to notification and recovery.
Auto-administration manager	Automatic installation of software updates and KeyCodes.
Applications launcher	A new Web access method for end-user download of BCM PC applications while allowing customers and/or partners to point to a centralized source server where the latest software versions and updates of these applications are present.
VLAN support	Provides increased flexibility for integrating BCM in existing data networks while also enabling definition of multiple IP address spaces for the BCM (ex: one specific IP address space for remote OAM access).

Business Communications Manager Release 5.0 technical specifications — continued

System status			
	Upgraded BCM200/400 systems operating at Release 5.0 software level	BCM50	BCM450
SIP trunk user account and registration enhancement	Feature available with the SIP trunk authorization code enablement (no additional codes are required)	Feature available with the SIP trunk authorization code enablement (no additional codes are required)	Feature available with the SIP trunk authorization code enablement (no additional codes are required)
Register with the remote domain on behalf of the SIP trunk user	Yes	Yes	Yes
Create multiple SIP trunk user accounts	Yes	Yes	Yes

Environmental			
	BCM50	BCM450	
Operating environment	<ul style="list-style-type: none"> Operating temperature: -5°C to 50°C Operating humidity: 90-95% RH at 40°C Storage temperature: -55°C to 70°C Storage humidity: 90-95% RH at 40°C 	<ul style="list-style-type: none"> Operating temperature: 32° to 104°F; 0° to 40°C Operating humidity: 10% to 90% relative humidity, non-condensing Storage temperature: -67° to 158°F; -55° to 70°C Storage humidity: Up to 95% relative humidity 	
BCM monitoring	BCM monitors overall system status, telephony functions, utilization of resources, operation of telephony applications and status of PRI, BRI and IP trunks	BCM monitors overall system status, telephony functions, utilization of resources, operation of telephony applications and status of PRI, BRI and IP trunks	
Power supply	AC input: 100-240V -2 A, 50-60 Hz DC output: 19 6.32 A	Standard power supply, auto-sensing, 350 Watts, 100/240 VAC, 10 A, 60/50 Hz	Redundant power supply, auto-sensing, 350 Watts, 90/240 VAC, 6.0/3.0 A, 47/63 Hz
Mechanical requirements	<ul style="list-style-type: none"> Packaged — Transportation vibration as per Telcordia GR-63, Transportation bounce as per IEC 68-2-55 (Method A), Drop and vibration as per ISTA Procedure 1A Unpackaged (Operational) — Office vibration as per Telcordia GR-63, Mechanical shock as per IEC 68-2 	NEBS (GR-63-CORE) compliant for Transportation and Operational. Vibration per IEC 68-2-27, Package Drop Shock resistance per IEC 68-2-32, Transportation Bounce to IEC 68-2-55 and Unpackaged Drop to ISTA Project 2A	
Dimensions and weight	Depth: 12.75 in Width: 8.625 in Height: 2.625 in Weight: 2 lb. 5.2 oz	Depth: 18.3 in; 46.5 cm Width: 17.5 in; 44.5 cm Height: 7.1 in; 18.0 cm Weight standard power supply: 14.18 kg; 31.25 lbs Weight redundant power supply: 18.24 kg; 40.20 lbs	

Phone support		
	BCM50	BCM450
Norstar Telsets	M7000, M7100, M7310, M7316, M7324	M7000, M7100, M7310, M7316, M7324
Norian Telset (Europe)	M7100N, M7310N, M7316N, M7324N	M7100N, M7310N, M7316N, M7324N
Business series Telsets	T7000,T7100,T7310, T7316, T7316e, MWI support for business series sets, Maximum CAPS support (on M7324) = 12, Audio Conferencing Unit (NACU), T24 Key Indicator Module, Door Opening Controller	T7000,T7100,T7310, T7316, T7316e, MWI support for business series sets, Maximum CAPS support (on M7324) = 12, Audio Conferencing Unit (NACU), T24 Key Indicator Module, Door Opening Controller
IP Phones 1200 Series	IP Phone 1210, IP Phone 1220, IP Phone 1230, Key Expansion Module 12-key LCD, Key Expansion Module 18-key LED	IP Phone 1210, IP Phone 1220, IP Phone 1230, Key Expansion Module 12-key LCD, Key Expansion Module 18-key LED
IP Phones 1100 series	1120E, 1140E, 1110, 1100 Series KEM module	1120E, 1140E, 1110, 1100 Series KEM module
IP Phones 2000 series phase 2	i2001, i2002, i2004, i2007, IP Key Expansion Module (KEM)	i2001, i2002, i2004, i2007, IP Key Expansion Module (KEM)

Business Communications Manager Release 5.0 technical specifications — continued

Phone support		
	BCM50	BCM450
IP Phones 2000 series phases 0 and 1	i2002, i2004, IP Key Expansion Module (KEM)	i2002, i2004, IP Key Expansion Module (KEM)
IP Soft Clients	i2050 Soft Clients, Mobile Voice Client 2050, Support for mini USB headset	i2050 Soft Clients, Mobile Voice Client 2050, Support for mini USB headset
Conference unit	IP Conference Phone 2033	IP Conference Phone 2033
WLAN phones	6120, 6140, 2210, 2211, 2212	6120, 6140, 2210, 2211, 2212
Digital mobility phones	T7406E 2.4GHz DSS, T7406 900MHz DSS, 7420/7430/7440, 7439/7449, 7434/7444, 4135/4145/4145Ex, 4136/4146/4146Ex	T7406E 2.4GHz DSS, T7406 900MHz DSS, 7420/7430/7440, 7439/7449, 7434/7444, 4135/4145/4145Ex, 4136/4146/4146Ex

Mean Time Between Failure (MTBF)			
Description	MTBF hours	MTBF years	Failure rate (% per year)
BCM50			
BCM50	662,388	75.6	1.32%
BCM50 Expansion	2,098,284	239.4	0.42%
BCM450			
Base System: Motherboard, CIF, HDD, PS, Cooling fan with 0 Media bay Module	624,770	71	1.4%

Configuration	Failure rate (FITs)	System MTBF (year)	Maintenance actions (#/year/system)
Base Function Tray NTC01050 (Motherboard [BMB] and HDD)	1157	99	0.01
BCM450 Base System: Motherboard, CIF, HDD, PS, Cooling Fan with 4 Media Bay Modules	2883	40	0.025
BCM450 Base System: Motherboard, CIF, HDD, PS, Cooling Fan with 2 Media Bay Modules	2242	51	0.020
BCM450 Base System: Motherboard, CIF, HDD, PS, Cooling Fan with 0 Media Bay Modules	1601	71	0.014

System redundancy and survivability options			
		BCM50	BCM450
Redundant systems	Noted survivability systems for customers who require very high availability of service due to the nature of their business	NA	Available redundant hard drives (with RAID level 1 functionality), redundant power supply, redundant fans AND power cord redundancy
RAID		NA	The RAID feature is available on BCM450, BCM200 and BCM400 systems running Release 5.0 software; it is not available for BCM50 systems
Orderable from factory packaged redundant configuration	Two fully redundant power supply units; two fully redundant hard disks running in RAID Level 1 mode; two fans running in parallel	NA	Yes
Redundant power supply	Hardware upgrade option	NA	Yes

Business Communications Manager Release 5.0 technical specifications — continued

Investment protection			
		BCM50	BCM450
Upgrading software	The BCM Release 5.0 investment protection for BCM50 and BCM450 follows the approach used for previous BCM50 software upgrades but also with a simplified one-step implementation	As previously, the upgrade maintains customer configuration, customer software KeyCodes and provides a robust path to running the latest BCM Release 5.0 software	As previously, the upgrade maintains customer configuration, customer software KeyCodes and ensures a smooth path to run the latest BCM Release 5.0 software
Upgrading hardware		When migrating Norstar systems or upgrading older BCM systems, a potential investment savings of up to 70% can be realized through the reuse of phones and associated hardware components, where applicable	When migrating Norstar systems or upgrading older BCM systems, a potential investment savings of up to 70% can be realized through the reuse of phones and associated hardware components, where applicable

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