X4000

Release Notes

System Software Release 5.1.6 Patch 10

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These Release Notes desribe new features, changes, bugfixes, and known issues of System Software Release 5.1.6 Patch 10 for **X4000**.

1 New Features

The following new features have been implemented in System Software Release 5.1.6 Patch 10:

- enhanced performance

- PPTP (PNS) mode for ADSL access

- PPP encryption for RADIUS partners

- additional RADIUS functionality
    - RADIUS accounting for PPTP connections
    - RADIUS accounting for PPPoE connections

- session time-out for PPP connections

- fixed external ports for outgoing NAT Sessions

- XTR-L modem module support

- timestamp in syslog

- maximum number of entries in X.25 call history

1.1 Enhanced Performance

Through optimization of the system software an increase in performance was achieved, leading to a significant gain in throughput.

1.2 PPTP (PNS) Mode for ADSL Access

X4000 can now be configured as a Windows client as described in the **Software Reference**, chapter "How Do I Configure and Connect a Client-to-LAN VPN?". You will find the **Software Reference** in the download area of www.bintec.net.

1.3 PPP Encryption for RADIUS Partners

It is now possible to establish encrypted PPP sessions which are authenticated through a RADIUS server. Since authentication in this case is executed by a third-party server, certain restrictions apply:

■ Using MPPE Encryption, the necessary keys can only be generated by SteelBelted and Microsoft IAS if the server transmits the *MS-CHAP-MPPE-KEYS* attribute.

■ All RADIUS Servers supporting BinTec specific attributes can use DES and Blowfish encryption with static keys only, i.e. if the **EncKeyNegotiation** variable in the **pppExtIfTable** is set to *static*, and the **EncTxKey** and the **EncRxKey** variables are set to complementary values for both WAN partners.

1.4 Additional RADIUS Functionality

Radius functionality is one of the key features of **X4000**. Several new functions are now available.

> For information on RADIUS (Remote Authentication Dial In User Service) see the BinTec **Software Reference** at www.bintec.net

1.4.1 RADIUS Accounting for PPTP Connections

X4000 now transmits all attributes needed for the accounting of secure PPTP (Point to Point Tunneling Protocol) connections which are established by Virtual Private Networks (VPN).

1.4.2 RADIUS Accounting for PPPoE (XDSL) Connections

Likewise, **X4000** will now transmit all attributes of high speed connections such as ADSL or cable modems that use PPPoE (Point to Point Protocol over Ethernet).

> On setting up **X4000** for the use of ADSL, see the **User's Guide**, chapter "Configuring the LAN Interface for Using ADSL (PPP-over-Ethernet)".

1.5 Session Time-out for PPP connections

In release 5.1.6 Patch 10, a session time-out for PPP connections is available via MIB variable **biboPPPSessionTimeout**.

The variable **biboPPPSessionTimeout** specifies the maximum number of seconds before termination of an established PPP session regardless of any data throughput on the corresponding link(s). The default value zero of the variable means there is no time limit on the PPP session. Any shorthold that would terminate the connection prior to the session time-out will remain functional.

1.6 Fixed External Ports for NAT Sessions

Under certain circumstances (e.g. the use of Internet Key Exchange) dynamic source port mapping may be undesirable for outgoing NAT sessions. In these cases fixed external ports can be specified in the **ipNatOutTable**. However, not all entries make sense: It is unreasonable to map multiple internal machines to a single external IP address and port. The router, then, cannot determine to which internal machine packets sent in response should be directed.

1.7 XTR-L Modem Module Support

X4000 will now support the new BinTec XTR-L modem module which will soon be available.

1.8 Time Stamp in Syslog

With release 5.1.6 Patch 10, a trailing time stamp for syslog messages is available displaying the local system time of **X4000**. In the Setup Tool, **Timestamp** can be set under *SYSTEM* ▶*EXTERNAL SYSTEM LOGGING* ▶*ADD.*

The following part of the menu is relevant for the configuration:

Field	Meaning
Timestamp	System time of **X4000**.

Table 1-1: *SYSTEM* ▶External System Logging ▶*ADD*

The **Timestamp** field includes the following options:

Possible Values	Meaning
all	system time displaying date and time
time	system time without date
none	no timestamp

Table 1-2: Timestamp

To activate the time stamp function, proceed as follows:

➤ Go to *SYSTEM* ▶*EXTERNAL SYSTEM LOGGING* ▶*ADD*

➤ Select **Timestamp**: *all* or *time*.

All syslog messages invoked in the Setup Tool under ***MONITORING AND DEBUGGING*** ▶ ***MESSAGES*** will be displayed with the configured time stamp format.

1.9 Maximum Number of Entries in X.25 Call History

The maximum number of entries in the X.25 Call History can now be specified through the variable **x25HistoryMaxEntries** in the **x25Table**. The range of possible values is *0-255*.

2 Changes

In System Software Release 5.1.6 Patch 10 the following changes have been made:

2.1 MIB Variable ifLastChange

The MIB variable **ifLastChange** displayed the length of time passed since an interface changed its state.

With release 5.1.6 Patch 10, the MIB variable **ifLastChange** displays the absolute system time when the state of an interface has changed in conformity with RFC 1213.

2.2 SNMP V. 1 Compatibility

The possible value *version1_compat* was added to the **AdmSnmpVersion** variable, allowing for enhanced compatibility with different SNMP managers, e.g. HP OpenView or the BinTec Configuration Manager.

2.3 ADSL Flatrate Configuration

Setting the static shorthold of **X4000** to the value of *-1* will lead to an immediate redial if an ADSL connection is dropped. This is desirable for the configuration of a flatrate interface in which case the duration of a connection is cost neutral.

To configure a WAN partner for such a connection, go to *WAN PARTNER* ➤ *EDIT* ➤ *ADVANCED SETTINGS* and enter the value *-1* for **Static Short Hold**. **Dynamic Short Hold** should be left disabled, i.e. the value has to be *0*.

3   Bugfixes

3.1   DHCP: Stacktrace after Reboot

With **X4000** acting as DHCP server certain actions or situations could cause either a stacktrace or a freeze. These situations were:

- After a reboot **X4000** had "forgotten" which IP addresses were already in use (the **ipDhcpInUseTable** was empty). As soon as a client issued a request to renew its IP address, **X4000** froze. All clients' IP addresses had to be removed manually, and the router had to be rebooted again.

- After a reboot of **X4000**, a client had received an IP address from Windows (either Windows 98 or NT 4.0 Server) and then requested an IP address from the **X4000** pool. A stacktrace occurred.

- After a reboot of **X4000** a stacktrace was caused by entering `ipconfig / release` in the SNMP shell, followed by `ipconfig /renew`.

These problems have been solved. **X4000** will now properly handle IP address requests after a reboot.

3.2   X.31: ISDN Deadlock

With heavy traffic in either one or both B-channels an ISDN deadlock occurred if an X.31 connection was additionally established in the D-channel. Active connections were dropped and no new connections could be established without a reboot.

This problem has been solved.

3.3 Trace Tool

3.3.1 Freeze with Unknown Interface Name

The trace tool froze when used with an unknown interface name until a new connection was established.

This bug was due to a special behavior of the name resolution algorithm which has been changed. The trace tool will now exit with an error message.

3.3.2 Trace Tool: Stacktrace with Outgoing Callback

When tracing a PPP interface with enabled callback, a stacktrace occurred during the outgoing callback call.

This problem has been solved.

3.4 Encryption/Decryption: Reboot with Differing Keys

X4000 rebooted without a stacktrace when using DES or Blowfish encryption and the WAN partner's encryption was not configured accordingly, i.e.:

■ if the value of the **EncKeyNegotiation** variable in the **pppExtIfTable** was not the same for both WAN partners

■ if the **EncTxKey** and **EncRxKey** variable were not set to complementary values for both WAN partners and **EncKeyNegotiation** was set to *static* in the **pppExtIfTable**

This problem was due to unpredictable data generated by decryption with a non matching key. It has been solved.

3.5 Interface Not Blocked After Unexpected Termination of CHAP Authentication

After unexpected termination of a CHAP authentication the interface was not set to a *blocked* state and continuous (possibly useless) redialing was not prevented.

This problem has been solved, and the interface will now be set to a *blocked* state.

3.6 Module X4E-2PRI

Several problems with this module have been solved:

3.6.1 Configuration with the Setup Tool

Configuring the X4E-2PRI module with the SNMP **Setup Tool** was not possible.

The module can now be configured with the help of the **Setup Tool**.

3.6.2 Lost Configuration After Reboot

After a reboot of **X4000** the configuration of the X4E-2PRI module was lost.

This problem has been solved; the configuration of the module will no longer be deleted by a reboot.

3.6.3 G.703 issues

There were several problems with G.703 interfaces, resulting in unreliable connections of this type.

These problems have been solved, and the module will now support G.703 connections reliably.

3.7   Leased Line WAN Partners

All X4E-3BRI leased line WAN partners were identically named *Leased, Slot 4*.

This problem has been solved, leased line WAN partners will now be numbered correctly.

3.8   Setup Tool: Incoming Call Answering

Even though the CAPI user concept was described in the User's Guide, and CAPI 2.0 was selectable in the Setup Tool, the field **CAPI username** did not appear. The username had to be entered directly into the **isdnDispatchTable**. The username then showed in the *WAN* ▶ *INCOMING* ▶ *INCOMING CALL ANSWERING* menu, but still not in the *WAN* ▶ *INCOMING* ▶ *EDIT* ▶ *INCOMING CALL ANSWERING* menu.

> For further information on the CAPI user concept and on configuring CAPI users, see the User's Guide, chapter "Configuring the ISDN BRI Interface".

This problem has been solved, the CAPI username will now show in all relevant menus.

3.9   PPTP: Memory Leakage

If an ADSL connection attempt via PPTP failed permanently, and if the interface was configured as a flatrate interface (i.e. with **Short Hold** *-1*), 88 bytes of memory were lost with each failure.

This problem has been solved.

3.10   PPPoE: Memory Leakage

If an ADSL-over-PPPoE connection failed and if the interface was configured as a flatrate interface (i.e. with **Short Hold** *-1*), 88 bytes of memory were lost with each failure.

This problem has been solved.

3.11   X.25_PPP Shorthold

For WAN partners configured to use encapsulation *X.25_PPP*, the configured shorthold did not work correctly.

This problem has been solved.

3.12   Missing RADIUS Attribute

With **X4000** used for RADIUS accounting the *Framed-IP-Address* attribute was missing in the Accounting Start Packet if the IP address was assigned from a local IP address pool by **X4000**. Some service providers, however, need this information for accurate accounting.

This problem has been solved, the *Framed-IP-Address* attribute is now transmitted.

3.13   Failure of First ISDN Login Call

If ISDN autoconfiguration in the *WAN* menu was disabled, the first ISDN login after a reboot failed while all following dialouts were successful.

This problem has been solved.

3.14   Modem: Misdirected Output

Entering the modem command in the SNMP shell did not lead to any output if it was invoked in a TELNET session. All output was printed to the serial console.

This problem has been solved.

Moreover, a number of minor issues have been removed, and **X4000** will now reliably support modems.

3.15   **X4000** MMI

The display of the **X4000** Man Machine Interface did not update when set to *MONITORING* ▶ *CURRENT TEMPERATURE*, even though the values in the MIB were correct.

This problem has been solved, the values in the MIB table are now displayed by the MMI.

4 Known Issues

4.1 Reboot with PPP and PAP

After establishing a VPN connection with PAP authentication and with encryption set to MPPE 40, MPPE 56, DES 56, MPPE V2 40, MPPE V2 56 or Blowfish 56, **X4000** reboots. PAP authentication, however, does not make sense in this context, since CHAP authentication offers higher security. As PAP authentication might lead to a reboot of **X4000**, it is safest (and most secure) always to choose CHAP or MS CHAP.

> When setting up a client-to-LAN VPN, always make sure that the authentication specified in the *VPN* ▶ *ADD* ▶ *PPP* ▶ *EDIT* menu matches the one specified by the *AuthProtocol* variable in the **biboPPPProfileTable**.
>
> For further information on setting up a PPTP connection and configuration examples see the relevant chapter of the **Software Reference** available from www.bintec.net.

4.2 Configuration Wizard: Sending Configuration

In 5.1.6 Patch 10 the `get file` command does not work properly with serial connections (i.e. via the COM ports). This may have the result that the **Configuration Wizard** is unable to transmit a configuration file to **X4000**. There are two possible workarounds for this problem:

■ If you want to reconfigure your **X4000** with the **Configuration Wizard** using a serial connection, you must do so prior to updating your system software. The configuration stored on the router will not be deleted by the update process.

■ If you already have updated your system software to release 5.1.6 Patch 10, you can still change the configuration with the help of the **Configuration Wizard**. However, you will have to save the configuration to a local harddrive (the wizard does so automatically) and upload the configuration file to the router via TFTP, i.e. via your LAN.

> You probably have used the **TFTP Server** included in the BinTec **Dime Tools** when upgrading your system software. You can invoke the upload of a configuration file to **X4000** via the **CONFIGURATION MANAGEMENT** menu of the **Setup Tool.** Choose *get (TFTP -> FLASH)* in the **Operation** field.
>
> In case you are not familiar with using the TFTP server, please refer to the **User's Guide**, chapter "Configuration Management".

4.3   Activity Monitor

The BinTec **Activity Monitor** delivered with the **BRICKware** does not function properly with **X4000**. As of now there is no workaround for this problem.

4.4   X4E-1PRI/X4E-2PRI Modules

Currently, CAPI applications will not work with the X4E-1/2PRI modules.

Moreover, setting the value of the **ISDN Line Framing** field to *special (no CRC)* in the **Setup Tool** will lead to a malfunction of the module: The ISDN connection will not be available.