# XCENTRIC

OFFICE IN A BOX
All-rounder for modern office communication

The communication requirements of small companies, offices or branches are usually provided by various systems that must be configured and maintained independently of each other: telephone system, router/modem, fax machine and hub/switch.

XCENTRIC combines these requirements in one scalable unit and also offers CTI tools and server functionalities to simplify everyday work.

BinTec's established security concept SAFERNET™ and convenient configuration facilities are fully integrated in XCENTRIC.
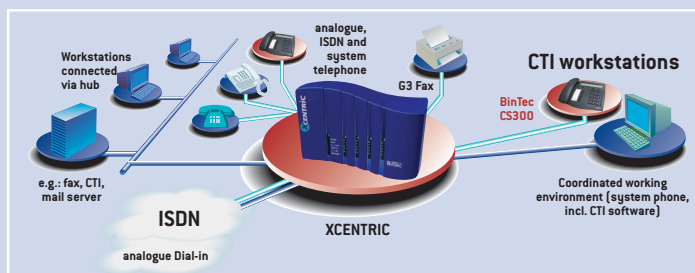
> Typical application scenarios

- Internet access for all employees over one or more ISDN B-channels or broadband ADSL
- Corporate network connection, branch connection over leased lines and/or dialup connections (LAN-LAN connection)
- Dialing in to the corporate network by field service staff and teleworkers over ISDN, modem or mobile phone (V.110)
- Fax transmission and reception (PC fax) at any workplace
- Setting up a local network (LAN) through the integrated switched HUB
- Computer Telephony Integration (CTI) over the integrated telephone system with separate voice mailbox for each subscriber

> Highlights

- Integrated firewall and Network Address Translation (NAT)
- Full administration on site or from a remote terminal
- Integrated, fully CTI-capable ISDN PABX for Basic Rate Interface and Primary Rate Interface
- Application server for Unified Messaging
- Digital system telephones with extra features
- Door intercom supplied as standard
- Simple installation with RJ-45 sockets or screw terminal connectors

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Technical data

> Basic system

As XCENTRIC is an integrated system, all subsystems (PABX, router, application server) share access to the external ISDN connections.

Extendable modular system
- Up to 20 BRI (all internal or external)
- Up to 16 analog extensions
- Optional Primary Rate Interface (PRI, external only)
- Door intercom

Type of connection
- Point-to-multipoint/point-to-point connection externally (Euro ISDN), ISDN leased lines for data transmission
- ISDN autoconfiguration, automatic detection of D-channel protocol
- Mixed operation of point-to-multipoint/point-to-point connection and ISDN leased lines
- Point-to-multipoint connection internally (Euro ISDN)

Software interfaces and applications
- Remote CAPI, TAPI drivers for Unified Messaging (PC fax, voice mail, data transmission,...) and CTI
- Windows configuration tool, Wizard, SNMP Manager, TFTP, BOOTP and SYSLOG servers
- LCR Manager (Least Cost Routing)
- Accounting tool (BinTec PABX Accounting)

Extensions/MSNs
- Direct dialing in (DDI)
- MSN (Multiple Subscriber Number)
- Freely configurable direct dialing in and virtual extensions

Calling line identification
- Calling line identification A->B, B->A (CLIP/COLP)
- Suppression of calling line identification (CLIR, COLR)
- Forwarding of subaddress information to digital terminals

Date/time
- Date/time derived from ISDN network, time server or manually (battery buffered)

Fax/modem hardware support
- HW modem chip for G3 fax and remote connection for a B-channel

> Telephone system

The exchange is a complete telephone system with familiar features such as inquiry call, call pick-up, brokering, call waiting, three-party conference, etc.

Call hold, brokering and conference call
- Call hold and brokering for any two internal/external subscribers
- Three-party conference
- Automatic call waiting, can be deactivated for the next call
- Exchange access levels, automatic external line access

Call transfer, connecting
- Transfer of inquiry calls
- Explicit call transfer internal/external (if provided by external connection)

Call forwarding
- Call forwarding within the system configurable for each extension (immediate, on busy, on no reply)
- Call forwarding (immediate, on busy, on no reply) configurable for each terminal at external connection by partial rerouting (point-to-point connection) or call deflection (point-to-multipoint connection) if provided by external connection, otherwise over second B-channel
- Different destinations possible at same time for 'on busy' and 'on no reply'
- Door intercom call forwarding to external subscriber (chemist's circuit)

Group features
- Unrestricted creation of groups
- Broadcast call (simultaneous)
- Call pickup within a group

Exchange access
- Global exchange access
- Selective exchange access via exchange prefix
- Automatic exchange access configurable for each extension
- Exchange access rights (international, national, local network, partial access, barred access) configurable for each extension
- Name assignment for subscribers

Music-on-hold
- Internal melody, switchable on/off
- External audio source input via 3.5 mm jack

Subsystem capability
- Grouping of internal BRI interfaces
- Standard extension numbers

Analog terminals
- Calling line identification (CLIP)
- Simultaneous use of all analog a/b ports
- DTMF operation with flash function
- All analog connections suitable for line or DECT telephone, fax group 2/3, answering machine, modem and combined unit
- 'Busy on busy' for data terminals (fax, modem)
- Different ringing rhythms switchable for external/internal calls
- 16 kHz metering pulse

> Multiprotocol router

IP routing
- DHCP Server, DHCP Proxy; BOOTP/DHCP Forwarding
- Proxy ARP, DNS Server, DNS Proxy, DNS Access Control
- RIP v1, v2
- IP filtering, depending on source/destination address/port, protocol, interface address
- Detailed IP accounting (source, dest. and port, interfaces used, counters for packets and bytes sent)
- Extended IP routing depending on source/destination port, source IP address, TOS, ... ("Policy Based Routing")
- PPP – dynamic IP address assignment (server and client mode)

Technical data

IPX routing
- RIP/SAP
- NLSP (for IPX)
- Packet type 20 forwarding (configurable for NetBIOS over IPX)
- IPX spoofing
- SPX spoofing
- RIP/SAP update (triggered/piggybacked/static routes and services), link-dependent filtering (packet transmission only if WAN link already exists)
- Access lists

Bridging
- Transparent Bridging Spanning Tree

> ISDN/WAN protocols and standards

ISDN D-channel
- External: Euro ISDN (point-to-point and/or point-to-multipoint connection)
- Internal: Euro ISDN (point-to-multipoint connection)
- D-channel with CAPI (X.31 with CAPI)
- ISDN standards: I.430, Q.921, Q.931, ETS 300102

ISDN leased lines
- ISDN leased lines for data transmission with back-up/top-up
- B1 channel (64S)
- B1+B2 channel (64S2)
- D+B1+B2 channel (TS02)
- B1+B2 different endpoints (digital 64S with dual connection)

ISDN B-channel protocols and standards
- Data compression: STAC LZS (compression rate up to 4:1), VJHC
- 64-kbps data
- 14400-bps modem (hardware modem on one B-channel)
- V.110 bit rate adaptation between 1200 and 38400 bps for connections to GSM subscribers
- PPP, multilink PPP (dynamic, bandwidth-dependent addition of B-channel, flexible short hold mode, facility for automatic adaptation to metering pulse)
- LAPB (X.75)
- HDLC (raw), CISCO-HDLC
- X.75 over PPP (Compuserve, login script capability)
- PPPoE – Point to Point Protocol over ETHERNET for ADSL access

> SAFERNET™ security technology

XCENTRIC is equipped as standard with firewall mechanisms that enable it to ward off the major threats to network access, such as DoS (Denial of Service), brute force and IP spoofing attacks. This provides reliable access protection for the complete system, secure remote maintenance facilities and secure integration of the communication system into the corporate Wide Area Network (WAN).

SAFERNET™ is the collective name for the following firewall mechanisms:

- Access lists: filtering IP, IPX, X.25 and bridging packets according to various criteria
- Caller identification: identification of the caller by evaluating the CLID (Calling Line Identification)
- Callback: identification of the caller by using the CLID to set up an outgoing call back to the caller (inband and outband)

- PPP authentication mechanisms: PAP, CHAP, MS-CHAP, MS-CHAP V2
- Connection logs: recording of all relevant connection data on a PC in the network
- Community passwords: prerequisite for configuration changes
- NAT (Network Address Translation): the router isolates the complete network from public access
- Encryption of PPP connections: MPPE (40/128-bit), DES (56-bit), Blowfish (56-bit)
- Back route verification for protection against spoofing attacks
- Separate password protection for system management and CAPI/TAPI access
- ISDN/IP accounting and SNMP traps
- Allow lists for ISDN Login and login over Telnet

The SAFERNET™ functionalities can also be supplemented by RADIUS or VPN-PPTP (Point-to-Point Tunneling Protocol) as an option.

> Accounting

- Automatic evaluation of charges in units or currency amounts according to the ISDN network requirements
- Output of complete charge data records (date, time, call duration, extension number, number, connection units) via SYSLOG to a server/PC in the local network or meters in the system
- Evaluation of charges with BinTec PABX Accounting
- Charging information from the ISDN (during and/or at the end of the connection)
- Charge limit for each subsystem (PABX, router, application server)
- Separation of direction (selective assignment for each extension for outgoing calls to the external BRI connection)
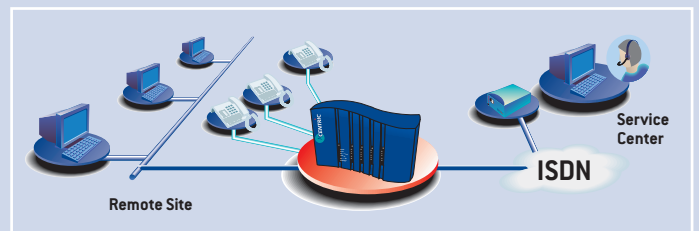
> Configuration and maintenance

The system can be fully configured and maintained from a remote terminal. Changes can be made to the configuration during operation. Diagnostic tools are integrated in the equipment.

- Remote configuration and administration via ISDN Login, Telnet, SNMPv1 (SNMP MIB2 and private MIB)
- ISDN Login for remote maintenance and remote initial configuration
- Configuration using Windows tools (Wizard, Configuration Manager)
- Secure remote maintenance with SAFERNET™ security technology
- Easy-to-use Setup Tool: menu-guided Setup Tool independent of operating system (over serial interface, LAN, ISDN Login)
- Free system software updates via www.bintec.net
- Firmware update possible remotely (ISDN, LAN) or via serial interface

Technical data

> CAPI interface for third party software

The network CAPI provided permits the use of telematic services on any PC in the LAN. This makes it possible to access the ISDN without the need to fit an ISDN card in the PC. Typical applications:

- Announcement and information services, information systems
- Unified Messaging
- ACD, IVR
- PC fax (group 3 fax)
- Answering machine (BinTec's Voice Mail Server included as standard)
- Data transmission (Eurofile Transfer)

The provision of the Remote CAPI as standard interface permits simple integration of third party software (e.g. Tobit, RVS-COM, Voxtron CapiButler, etc.).

CAPI driver versions
- Dual Remote CAPI (v 1.1 and v 2.0) for Windows 95/98/2000 and Windows NT
- Multi-BRICK CAPI Client for Windows NT
- Source code library (CAPI) for other operating systems (e.g. UNIX, AS400)

CAPI protocols and standards
- Supplementary services: HOLD (Call Hold, ETS 300 139), brokering, CF (Call Forwarding, ETS 300 199- 201), call forwarding activation / deactivation / status requests (CFU = unconditional, CFB = busy, CFNR = no reply), CD (Call Deflection, ETS 300 202), call forwarding during the ringing phase, ECT (Explicit Call Transfer, ETS 300 367), call transfer
- DDI (Direct Dial In)
- FAX G3 (T.30) (hardware fax on one B-channel) SW/HW fax
- V.110 bit rate adaptation
- 64-kbps data
- Transparent mode (voice)
- Hardware modem on one B-channel
- Protocols: X.25, ISO 8208, T.70NL, T.90, LAPB (X.75SLP)

> Standard TAPI interface for CTI

The integrated TAPI server provides the services needed for CTI applications and the TAPI interface permits the integration of workstation and telephone. Typical TAPI applications:

- Operator desk (BinTec Operator Desk included as standard)
- Call center application
- Computer-aided telephoning with database connection

Another application included as standard is the BinTec Power Phone or BinTec CTI Phone.

TAPI driver versions
- TAPI with full network capability in terms of TAPI 2.1
- TAPI v1.4 for Windows 95/98, TAPI v2.0 for Windows NT

> Management tools

Configuration Wizard
BinTec's Configuration Wizard is a convenient utility for getting your XCENTRIC started quickly and easily. A basic configuration containing all the major XCENTRIC settings and Internet access via an Internet Service Provider (ISP) can be set up over the serial interface of a Windows PC. As the Configuration Wizard guides you through the configuration step by step, detailed network knowledge is not necessary. Informative graphic displays and a detailed, context-sensitive online help system you can access at any time during the configuration provide additional support.
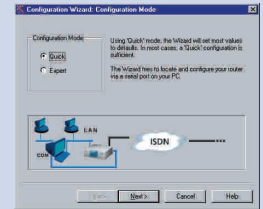
Configuration Manager
The Configuration Manager offers a convenient way of configuring the integrated PABX (e.g. extension numbers, user administration, exchange access rights). It also provides easy access to all SNMP tables and system variables via a graphical user interface. The desired configuration part can be selected from a tree structure and then configured in the usual Windows-style dialog boxes.
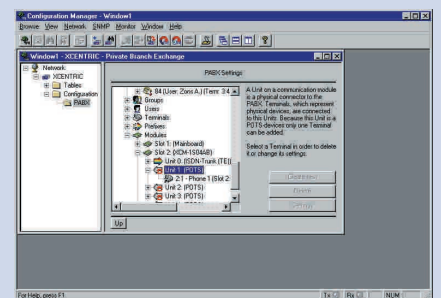
DIME Tools
The DIME Tools include tools for configuration, maintenance and diagnosis and contain a BootP Server, TFTP Server, Syslog Daemon, Time Server and Tracer for ISDN and CAPI/TAPI.
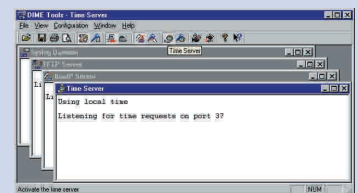
Activity Monitor
This tool provides a permanent overview of interface utilization for telephony and data traffic. The display uses icons in the Windows status bar and separate menu windows. Everything is clearly laid out and complete - so you always know what's happening. The administrator has a password-protected facility for selectively controlling individual interfaces and connections with certain commands, e.g. for setting up and clearing connections or changing a preconfigured Internet provider.
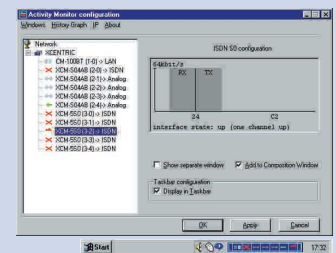
BinTec PABX Accounting
Connection data such as date, time, call duration and charging information are recorded and can be output as single charge or global charge summaries.
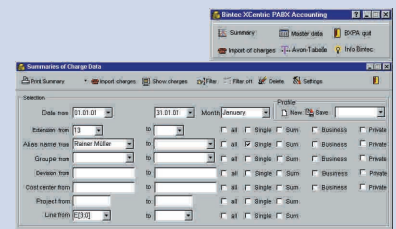
BinTec LCR Manager
A Least Cost Router (LCR) is supplied as standard with XCENTRIC. The LCR Manager can be used to configure different telephone providers for different prefix areas and times of the day and save these as a configuration file.
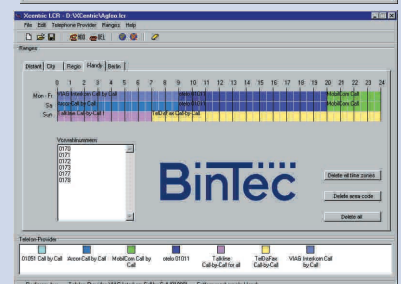
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Technical data

> BinTec CTI applications

Power Phone

BinTec's Power Phone is a combination of busy display and CTI application for controlling the telephones connected to XCENTRIC. Outlook is integrated so that contacts and addresses from Outlook can be used directly for dialing the partner.

- Power Phone can be placed as a task bar in any position at the edge of the screen
- Control of telephone functions
- Call log administration (separate lists for incoming and outgoing calls)
- Notification of incoming calls received on the Voice Box (see Voice Mail Server)
- Direct reading of XCENTRIC directory of internal subscribers
- External directory with various groups
- Drag-and-drop configuration of busy display
- Direct communication similar to chatting is possible between two applications for sending short messages in both directions using popup windows

Operator Desk

BinTec's Operator Desk is an application that provides an overview of the calls currently in progress over XCENTRIC. The Operator Desk shows the calls in progress and the line utilization. Individual calls can also be connected. The Operator Desk is an ideal tool for use as telephone switchboard and for system control by the system administrator.
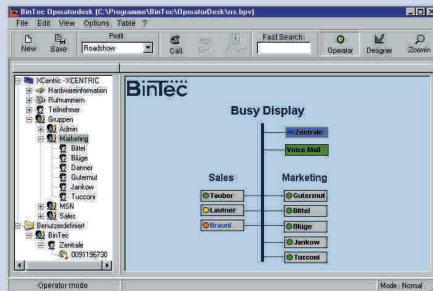
- Designer mode: changing the layout of the Operator Desk, positioning and shifting entries
- Operator mode: connection of calls
- Connection of each incoming call within the system by mouse click
- Optimum number of Operator Desk functions obtained with an analog telephone and headset or the CS300 system telephone

Voice Mail Server

The Voice Mail Server is an intelligent answering machine for all XCENTRIC extensions. The application only needs to be started on a Windows PC in the network and can then be used by all XCENTRIC users.
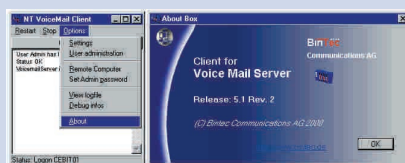
- Forwarding of received messages to a preconfigured e-mail address and / or notification to the Power Phone application
- Multi-user capability with a separate mailbox for each subscriber
- Listening to own voice mails after entering the relevant codes and PINs at each telephone
- Starting a callback at the press of a button while listening to the mailbox (prerequisite: calling line identification provided)
- Announcement of extension number, date and time of recorded calls
- Remote configuration of call forwarding
- Voice-controlled menu guide, each mailbox can be set to German / English
- Definition of two different greetings according to time of day

BinTec CTI Phone

The telephone connection can be completely controlled via this application:
- Multi-user license version 2.11
- Manual and automatic call acceptance for hands-free operation (telephoning possible with headset, handset or telephone terminal)
- Inquiry calls, brokering, call hold and three-party conference or forwarding a call for analog terminals
- Call forwarding
- Call waiting
- Convenient address book (e.g. database integration, multiple sorting and selection functions)
- Convenient journal incl. call duration, notepad and subscriber assignment
- Journal analysis in dBase IV format
- Logging of all calls in central journal when PC switched off (with NT server installation)
- Freely configurable »Power Dialer« for automatic telephoning through lists of numbers

Functions available with calling line identification:
- Automatic selection of forms in databases (e.g. automatic start for an order form)
- Notepad function with preconfigurable information (e.g. time, date, name, ...)
- Automatic call-up of predefined applications (e.g. MS Word®)
- Subscriber identification with database comparison

Central administration and functional checks (CTI Phone Server)
- NT-based administration
- Assignment of rights to each subscriber by NT administration
- Central address book (generated from ODBC/dBase IV database)
- Central notepad access

Software integration
- Full MS Outlook® integration (contact pop-up, creation of new contact for unknown telephone number, journal kept via MS Outlook®)
- ODBC/dBase IV database integration (journal analyses / address book integration)
- Automatic integration of macros into MS Office® applications for assisted telephony
- Integration into MS Office® environment (e.g. MS Outlook®)
- SAP/R3 support
- Integration into any Windows application via DDE interface

XCENTRIC

Technical data

> Basic system hardware

- 1 slot for PRI module (XCM-S2M)
- 4 slots for ISDN/analog modules (XCM-5S0, XCM-S04AB)
- 2 slots for hub modules (XCM-HUB)
- Slot for Smart Media flash card for saving bootable firmware and configuration (recovery system)
- 2 MB internal flash (firmware + configuration)
- 8 MB RAM (for future SW features, up to 32 MB possible)
- Fax/modem hardware (DSP)
- 10/100 Mbps dual-speed Ethernet
- Serial interface
- Jack for external music-on-hold input

Mainboard (XCM-BASE)
- Serial interface
- LAN 100BaseTX
- Door Incom Module (TFE)
- Slot for Flash Card
- Stereo jack for external music-on-hold
- PRI modul (optional)

2 slots for modules for 8 Port Hub modules:
- XCM-HUB

4 slots for modules for ISDN modules:
- XCM-5S0
- XCM-S04AB

- Door intercom unit with control inputs/outputs for bell, door opener, etc.
- Suitable for wall mounting
- Built-in mains unit

> Hardware expansion cards

The expansion cards can be used in any desired combination.

- XCM-S2M: PRI interface with 30 B-channels
- XCM-S04AB: 1 BRI (external) / 4 analog interfaces
- XCM-5S0: 5 BRI interfaces (all configurable as ext./int.)
  Up to 8 digital terminals can be connected and administrated for each internal BRI bus. A power supply of maximum 2 W per BRI is available for digital telephones without their own power supply. A maximum supply of 20 W is available for the system in its maximum size.
- XCM-HUB: 8 LAN interfaces 100BaseTX, Ethernet 10/100 Mbps, switching hub with auto-negotiation (between 2 full duplex ports, a 10 Mbps and a 100 Mbps segment)

> BinTec CS300 system telephone

The CS300 is ideally matched to XCENTRIC and offers many convenient features, which can be assigned to keys if required. Each key has an LED to indicate if the feature is currently in use.
In addition to the standard ISDN telephone features, CS300 also offers:
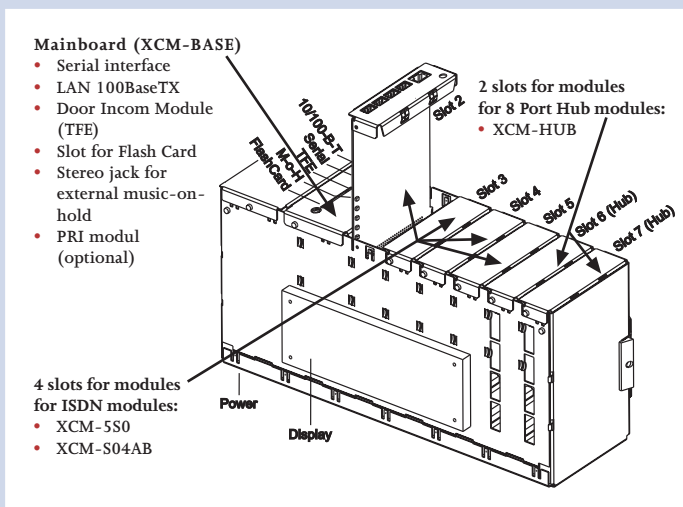
- Busy display (connection and line keys)
- Boss/secretary function
- Different acoustic call indications
- Announcement to an internal subscriber
- Team line key
- Intercom function

Busy display
The busy display always indicates which lines are in use: If you configure the function keys as connection keys, the LEDs indicate whether the extensions are busy or free. If configured as line key, the LED indicates the status of the exchange line.

Boss/secretary function
A useful business function for all branches, e.g. ideal for law practices and accounts offices. If the boss doesn't want to be disturbed, all calls to his extension can be automatically directed to the secretary's telephone. This function is also supported by LEDs.
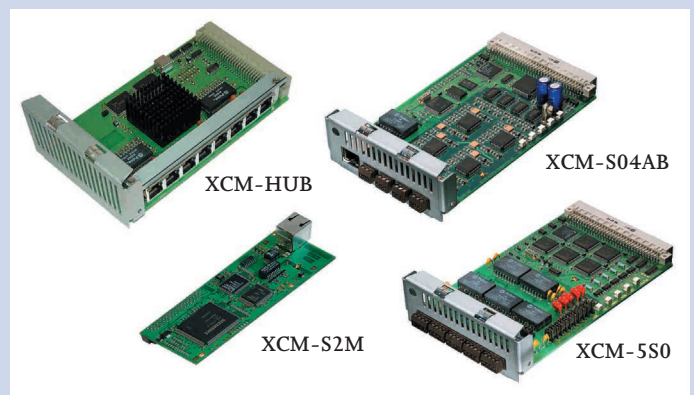
XCM-HUB

XCM-S04AB

XCM-S2M

XCM-5S0

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