

# BT Quantum

## Administrator's Guide BT Quantum System



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# Welcome

## Using this document

*This Administration Guide provides a detailed explanation of how to programme and administer your BT Quantum system. The guide describes the procedures using the web interface. Wherever it is possible to programme and administer your system from the telephone, the procedures for doing so are included. All telephone programming is done from a specific telephone extension known as the programming extension.*

*For more information about setting up and using the BT Quantum system refer to the following documents:*

- *The BT Quantum Installation Guide for instructions on installing and commissioning the BT Quantum system.*
- *The BT Quantum User Guide for information on using the BT Quantum features with a digital or IP phone, a DECT telephone, Q Phone or a standard telephone.*
- *The BT Quantum Quick Start Guide for a quick overview of how to get a basic system up and running.*
- *Quick Reference Guides for each of the telephones summarize the features and functionality of the BT 8568, BT 8528, and BT5330, BT 5320, BT 5360, Q DECT telephones and the Q Telephone.*

## BT Contact Details

*BT Quantum On-Line Support: <http://www.productsupport.bt.com/quantum>*

*BT Quantum Help Desk: 0870 240 8377*

*BT Fault Reports: 0800 800 154.*

*For information on obtaining additional systemphones or system options, please call BT Sales at 0800 800 152.*

*These numbers are pre-programmed and can be accessed in the Directory on the systemphones.*

# About your BT Quantum System

*The BT Quantum is a modular IP/PBX communications system that is designed to support all the telecommunications needs of a small to medium-sized office.*

*Depending on the configuration you install, a single system can manage your:*

- *Telephone lines (BRI, PRI, analogue exchange and SIP).  
The BT Quantum supports 16 PSTN / BRI B Channels / VoIP Lines, and up to 16 ISDN PRI channels.*
- *Telephone extensions (Digital, IP, DECT and POTS).  
The BT Quantum supports up to 48 extensions.*
- *Data network, i.e. LAN (wired and wireless to share Internet, printers, files, customer databases etc.)*

*The BT Quantum system:*

- *Is equipped with an integrated ADSL2+ modem for Internet access.*
- *Supports Mobile Broadband dongles for Internet access.*
- *Provides phone directories allowing for the management of phone numbers and contact information*
- *Supports fixed/mobile converged communications. BT Quantum allows you to include mobile phones as part of your communication network, and to use Fixed Mobile Convergence (FMC) features such as call toggling and simultaneous ringing of desk and mobile phones.*
- *Includes an onboard router, firewall, and 4 Gigabit LAN ports with Power over Ethernet (PoE) and WiFi. Note: these features are only available on the IP Base Module.*

## **BT Quantum Hardware**

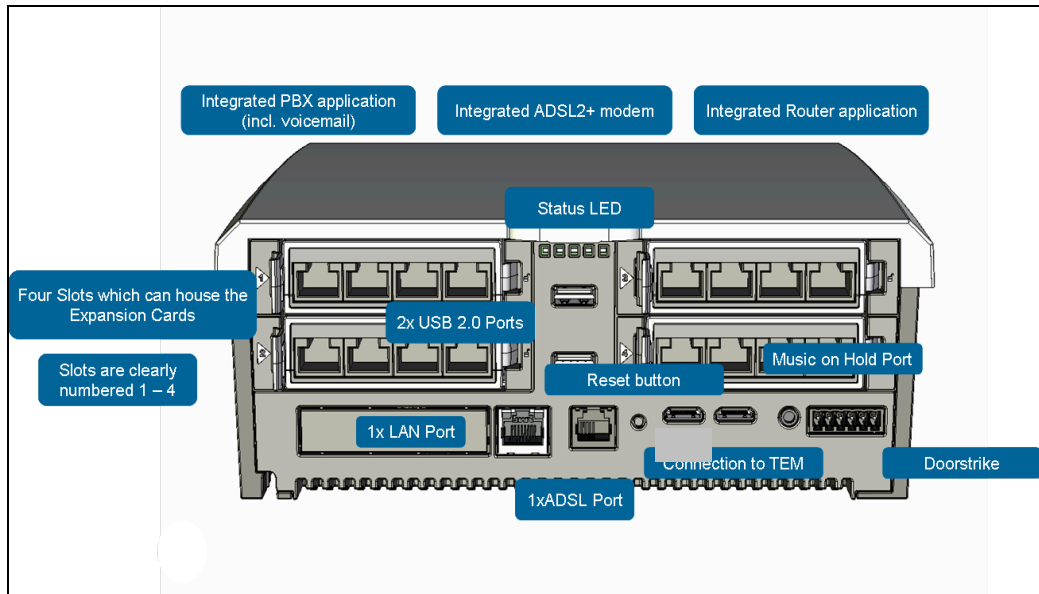
*Every BT Quantum system begins with a Base Module. The BT Quantum Base Module comes in two types:*

- *Digital Base Module*
- *IP Base Module.*



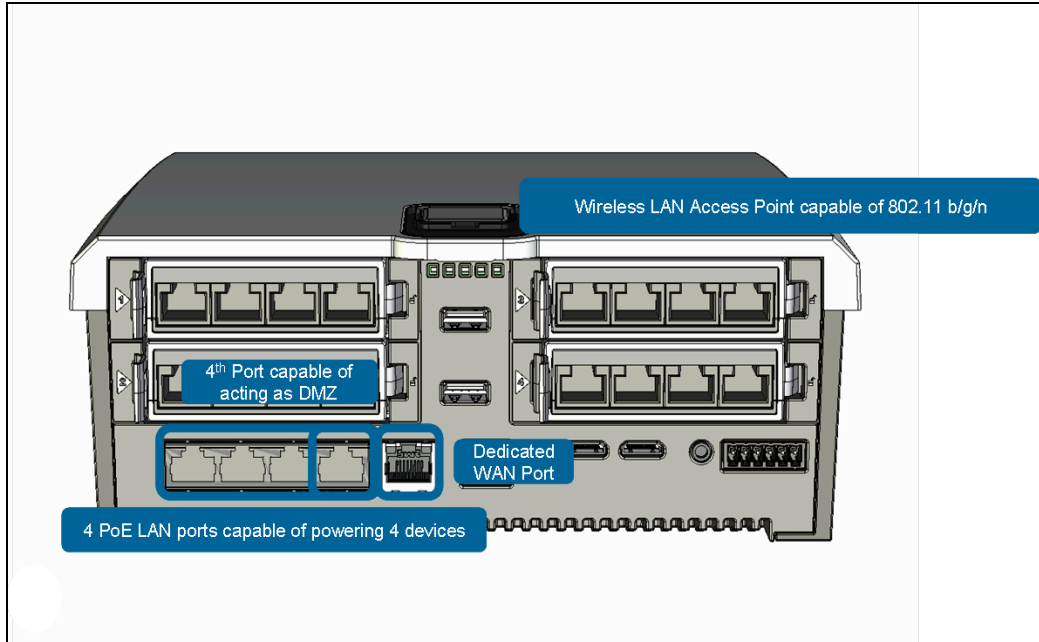
## Digital Base Module

The features of the Digital Base Module are illustrated in the following diagram.



## IP Base Module

As illustrated in the following diagram, the IP Base Module provides all the capabilities of the Digital Base Module. It also includes LAN, WAN, Wireless and DMZ capability not present in the Digital Base Module.



## **Telephony Expansion Module (TEM)**

*Both the Digital Base Module and the IP Base Module can be expanded by the addition of a Telephony Expansion Module. The TEM expands the capacity of the **BT Quantum** by adding slots for 4 Expansion Cards. You can add up to 3 TEM's to either base module. They can only be used to add voice functionality; they have no LAN or data capability*

## ***BT Quantum Telephones***

*The BT Quantum system supports five different types of systemphone.*

- *BT 8568 and BT 8528 digital systemphones.*
- *BT 5330 BT 5320 and BT 5360 IP phones. These can be used as both internal extensions and as remote teleworker extensions.*

*In addition, BT Quantum supports the following telephones.*

- *BT Q DECT telephones: up to 4 can be supported on your system.*
- *BT Q phone, and analogue telephones.*

*You can also use a softphone with your BT Quantum system. A softphone is a software program that allows you to make telephone calls over the Internet using a PC.*

# Managing your BT Quantum

*The primary method of managing the BT Quantum is through the web interface. Certain system functions can also be managed using the programming extension.*

## **BT Quantum Web Interface**

*The web interface is a web browser based tool for programming and administering your system from a PC. It has a graphical user interface with a series of simple pages that allow you to manage all aspects of the system.*

*The pages are grouped into six categories:*

- *System: to access system-wide functionality.*
- *PBX: to configure system-wide features of the voice application.*
- *Lines: to configure lines and line-related functions.*
- *Extensions: to configure extensions and extension-related functions.*
- *Data: to configure broadband, wireless, router and firewall settings.*
- *Diagnostics: to view status information and access testing functions.*

*This BT Quantum Administration Guide is structured to align with the organization of the web interface. Wherever the programming extension can be used to perform a function, the procedure is included after the web interface procedure.*

*To access the BT Quantum web interface you need a PC and access to the Base Module over the LAN. To connect a PC to the system:*


- *On the Digital Base Module, connect to the single LAN port available. If a structured cabling infrastructure is not in place you may connect the PC directly.*
- *On the IP Base Module, connect to any of the LAN port interfaces.*

*Once physically connected to the base module, you can log on to the web interface.*

*BT Quantum supports Microsoft Internet Explorer 8 and Mozilla Firefox 3.6. To log on, using your web browser:*

- *Enter the LAN IP address 192.168.199.1 or <http://lan.home>.*  
*Ensure your browser settings are correct and your network proxies are switched off.*
- *On the Login page, enter the Username and Password.*  
*The default system username/password combination is user/user. It is recommended that you change the default password when you log in. Refer to 'System Password' on Page 11 for instructions on how to change the password.*

*The home page is displayed when you first log in to the web management system. It presents a summary of status information from across your BT Quantum system.*

*To view the home page at any time while using the web interface, click on the BT logo  displayed at the top left of the page, or select Network Status from the Diagnostics page.*

*Some BT Quantum functionality requires a specific model of hardware, and some is subject to licensing.*

## ***BT Quantum Programming Extension***

*The programming extension is the digital systemphone used for all phone-based system programming. By default this is extension 201, but it can be changed. A password is required for system programming from the programming extension. The default system password is IIII but it can be changed to any 4-digit number.*

*The programming extension is capable of performing a subset of the administration tasks associated with BT Quantum. The set of tasks is outlined below.*

- *Time and date*
- *Change password*
- *Change programming position*
- *Music On Hold*
- *Change greetings*
- *Timers*
- *Class codes*
- *Class of service*
- *Name programming*
- *Examine passwords*
- *Group programming*
- *External divert*
- *Voice boxes*
- *Reset system*
- *Commission system*
- *Licensing*

*Any system programming from the Programming Extension requires that you enter the System Program page on the systemphone. To do so:*

- *Press the ⊗ key.*
- *Select **System Program**.*
- *Enter the system-programming password (**IIII** by default).*

## ***BT Quantum Operator Extension***

*The operator extension is the phone located in the first detected extension port when the system is powered up.*

*Dialling 0 calls this extension. The call is placed to extension group II. Extension group II has extension 201 as the only entry in default.*

*Do-Not-Disturb cannot be enabled for extension 201. It is used as the fall back extension if all extensions in a group enable Do not Disturb.*

*Night Service is activated from Extension 201 only.*

*The system Voice mail is turned on and off from extension 201.*

*System Voice mail messages are indicated at extension 201.*

*Commissioning call is displayed on extension 201 until the system is commissioned.*

# BT Quantum System Configuration

*This section describes the programming options when 'System' is selected on the main bar. The options available are listed here and they apply to the overall system.*

- *Licensing*
- *Time and Date*
- *Web Password*
- *Firmware Update System*
- *Firmware Update IP Phones and Voice Prompts*
- *Backup / Restore*
- *Backup Voice Mail*
- *Reset System*
- *Pre-configuration by CRF*
- *Commissioning*
- *Remote Dial In Access*
- *Remote Web Access*
- *Documentation*
- *Unified Communicator*

## **Licensing**

*When you purchase a BT Quantum system, you receive a licence key that contains information about your specific system.*

- *The licence key is unique and will only work on your system; it will not work on any other system.*
- *The licence key is 30 digits in length and can be entered from the web interface (recommended) or from the programming extension.*
- *The licence key unlocks the licensed functionality on your system. The unlocked features can then be configured.*

*When you upgrade your system, for example when you add a new EC card, you receive a new licence key:*

- *Once the new key is entered, the new functionality is unlocked.*
- *This new licence key replaces your previous key.*

*You receive a new licence key when you add any of the following to your system:*

- *EC Digital Extension card – enables four extensions*
- *EC Analogue Extension card – enables four extensions*
- *EC BRI card- enables two ISDN 2 circuits (four B-channels)*
- *EC PRI card – Enables 8 B-channels*
- *PRI B channel – Enables an additional ISDN 30 B-channel*
- *EC Analogue Exchange card – enables four analogue exchange lines*
- *DECT Phone*

- 5320 or 5330 or 5360 systemphone or a softphone
- Remote Teleworker
- Fixed Broadband (ADSL line)
- Mobile Broadband (HSDPA dongle)
- Fixed Mobile Convergence (FMC)
- UC package – Basic, Outlook or CRM
- Unified Messaging

Contact BT for further information.

The following table lists the number of licenses of each type permitted on your system.

<i>Licence Type</i>	<i>Number of Licences Permitted</i>
<b><i>Lines and Broadband</i></b>	
<i>Analogue Exchange</i>	<i>0 - 16</i>
<i>SIP Channel</i>	<i>0 - 16</i>
<i>BRI B Channel</i>	<i>0 - 16</i>
<i>PRI B Channel</i>	<i>0 - 16</i>
<i>Fixed Broadband</i>	<i>0 - 1</i>
<i>Mobile Broadband</i>	<i>0 - 1</i>
<b><i>Extensions</i></b>	
<i>Analogue Extension</i>	<i>0 - 48</i>
<i>Digital Extension</i>	<i>0 - 48</i>
<i>IP Desktop Extension</i>	<i>0 - 32</i>
<i>DECT Extension</i>	<i>0 - 4</i>
<i>Remote Teleworker</i>	<i>0 - 48</i>
<b><i>Extension Functionality</i></b>	
<i>UC Basic</i>	<i>0 - 48</i>
<i>UC Outlook</i>	<i>0 - 48</i>
<i>UC CRM</i>	<i>0 - 48</i>
<i>Unified Messaging</i>	<i>0 - 48</i>
<i>FMC</i>	<i>0 - 48</i>

*In addition to the licences on the system, there is also a licence required by the BTQ IP Softphone software that is installed on the PC. This licence must be entered directly into the BTQ IP Software application.*

## **Entering a Licence Key from the Web Interface**

Use the Licensing page on the web interface to:

- Enter a new licence key.
- View a list of all the valid licensed entities in your system.

To open the Licensing page, from the web interface top-level menu:

- Select **System / Licensing**.

To enter a new licence key:

- Type the licence key number in the 'Licence Key' text box.

- Press **Submit** to save the new Licence Key.  
If you enter a correct Licence key, you will see the message 'License key accepted'.  
If you enter an incorrect Licence key, you will see the message 'License key is invalid'.
- Once you have entered a valid licence key you must reset your system in order for the new licence to take effect. A link called 'Reset System' is provided in the top box on this page that brings you to the reset page. Please select the Reset Mode called 'Reset'.

The licensing page lists your current valid licenses. The page also includes links to pages that allow you to configure your licensed entities:

- Select **Extensions** to display the Extension Settings page. See 'Extension Settings' on Page 49.
- Select **Lines** to display the Line Settings page. See 'Line Settings' on Page 39.
- Select **Broadband** to display the Broadband Settings page. See 'Broadband Settings' on Page 78.
- Select **Extension Licences** to display the Extension Licence page. See 'Extension Licences' on page 74.

## Entering a Licence Key from the Programming Extension

- Enter System Programming.
- Select **Licensing**.
- Enter the Licence key provided with your system.
- Select **Confirm**.

Once you have entered a valid licence key you must reset your system in order for the new licence to take effect.

- When in the system programming menu select **Reset Options**.
- Select **Reset!**

## Time and Date

The time and date are displayed on the idle screen of telephones, the time and day stamp is heard before voice messages, and the time and date are shown on the call logging records.

- If your system equipped with analogue exchange lines and you subscribe to the BT Caller Display service (CDS) the system time will be updated by the first incoming external call after 03:00 every morning.
- If your system is connected to an ADSL line the time is also automatically updated.

You can set the time and date from the web interface or from the programming extension.

## Setting the System Time and Date from the Web Interface

From the web interface top-level menu:

- Select **System / Time and Date** to display the Time and Date page.  
The current settings for system time and date are displayed at the top of the page.

To set the time and Date:

- Enter the correct time in the Time textbox. Use the 24-hour format: HHMM (e.g. 2pm as 1400).
- Enter the correct date in the Date textbox. Use the format DDMMYY, (e.g. 10 December 2011 as 101211).
- Press **Submit**.



*Note: You must enter both the time and date. If you enter one without the other an error message is presented and the change is not accepted.*

## **Setting the System Time and Date from the Programming Extension**

- Enter **System Programming**.
- Select **Time and date**.
- Enter the correct time in 24-hour format: HHMM (e.g. 2pm as 1400).

The Display will prompt for a date.

- If you only wish to set the time select **Confirm** and the display will revert to the idle screen.
- To change the date, enter the date in DDMMYY format (e.g. 10 December 2010 as 101210).
- Select **Confirm**.

## **Web Password**

*The system password is required when you log in to the web interface. The default system password is 'user'. You should change this password as soon as your system has been commissioned.*

*Use the web interface to change the system password.*

## **Changing the System Password from the Web Interface**

*To change the system password, from the web interface top-level menu:*

- Select **System / Web Password** to display the Web Password page.

*To change the web password:*

- Enter the new password in the password textbox.
- Enter the new password again in the confirmation textbox.
- Select **Submit**.

## **Firmware Update System**

*You can download new firmware to the system. The downloading of new firmware is resilient and in the event of an issue during the download, the system will continue to run on the original firmware version.*

*Changing from running one firmware version to running another is started immediately and will cause current calls to be dropped.*

*Use the Firmware Update page to update the firmware currently installed on the system.*

*To do so, from the web interface top-level menu:*

- Select **System / Firmware Update System** to display the Firmware Update page.

*The page displays current firmware versions, and identifies the location of the firmware currently running on your system.*

- To update the firmware running on your system, select the required Firmware Update Mode:  
*Default: the firmware will be loaded to the idle flash location. Once the firmware update is complete, the system will restart running the new version of firmware.*

*User Defined: allows you to select both the flash location to which the firmware update is loaded, and the flash location from which to start the system.*

*For Default Mode:*

- Choose the location of the new firmware image.  
Select *Browse* to select the file on a PC connected to one of your BT Quantum LAN ports, or type the file location in the 'Firmware Image' textbox.
- Press **Submit** to start the firmware update process.

*Once the firmware update process is complete, the system will restart running the new version of firmware.*

*For User Defined Mode:*

- From the 'Load Firmware To' dropdown list, select the flash location for the new firmware load.
- From the 'Boot System From' dropdown list, select the flash location from which you wish the system to restart.
- Enter the location of the new firmware image.  
Select *Browse* to select the file on your local machine, or type the file location in the 'Firmware Image' textbox.
- Press **Submit** to start the firmware update process.

*Once the firmware update process is complete, the system will restart running the new version of firmware.*

## **Firmware Update Phones And Voice Prompts**

*There are four options presented when **System / Firmware Update Phones And Voice Prompts** is selected*

- *Firmware Update Phones*
- *Auto Attendant*
- *Courtesy Service*
- *Multi-Level Auto Attendant*

*If a new firmware is provided for the IP phones it is first copied onto the system. When this process is completed the IP phones should be disconnected and then reconnected in order to download the new version to the IP phones.*

- Select **System / Firmware Update Phones And Voice Prompts / Firmware Update Phones**. The 'Load from' option allows you to choose the location of the file of the new IP Phone firmware from a file or a PC or the USB flash drive connected to the system.
- Select **Browse** to select the file on your local machine or USB flash drive or type the file location in the 'Firmware Image' textbox.
- Press **Submit** to copy the file to the system.

*Disconnect and reconnect the IP phones to download the new firmware to them.*

## **Auto attendant and Courtesy pre-recorded prompts**

*Pre-recorded prompts for Auto Attendant, Courtesy Service and Multi Level Auto Attendant can be downloaded to the system.*

*The pre-recorded Auto Attendant voice prompts recordings are stored on a PC or the USB flash drive in .wav format.*

- Select **System / Firmware Update Phones And Voice Prompts / Auto Attendant**.

- For the Auto Attendant Day prompt select **File** if the file is on the local PC or **USB** if the file is on the USB flash drive connected to the.
- Select **Browse** to select the file on your local machine or USB flash drive or type the file location in the 'Voice file' textbox.
- Press **Submit** to download the file to the system.

For the Auto Attendant Night prompt repeat the above instructions selecting the file in the 'Auto Attendant Night from' box.

The pre-recorded Courtesy Service voice prompts recordings are stored on a PC or the USB flash drive in .wav format.

- Select **System / Firmware Update Phones And Voice Prompts / Courtesy Service**.
- For the Courtesy Service Day prompt select **File** if the file is on the local PC or **USB** if the file is on the USB flash drive connected to the system.
- Select **Browse** to select the file on your local machine or USB flash drive or type the file location in the 'Voice file' textbox.
- Press **Submit** to download the file to the system.

For the Courtesy Service Night prompt repeat the above instructions selecting the file in the 'Courtesy Service Night from' box.

The pre-recorded Multi-Level Auto attendant voice prompts recordings are stored on a PC or the USB flash drive in .wav format.

- Select **System / Firmware Update Phones And Voice Prompts / Multi Level Auto Attendant**.

A different Voice Prompt can be used for Digits 1 – 9.

- For the appropriate digit select **File** if the file is on the local PC or **USB** if the file is on the USB flash drive connected to the system in the 'Auto Attendant Digit (1-9)' box.
- Select **Browse** to select the file on your local machine or USB flash drive, or type the file location in the 'Voice file' textbox.
- Press **Submit** to download the file to the system.

## **Backup/Restore**

You can choose to back up your system database to either a file on a local PC, or to a USB flash drive. BT Quantum includes a USB flash drive that is connected to one of the system USB ports. Once connected, the system will perform a daily backup of configuration data to the USB flash drive. You can also restore your system configuration from either a local PC or the USB flash drive.

Note: Do not remove the USB flash unless instructed to do so by BT.

- USB flash drive. From the web interface top-level menu: Select **System / Backup/Restore** to display the Backup/Restore page.

To backup your system, select either:

- **Create backup to file:** to create a backup of your system configuration data to your file system on a PC.
- **Create backup to system USB:** to create a backup of your system configuration data to a USB key. Before you can select this option you must have a USB flash drive connected to one of the USB ports.

To restore your system:

- From the 'Restore From' dropdown list, select the location from which you wish to restore your system. Select:  
File: to restore your system from a file on a PC connected to one of your BT Quantum LAN ports.  
USB: to restore your system from a USB flash drive connected to one of the USB ports.
- Enter the location of file to be used to restore your system.  
Select Browse to select the file on a PC connected to one of your BT Quantum LAN ports, or type the file location in the 'Backup Archive' textbox.
- Select **Restore Backup**

Your system will be restored from the selected PC or USB file.

## Backup Voice Mail

You can save the voice mail messages and the Auto Attendant and Courtesy prompts to a PC file or a USB flash drive connected to the system. These messages and prompts can also be restored to the system from the saved files.

Select **System / Backup Voice Mail**.

Select the items you want to backup. The screen updates to:-

Select the option to save the file to a file on a local PC or to the USB.

The file is saved as `BT_VOICE_MAIL_QUANTUM_BACKUP-20xx-xx-xx.tar`

To restore a previously saved file select **File** or **USB**, depending on where the file is stored, from the 'Restore from' box.

- Select Browse to select the file on a locally connected PC or the USB or type the file location in the 'Backup archive' textbox.
- Select **Restore Backup**.

## Reset System

When you perform a system reset, you can choose to either retain or delete configuration information.

### Resetting the System from the Web Interface

To reset your BT Quantum system from the web interface top-level menu:

- Select **System / Reset System**.

The **Reset System** page is displayed.

The page displays the available versions of the firmware and identifies the flash drive from which the current version is running.

To perform a System Reset:

- From the 'Boot System from' dropdown list, select the flash drive that contains the firmware version you want the system to use. Ignore this step if you do not want to change firmware.
- From the 'Reset Mode' dropdown list, select the type of reset you wish to perform.

**Reset:** This reboots the system and retains all the programmed information.

**Reset to Default:** This performs a full reboot of the system and all programming with the exception of Commissioning, Licensing, DECT Registration and Voice Mail, is returned to default settings.

**Reset to Factory Default:** This performs a full reboot of the system and all programming, including Commissioning, Licensing, DECT Registration and Voice Mail is returned to default settings.

Select **Submit**.

## Resetting the System from the Programming Extension

To reset your BT Quantum system from the programming extension:

- From the programming extension, press the ⊗ key.
- Scroll until **System Program** is displayed.
- Select **System Program**.
- Enter the System Programming Password.
- Scroll until **Reset Options** is displayed.
- Select **Reset Options**.
- Select the type of reset you wish to perform.

**Reset to default:** This performs a full reboot of the system and all programming with the exception of Commissioning, Licensing, DECT Registration and Voice Mail, is returned to default settings.

**Reset:** This reboots the system and retains all the programmed information.

Note: The Reset to Factory Default is only available from the Web Interface.

## Pre-configuration by CRF

System configuration and programming may be stored in an XML file generated by a pre-configuration tool. This is available to BT only and is used to pre-configure the system prior to delivery to site. The pre-configuration tool is not available to system users.

To load the XML file to a system select **System / Pre-configuration by CRF**.

- Select the location of the file in the 'Pre-configuration from' box.
- Browse to select the file.
- Press **Submit** to load the file.

## Commissioning

Commissioning the system provides the BT Remote Access Server (RACE) with a site ID and telephone number so that BT Engineers can initiate secure remote access to the system for maintenance purposes.

The BT Quantum system can be commissioned using the web interface or the programming extension.

### Commissioning from the Web Interface

To commission your system, from the web interface top-level menu:

- Select **System / Commissioning** to display the Commissioning page.

To commission the system:

- Enter the Customer ID in the 'Customer ID' textbox.  
This is a 10 character alphanumeric value with 8 digits and 2 letters. It is provided by BT.
- Enter the Site Access Number in the textbox.  
This is the number of the site being commissioned. It is provided by BT.
- Press **Submit** to initiate the commissioning call.  
The Display shows the commissioning status as 'Commissioning call has been initiated' in orange.  
When commissioning is complete, the status changes to 'The system is commissioned' in Green.

Note: The Default Commissioning number shown is the number that is dialled to make the commissioning call. This number can be changed in the Commissioning number field but should only be changed under instruction from BT.

### Commissioning from the Programming Extension

If the system has not yet been commissioned, the prompt 'Commission System' is shown on the display of extension 201. This prompt remains on the display until the system is commissioned.

To commission your system:

- Select **Commission System** from the display of the programming extension.
- Enter the Customer ID.  
This is a 10 character alphanumeric value with 8 digits and 2 letters. When the 8<sup>th</sup> digit is entered the keypad automatically goes into Alpha mode. In this mode use the keypad to enter the two letters e.g. dial 222 to enter C, 3 to enter D etc. The Customer ID is provided by BT.
- Enter the Site Access Number.  
This is the number of the site being commissioned. It is provided by BT.
- Select **Commission Call** to initiate the commissioning call. When the commissioning is successfully completed 'Commission System' will no longer appear on the display of extension 201.

## Remote Dial In Access

This table of numbers allows BT engineers via the RACE server to automatically access the system for maintenance purposes. When a BT engineer dials the system from one of these numbers the system recognises the call as a maintenance call and provides maintenance access automatically. These numbers should be entered on instruction from a BT engineer only.

## Remote Web Access

If your system has broadband capability, BT Engineers can provide ongoing remote support over the web. Remote Web Access allows the BT Engineers remote access to the web server of your system over the broadband connection.

To ensure system security it is strongly recommended that remote access be only enabled in response to a request from your BT maintenance centre.

Use the Remote Web Access page to create a temporary logon for your BT maintenance centre.

- From the web interface top-level page, select **System / Remote Web Access** to display the Remote Web Access page.
- The BT engineer will ask you to tell him the external IP address of the system. This is shown on the page as
  - 'Your External IP Address is: xxx.xxx.xxx.xxx '
- The BT Engineer will provide the information to enter in the following fields:  
Remote IP Address: the IP Address of the remote machine accessing the system.  
Subnet mask 255.255.255.255.  
Port: the port used to open the secure (SSL) link, Port 443.
- Press **Enable**.

## Documentation

This is a link to the system documentation that is stored on the USB stick that is plugged into one of the USB slots on the front of the base module.

## Unified Communicator

This is a link to the Unified Communicator software that is stored on the USB flash drive that is plugged into one of the USB slots on the front of the base module.

You may download the Unified communicator and softphone applications to your PC. You must have system licences and a softphone licence to use these applications.

### Installing the Unified Communicator Application

Ensure the extension running the application is programmed with the required licence. See Page55.

Download and install the Unified Communicator software on the PC to be associated with the extension by clicking on the Unified Communicator Link in **System / Unified Communicator**.

Open the application from the Unified Communicator Icon on the desktop

- Select **Settings** from the Main Menu
- Select **System settings**
- Enter **192.168.199.1** as the Server
- Enter **9** as the Trunk Access
- Select **Save**
- Return to the Settings Menu
- Select **Telephony settings**
- Enter the **Extension number** of the associated extension
- Select **Save**.

## Installing the Softphone application

Download and install the Unified Communicator Softphone application software on the PC that is to run the softphone by clicking on the Unified Communicator Softphone Link in **System / Unified Communicator**.

Open the application from the Unified Communicator Icon on the desktop

- Select **Settings** from the Main Menu
- Select **System settings**
- Under Session enter the WAN IP Address as the Server. See Page 95.
- Enter **9** as the Trunk Access
- Enter the Licence key supplied with the softphone headset.

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**Caution: The system must be connected to the Internet so that the Licence can be validated**

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- Select **Save**
- Return to the Settings Menu
- Select **Telephony settings**
- Enter the **Extension number** to be used by the softphone
- Enter the SIP Password associated with the extension number. See Page 49.
- Select **Save**.



# Managing the PBX

*This section describes the programming options when 'PBX' is selected on the main bar. The options available are listed here and they apply to the telephony settings that are set for operations that apply to the telephone system as a whole.*

- *System Settings*
- *System Speed Dials*
- *Alternate Routing*
- *Timers*
- *Multi Level Auto Attendant*
- *Door Entry Settings*

## **System Settings**

*Use the System Settings page to enable or disable the following PBX features, and to change their settings if required:*

- *System Programming Password*
- *Programming Extension*
- *Account Codes*
- *Night Service*
- *Weekend Service*
- *System Voicemail*
- *System Voicemail Password*
- *Mail box capacity*
- *Music on Hold source*
- *Store all calls in Call Store*
- *Sales Phone Number*
- *Service Phone Number*
- *Helpdesk Number*
- *Alternate Routing*
- *Accept on Busy*
- *Telesecretary*
- *Group Telesecretary*
- *SIP Service*
- *System Hold LED Behaviour*

*To open the System Settings page, from the web interface top-level menu:*

- *Select **PBX / System Settings**.*
- *Set the required PBX system settings as described below.*

## System Settings

System Settings	
System Programming Password	1111
Programming Extension	Ext. 201
Account Codes	Disabled
Night Service	Disabled
Night Service Start 1 (HHMM)	0000
Night Service End 1 (HHMM)	0000
Night Service Start 2 (HHMM)	0000
Night Service End 2 (HHMM)	0000
Weekend Service	Disabled
System Voicemail	Disabled
System Voicemail Password	1111 4-8 digits
Mail box capacity (10-50)	50
Music on Hold Source	Music
Store all calls Call Store	Enabled
Sales Phone Number	0800800152
Service Phone Number	0800800154
Helpdesk Phone Number	08702408377
Alternate Routing	Disabled
Alternate Routing Weekend Service	Disabled
Alternate Routing Service Start 1 (HHMM)	0000
Alternate Routing Service End 1 (HHMM)	0000
Alternate Routing Service Start 2 (HHMM)	0000
Alternate Routing Service End 2 (HHMM)	0000
Accept on Busy	Enabled
Telesecretary	Disabled
Group Telesecretary	Disabled
SIP Service	Disabled
System Hold LED Behavior	Flash

The system settings are described in the order they appear on the System Settings page. If it is also possible to define a system setting from the programming extension, the procedure is included after the web interface procedure.

## System Programming Password

The system-programming password is required when you use the programming extension for system configuration. The default system-programming password is 1111. You can change it to any 4-digit number.

You can change the system-programming password from the web interface or from the programming extension.

## Changing the System Programming Password from the Web Interface

You can change the default System Programming Password (1111) to any 4-digit number. To do so:

- Select **PBX / System Settings** to open the System Settings page.
- Enter the new password in the System Programming Password text box.
- Select **Submit**.

## Changing the System Programming Password from the Programming Extension

You can change the default System Programming Password (IIII) to any 4-digit number.

- From the programming extension, press the ⊗ key.
- Select **System Program**.
- Enter the System Programming Password.
- Select **Change password**.
- Select **Change** and enter the new 4-digit number.
- Select **Confirm**.

## Programming Extension

System programming from a telephone can only be carried out by the systemphone that is connected to the programming extension. The systemphone must be a BT 8568, BT 5330 BT 5320 or BT 5360. The BT 8528, with its small display screen is not capable of operating as the programming extension.

By default, the programming extension is extension 201, but this can be changed to any other extension if required. To configure a different programming extension you can use either the web interface or the programming extension.

## Changing the Programming Extension from the Web Interface

To change the programming extension, from the web interface top-level menu:

- Select **PBX / System Settings** to open the System Settings page.
- Select the new extension number in the Programming Extension dropdown box.
- Select **Submit**.

## Changing the Programming Extension from the Programming Extension

- From the programming extension, press the ⊗ key.
- Select **System program**.
- Enter the System Programming Password (IIII in default).
- Select **Program pos**.
- Select the extension you wish to define as the programming extension.  
The selected programming extension is marked by a solid square.
- Press the ⊗ key or scroll to Exit and select it to confirm the change.

## Account Codes

Account Codes allow you to associate four-digit codes with incoming and outgoing external calls. These codes are included in the Call Logging output.

Two different pages are used to manage Account Codes.

- From the PBX/System Settings page, you enable or disable Account Codes for all the system extensions.

- From the *Extensions/Extension Settings* page, you define whether the use of account codes is mandatory or optional for specific extensions. See 'Extension Configuration from the Web Interface: Advanced' on Page 53.

To enable or disable Account Codes for all the system extensions, from the web interface top-level menu:

- Select **PBX / System Settings** to open the System Settings page.
- Select **Enabled** or **Disabled** from the Account Codes dropdown list. The default is Disabled.
- Select **Submit**.

Account Codes can be programmed as either *Optional* or *Mandatory*.

- If *Optional*, users can choose whether or not to enter a code when making an external call.
- If *Mandatory*, users must enter a code before making an external call.

To configure extensions so that the use of Account Codes is *Mandatory*, use the *Extension Settings* page. See 'Extension Configuration from the Web Interface: Advanced' on Page 53 for further information.

## Night Service

*Night Service* allows you to configure your system to handle calls differently during the night or at specific times of the day, for example at lunch time. Using this feature you can:

- Change the extensions that ring on incoming calls.
- Change the Class of Service at each extension.
- Change the voice greeting heard by callers when the Auto Attendant or Courtesy Service answers them.

Using the web interface, you can configure the system so that it automatically activates *Night Service* at one or two pre-programmed times daily.

*Night Service* can also be turned on and off manually at any time from the Operator Position (Extension 201).

You configure individual lines and extensions to determine how your system will operate when *Night Service* is enabled. To do so, use the following web interface pages:

- **PBX / System Settings:** to configure *Night Service* to activate at specific times.
- **Lines/Incoming Ringing:** to set the extensions where incoming calls will ring during the night. The default is Extension group 1. See 'Configuring Lines from the Web Interface' on Page 39.
- **Lines/DDI Settings:** to set the night destination for specific DDI numbers. The default is Extension group 1. See 'Configuring DDI Numbers from the Web Interface' on Page 46.
- **Lines/Caller ID:** to set the night destination for specific Caller IDs. The default is Extension group 1. See 'Caller ID Routing' on Page 48.
- **Extensions/Class of Service:** to set the class of service for extensions at night. See 'Defining Extension Class of Service from the Web Interface' on Page 65.
- **Group/Class of Service:** to set the class of service for groups at night. See 'Defining Group Class of Service from the Web Interface' on Page 66.
- **PBX/Door Entry Settings:** to set the extension that the Door Intercom will ring during the night. See 'Programming Door Intercom from the Web Interface' on Page 38.
- **PBX/Timers:** to set the length of time before Auto Attendant answers a call during the night. See 'Timers' on Page 32.

## Activating and Cancelling Night Service from the Web Interface

To activate or deactivate Night Service from the web interface:

- Select **PBX / System Settings** to open the System Settings page.
- Select **Enabled** or **Disabled** from the Night Service dropdown list. The default is **Disabled**.

Programming times for Night Service to automatically turn on and off

- Enter the time Night Service Start **T** is to start in the format **HHMM**
- Enter the time Night Service End **T** is to end in the format **HHMM**
- The system allows you to enter two Start/End times in a 24 hour period.
- Select **Submit**.

## Turning Night Service On from the Operator Extension (Extension 201)

- Select **Night Service** on the idle screen of extension 201.

The option to turn Night Service Off is presented on the top of the idle screen.

Note: Extension 201 is the only extension that can turn Night Service on and off.

The switch is automatically placed in Night Mode. The Idle displays of all systemphones show '(Night)' to indicate the system is operating in night mode.

## Turning Night Service Off from the Operator Extension (Extension 201)

- Select **Night svc off** on the idle screen of extension 201.

## Weekend Service

Weekend Service gives you the ability to configure your system to handle calls differently over the weekend. Weekend Service uses the configuration rules you have programmed for Night Service but ignores any Day Service/Night Service switching so the service will remain in night Service over the weekend.

Using the web interface, you can programme the system so that it automatically activates Weekend Service.

To turn Weekend Service On or Off from the web interface top-level menu:

- Select **PBX/System Settings** to open the System Settings page.
- Select **Enabled** or **Disabled** from the Weekend Service dropdown list.
- Select **Submit**.

## System Voicemail

System Voicemail acts like an answering machine. You can configure the system so that calls on particular lines or calls on all lines are answered by a system Voicemail box. You can use it to answer calls at lunch or at night or any time the PBX is not manned.

The operation of System Voicemail continues unchanged when the system is in Night Service.

## Changing the duration a call rings before it is answered by the System Voicemail

To change the elapsed time before a call is transferred to the System Voicemail, select PBX/Timers and enter a new time in the System Voicemail delay box. The default time is 10 seconds. See Page 31.

## Selecting the lines that are answered by the System Voicemail

In default no lines are programmed to be answered by the System Voicemail so the System Voicemail cannot be activated. The lines to be answered are programmed under the 'Lines' settings. Under 'Lines' select the line type, ISDN, Analogue or VoIP and in each case enable the Voicemail for each line that the System Voicemail will answer when it is activated. See page 40.

## Managing System Voicemail from the Web Interface


To turn the System Voicemail On or Off from the web interface:

- Select **PBX / System Settings** to open the System Settings page.
- Select **Enabled** or **Disabled** from the System Voicemail dropdown list.

It is recommended that you also change the System Voicemail password:

- Enter the new password in the 'System Voicemail Password' text box.

## Customising the System Voicemail greeting

- From any phone press the  key.
- Dial 0 as the mailbox number.
- Enter the mailbox password (1111 in default) and #.
- Select Mailbox Options and follow the prompts for recording a greeting.

## Activating the System Voicemail

When the lines that the System Voicemail is to answer are programmed, the prompt, Sys VM Box, appears on extension 201's idle menu. Select '**System VM Box**' to turn the System Voicemail on. The prompt 'System VM Box Off' is now displayed on the idle menu. Select it to turn the System Voicemail off.

## Mail box capacity (10-50)

Use Mailbox capacity to specify the maximum number of messages that can be stored in the voice mailbox of an individual extension, default is 50.

Note: The capacity of the System Voicemail is set at 200 and cannot be changed.

To do so, from the web interface top-level menu:

- Select **PBX / System Settings** to open the System Settings page.
- Enter a number between 10 and 50 in the Mailbox capacity textbox.
- Select **Submit**.

## Music On Hold Source

Music On Hold Source determines the sound that is heard by internal and external callers when they are placed on hold. Four options are available:

- **Silence.** Silence is returned to callers placed on Hold.
- **Tone.** An intermittent tone is returned to callers placed on hold.
- **Music:** this is integrated into the system. This music cannot be changed.
- **External:** To select music from an external source. This requires an external music-on-hold module connected to an external port. Refer to the Installation Guide for further information.

You can manage Music on Hold Source from the web interface or from the programming extension.

## Managing Music on Hold from the Web Interface

To select music, tone or silence, from the web interface top-level menu:

- Select **PBX / System Settings** to open the System Settings page.
- From the 'Music on Hold Source' dropdown list, select one of:
  - **Music:** To select the music provided with the system. This option is the default.
  - **Silence.** Silence is returned to callers placed on Hold.
  - **Tone.** An intermittent tone is returned to callers placed on hold.
  - **External:** To select music from an external source.
- Select **Submit**.

## Managing Music on Hold from the Programming Extension

- From the programming extension, press the ⊗ key.
- Select **System Program**.
- Enter the System Programming Password (1111 in default).
- Scroll until Music on Hold is displayed.
- Select **Music on hold**.
- To select music, tone or silence, select one of:
  - Internal Source:* To select the music provided with the system. This option is the default.
  - External Source:* To select music from an external source.
  - Tone on Hold:* An intermittent tone is returned to callers placed on hold.
  - Silence.* Silence is returned to callers placed on hold.

The solid square indicates the current programme setting.

## Storing Calls in the Calls Store

By default, the system keeps a record of all calls received, both answered and unanswered. You can change the setting so the system stores all unanswered calls only.

To specify that missed calls only are to be stored by the system, from the web interface top-level menu:

- Select **PBX / System Settings** to open the System Settings page.
- Select **Enabled** or **Disabled** from the 'Store all calls in the 'Calls store' dropdown list.
  - Enabled:* the system will store all external calls, both missed and answered. This option is the default. In call history, answered calls will be marked with an 'A'.
  - Disabled:* the system will store only missed external calls.
- Select **Submit**.

## Storing BT Sales, Service and Helpdesk Phone Numbers

*BT Sales, Service, and Helpdesk phone numbers are pre-programmed into the system to allow you to rapidly contact BT support.*

*They can be changed if necessary. To change the numbers, from the web interface top-level menu:*

- *Select **PBX / System Settings** to open the System Settings page.*
- *Enter the new Sales, Service or Helpdesk numbers in the appropriate textboxes.*
- *Select **Submit**.*

## Alternate Routing

*Alternate Routing, or Least Cost Routing (LCR), allows you to route calls over specific lines, or over a specific Network Provider. You can also choose to route the calls over different lines at various times of the day to take advantage of optimum call rates.*

*Use two different web interface pages to manage Alternate Routing:*

- *Use the PBX/System Settings page to:  
Enable Alternate Routing.  
Enable Alternate Routing Weekend Service.  
Set start and end times for Alternate Routing to be activated.*
- *Use the PBX/Alternate Routing page to configure the system to route different types of calls over specific lines. See 'Alternate Routing' on Page 29.*

## Enabling Alternate Routing from the Web Interface

*To turn Alternate Routing On or Off, from the web interface top-level menu:*

- *Select **PBX / System Settings** to open the System Settings page.*
- *Select **Enabled** or **Disabled** from the 'Alternate Routing' dropdown list.*
- *Select **Submit**.*

*To turn Alternate Routing Weekend Service On or Off, from the web interface top-level menu:*

- *Select **PBX / System Settings** to open the System Settings page.*
- *Select **Enabled** or **Disabled** from the 'Alternate Routing Weekend Service' dropdown list.*
- *Select **Submit**.*

*To specify the times Alternate Routing Service is to start and end, from the web interface top-level menu:*

- *Select **PBX / System Settings** to open the System Settings page.*
- *Enter the time Alternate Routing Service is to start in the format HHMM.*
- *Enter the time Alternate Routing Service is to end in the format HHMM.  
You can enter two Start/End times in a 24-hour period.*
- *Select **Submit**.*

## Alternate Routing Weekend service

*When enabled the Alternate Routing timebands, described above, are ignored over the weekend.*



## Setting codes and lines for the Alternate routing

To set up alternate routing, you associate input codes with the lines over which calls are to be routed, and with whatever network codes are necessary to route the call. Once alternate routing is activated, calls are automatically routed over the selected lines, and the network code is sent to the line before the telephone number. See 'Alternate Routing' on page 29.

## Accept on Busy

If you have ISDN or VoIP on your system, you can configure the switch to either accept or reject calls coming in from the network for busy extensions or busy groups. By default, calls are accepted and a Call Waiting signal is sent to the extension.

To turn Accept on Busy On or Off, from the web interface top-level menu:

- Select **PBX / System Settings** to open the System Settings page.
- Select **Enabled** or **Disabled** from the 'Accept on Busy' dropdown list.
- Select **Submit**.

## Telesecretary

Telesecretary is a feature that makes use of the names you have associated with DDI numbers.

If Telesecretary is enabled, when a systemphone rings, it displays 'Call for XYZ', where XYZ is the name associated with the DDI number being called.

A typical application is to have a different DDI number published for each partner in a professional partnership, and to programme the numbers to ring on a secretary's extension. With Telesecretary, the secretary can see who the call is for and can answer the call with "Hello, XYZ's office". If the call is transferred to XYZ, XYZ will see the caller number, or name if programmed.

This feature does not work on a standard analogue or DECT telephone. On these phones, when the call rings, is answered and transferred, the extension will see the CLI number (or name if programmed).

Before you can activate Telesecretary, you must first associate names with DDI numbers and programme the extension to ring for these numbers. See Page 46.

To turn Telesecretary on or off, from the web interface top-level menu:

- Select **PBX / System Settings** to open the System Settings page.
- Select **Enabled** or **Disabled** from the 'Telesecretary' dropdown list.
- Select **Submit**.

## Group Telesecretary

An option is also provided which allows a group name to be presented when a call is received via the Auto Attendant for the group.

When a caller dials a group when answered by the Auto Attendant and the Group Telesecretary option is turned on the call is presented as 'Call for XYZ' where XYZ is the name programmed for the group. If no name is programmed the call is presented as 'Call for Group x'.

This feature does not work on a standard analogue or DECT telephone. On these phones, when the call rings, is answered and transferred, the extension will see the CLI number (or name if programmed).

To name the groups refer to Page 61.

To turn Group Telesecretary on or off, from the web interface top-level menu:

- Select **PBX / System Settings** to open the System Settings page.

- Select **Enabled** or **Disabled** from the 'Telesecretary' dropdown list.
- Select **Submit**.

## SIP Service

If VoIP trunks or a Softphone are programmed on the system then this option is enabled.

To enable / disable SIP Service from the web interface top-level menu:

- Select **PBX / System Settings** to open the System Settings page.
- Select **Enabled** or **Disabled** from the 'SIP Service' dropdown list.
- Select **Submit**.

## System Hold LED Behaviour

When an external call is placed on hold the light associated with the line on the systemphones can be steady or flashing.

To change the behaviour of the light on Line Keys when a call is on hold:

- Select **PBX / System Settings** to open the System Settings page.
- Select **Flash** or **Steady** from the 'System Hold LED Behaviour' dropdown list.
- Select **Submit**.

## System Speed Dials

When system speed dial numbers are stored in the system, they are available to users at any extension in the system provided the class of service at that extension does not restrict the number from being dialled.

Note that even though Class of Service has been used to restrict an extension from directly dialling a number, Class of Service override allows that extension to access all system Speed Dial numbers. See Page 53.

You can store up to 999 system speed dial numbers and names. You have the option to associate the numbers with line groups so that the numbers can be dialled over specific lines.

You can enter system speed dial numbers from the web interface, or from any phone extension.

## Entering System Speed Dial Numbers from the Web Interface

The Speed Dial pages divide Speed Dial locations into groups of 100. These groups of 100 are further divided into ranges of 25 locations. The pages give you the option to:

- Enter a single new Speed Dial number.
- Enter multiple new Speed Dial numbers in one of the ranges.

To enter a single Speed Dial number, from the web interface top-level menu:

- Select **PBX / System Speed Dials / Add Entry** to open the Add Entry page. The next available location is displayed.
- Enter the name and number of the new Speed Dial entry.
- Select **Submit**.

If you wish to add many speed dials to the system you may import them from an existing text file. The file must be a plain text CSV (comma, separated value) file with one speed dial entry per row. The entry in the row should be of the format:

- <index>, <number>, <name>, <outgoing line group>
- *Index:* This is the speed dial entry index, a number between 001 and 999. This index will also be the speed dial number used to dial the entry (e.g. 4xxx, where xxx is the index).
- *Number:* This is the number that will be dialled. The number should not include any outgoing group prefix (i.e. 9 or 760-769).
- *Name:* This is the name of the person associated with the speed dial.
- *Outgoing line group:* This is the line group that will be used to dial the number. This is a number between 1 and 11).

To import a speed dial CSV text file:

- Select **PBX / System Speed Dials / Import/Export** to open the Import/Export page.
- Enter the location of file to be used to restore your system.  
Select **Browse** to select the file on your local machine, or type the file location in the 'Backup Archive' textbox.
- Select **Import speed dials**.

You may also export system speed dials to a CSV text file. This file can then be imported to another system.

To add multiple new speed dial numbers, from the web interface top-level menu:

- Select **PBX / System Speed Dials / System Speed Dial group**, where the group is one of the groups of 100 speed dial locations.  
A **System Speed Dials** page is opened giving you access to the selected 100 locations further divided into ranges of 25.
- Select the desired range from the top of the page.  
Speed dial numbers currently stored in the selected range is listed on the page.  
To delete a stored number, select the **X** button beside the number.
- Select **Create All Entries on this page** to open a page that allows you to enter 25 speed dial name and number entries.  
Enter the names and numbers.  
To delete a stored number, select the **X** button beside the number.
- Select **Submit**.

## Entering System Speed Dial Numbers from a telephone

- On a systemphone access the **Directory**:  
On a BT 8568 systemphone, press the **Directory** key  
On a BT 5330 or BT 5320 or BT 5360 systemphone, scroll through display screens and select **Directories**
- Select **System Entries**.
- Enter the system-programming password (1111 is the default.)
- Enter the Index number (**001 – 999**) to specify the location of the new number.
  - The Index number is simply the number assigned consecutively to each item in the speed-dial list.
- Enter the telephone number you wish to store, and select **Confirm**.
- Enter the name associated with the telephone number, and select **Confirm**.

Up to twenty digits may be stored in any location. A name of up to sixteen characters, including spaces, can be used for each entry.

- Select a line group if you wish to dial the number over a different line from the default - by default all numbers are dialled over Group 1, accessed by dialling 9. Press the **Hands-free key** to finish programming.

Note: It is not possible to add system speed dial entries from a BT 8528 systemphone, Q DECT telephone, Q phone or a compatible standard telephone.

## **Alternate Routing**

Alternate Routing allows you to route calls over specific lines, or over a specific Network Provider. You can also choose to route the calls over different lines at various times of the day for optimum call rates.

To set up alternate routing, you associate input codes with the lines over which calls are to be routed, and with whatever network codes are necessary to route the call. Once alternate routing is activated, calls are automatically routed over the selected lines, and the network code is sent to the line before the telephone number.

To configure the routes used for alternate routing:

- **Select PBX / Alternate Routing.**

The alternate routes are listed in groups of 10. There are a total of 50 alternate routes available. Select the range of routes you wish to configure.

- For the route you wish to configure:

In the "Digits Dialed" textbox enter the digits that will be used at the start of a phone number to identify the alternate route in the system.

In the "Replace with" textbox enter the digits that will replace the digits dialled in the phone number. If no digits are to be replaced you should use the same digits as the digits dialled textbox.

The "Preferred/ Exclusive" dropdown allows you to determine whether calls on this route must go out on specific lines or it is simply a preference. When set to "Exclusive" a call will fail if the lines are not available. When set to "Preferred" the call will select lines from another group if the preferred lines are not available.

Associated Line Groups allows you to associate the route with a particular set of lines.

Once you have configured alternate routing you should enable it via the PBX/System Settings page of the web interface. See 'Alternate Routing: Enable' on Page 26.

## Timers

A number of different system timers control the length of time the BT Quantum waits before performing actions. The Timers page allows you to change the settings of each of these system timers.

You can change timer settings from the web interface or the programming extension.

The following table lists the system timers, the allowed ranges, and default settings.

Timer	Allowed Range (seconds)	Default Setting (seconds)
Recall On Hold	1 – 1800	90
Recall On Transfer	1 – 600	30
Divert On No Answer	1 – 600	18
Call Park	1 – 600	180
Ring Back Time	1 – 600	30
System Voicemail Delay	1 – 600	10
Voicemail Message Length	30 – 600	60
Courtesy Delay	1 – 600	30
Open Door	1 – 600	5
Doorphone Ring Duration	1 – 600	30
Auto Attendant Start (Day)	1 – 600	1
Auto Attendant Start (Night)	1 – 600	1
Auto Attendant Dial Timer	1 – 5	2
Hunt Group Timer	1 – 600	15

**Recall on Hold:** The time that elapses before a call, which has been placed on hold, rings back the extension that put the call on hold.

**Recall on transfer:** The time that elapses before a call, which has been transferred and not answered, rings back the extension that attempted the transfer.

**Divert on No Answer:** The time that elapses before a call ringing at an extension with 'Divert On No Answer' set is diverted.

**Call Park:** The time that elapses before a call placed on 'Call Park' rings back the extension that parked the call.

**Ring Back Time:** The time an extension will ring when ring back has been invoked.

**System Voicemail Delay:** The time that elapses before an unanswered incoming call is presented with the system voice mail greeting.

**Voice Mail Message Length:** The maximum length of a message left in a mailbox.

**Courtesy delay:** The time that elapses before an unanswered incoming call is presented the courtesy message.

**Open Door:** The time that the Door Open relay will remain open following activation.

**Doorphone Ring Duration:** The time that extensions will ring when a call is made from the Door Intercom.

**Auto Attendant Start (Day):** When the system is in day mode, this is the length of time a call to the Auto Attendant will ring before the Auto Attendant answers the call.

**Auto Attendant Start (Night):** When the system is in night mode, this is the length of time a call to the Auto Attendant will ring before the Auto Attendant answers the call.

**Auto Attendant Dial Timer:** The delay allowed between dialling the first and second digit when dialling through the Auto Attendant.

**Hunt Group Timer:** The time a call will ring one extension in a Hunt Group before it is diverted to the next extension in the Hunt Group.

## Setting Timers from the Web Interface

To set system timers, from the web interface top-level menu:

- Select **PBX / Timers** to open the Timers page.  
The different system timers are listed.  
The current setting is displayed in the text box beside each timer.
- Enter the new setting for each timer you wish to change.  
See the table below for a list of timers, their default settings, and allowed ranges.
- Select **Submit**.

## Setting Timers from the Programming Extension

- From the programming extension, press the ⊗ key.
- Select **System Program**.
- Enter the System Programming Password.
- Scroll until **Timers** is displayed.
- Select **Timers**.
- Select the required timer to be changed.  
The current timer setting will be displayed briefly, then the allowed range will be displayed
- Enter the new duration. (See table above for allowed ranges).
- Select **Confirm**.

## Auto Attendant

Auto Attendant answers calls with a greeting, and allows callers to ring directly through to an extension or group if they know the extension or group number.

The Auto Attendant greeting can be configured to invite callers to dial:

- An extension number.
- A group number.
- A single-digit dial-through number. See 'single-digit dial-through' below.
- A two digit dial-through number, see multi-level Auto Attendant below.

The system includes the following pre-recorded greetings:

- When the system is in Day Service: 'Thank you for calling. If you know the extension number you wish to contact, please dial the number. If you require assistance, please wait or dial o.'

- *When the system is in Night Service: 'Thank you. There is no one available to handle your call at the moment. If you wish to contact a particular extension, please dial the number.'*

*You can customize the greetings using the programming extension.*

*You can also use pre-recorded greetings. See Page 12.*

*When callers receive the message they can dial:*

- *The extension number.*
- *The group number.*
- *The single-digit dial-through number.*
- *The multi-level dial through number.*
- *\* to access voicemail.*

*The system waits five seconds for the caller to dial the first digit. If a second digit is to be dialled it must be dialled within 2 seconds (default for the Auto Attendant Dial Timer) and a further four seconds for the third digit.*

*If digit 0, an incorrect digit or no digit is dialled, the call is presented to extension group 11. This group contains extension 201 in default. Five minutes later, the call is released if it is still unanswered. If # is dialled the call is presented to the destination programmed in the Incoming Ringing programming for the line. See page 45.*

*When the caller enters the extension number correctly, the extension will ring.*

*If the call is not answered within thirty seconds, the call is presented to the group or extension that is programmed in the incoming ringing programming for the line on which the call is received. (By default it rings group 1). Five minutes later, the call is released if it is still unanswered.*

- *If the extension is busy the call is camped on to the extension meaning the caller will hear busy tone and the extension will receive a Call Waiting signal.*
- *If Divert On Busy is programmed it is activated.*
- *If Divert On No Answer is programmed it is activated after the No Answer timer expires.*

*If a call is received on an Auto Attendant Line when the voicemail system is busy, the call rings as a normal call. If the voicemail system becomes free before the call is answered, the Auto Attendant answers the call and the caller hears the recorded greeting.*

## Single-digit Dial-through with Auto Attendant

Auto Attendant allows external callers to use a single digit to route calls to different extensions or extension groups. A customised recorded greeting can be used to list the digits required to reach the different extensions or groups.

If a single digit is dialled:

- Auto Attendant answers the call with the recorded message.
- The caller dials the required digit to reach the specific extension or group. After 2 seconds, the call is routed to the destination associated with the digit dialled. The following table lists the digits and their associated ring groups.

Digit dialled	Group to which Call is Routed
1	Group 20
2	Group 19
3	Group 18
4	Group 17
5	Group 16
6	Group 15
7	Group 14
8	Group 13
9	Group 12
0	Group 11

## Multi-level Dialling with Auto Attendant

A second level of single-digit dialling is available with Auto Attendant. It is called multi-level dialling.

The following example illustrates how you could use multi-level dialling with Auto Attendant.

- Auto Attendant answers the call with a recorded message that lists the digits required to reach each department in your organisation.
- The caller dials the first digit. A second recorded message is heard telling the caller to dial a second digit to reach a particular destination
- The caller dials the required digit to reach the specific extension or group. After 2 seconds, the call is routed to the destination associated with the digit dialled.

## Programming Auto Attendant

The following options are available to programme the various ways Auto Attendant can be activated.

- Select Lines / Incoming Ringing/ISDN or Analogue Exchange or VoIP and programme Day Call Answering and Night Call Answering as Auto Attendant for those lines that are to be answered by Auto Attendant. See page 46.
- Lines / DDI Settings and programme Day Call Answering and Night Call Answering as Auto Attendant for those dialled numbers that are to be answered by Auto Attendant. See page 46.
- Lines / Caller ID Routing and programme Day Call Answering and Night Call Answering as Auto Attendant for those calling numbers that are to be answered by Auto Attendant. See page 48.
- PBX / Timers / Auto Attendant Start (Day), Auto Attendant Start (Night) to set the length of time before Auto Attendant answers incoming calls during the day and/or during the night. By default, the calls will be answered within one second. See page 31.



- *PBX / Timers/Auto Attendant Timer to set the dialling delay between digits. See page 31.*

#### *Programming Multi-Level Auto Attendant*

*Multi-level dialling is activated when the voice prompts associated with multi-level Auto Attendant are programmed. If no multi-level Auto Attendant prompts are recorded, then single-level Auto Attendant is active. These prompts can be entered from the programming systemphone or pre-recorded prompts can be loaded onto the system.*

*The extension or group associated with the second level digit is programmed via the web interface. Note that a total of 9 second-level digits can be programmed. If no destination is configured for a second-level digit the call is routed to Extension group 1.*

### **Configuring Multi-Level Auto Attendant**

*There are two elements that must be programmed to activate the Multi Level Auto Attendant.*

- *The first is to record the Multi Level Auto Attendant greetings from the programming extension. The Multi Level feature is activated when these greetings are recorded.*
- *The second is to programme the destination to be called on the second dialled digit. This is programmed via the web interface under PBX/ Multi Level Auto Attendant,*

### **Recording the Multi Level Auto Attendant greetings from a systemphone**

- *From the programming extension, press the ⊗ key.*
- *Select **System Program**.*
- *Enter the System Programming Password (1111 in default).*
- *Select **Chng Greetings**.*
- *Select **Multi-level AA***
- *Select the greeting you wish to record:*  
*Greeting 1: to record the greeting heard when a caller has dialled '1' from the first level of Auto Attendant*  
*Greeting 2: to record the greeting heard when a caller has dialled '2' from the first level of Auto Attendant*  
*Greeting 3 – Greeting 9: to record the greetings heard when a caller has dialled '3 – 9' from the first level of Auto Attendant*
- *Select **Record Greeting**.*
- *When prompted, speak to record the new greeting, and Press #.*

*Note: If a greeting is not recorded for a digit then the single digit dial through is used for that digit. For example if greetings 1 and 2 are recorded that a second greeting is played when digits 1 and 2 are dialled. However digits 3 – 9 are routed to the single digit destination as described above. In all cases you can dial through to a group or extension by dialling the extension or group number once the second digit is dialled within two seconds of the first.*

### **Importing pre-recorded Multi Level Auto Attendant Greetings**

*A programming option is provided in **System / Firmware Update Phones and Voice Prompts / Multi Level Auto Attendant** to import pre-recorded prompts for Multi Level Auto Attendant. See page 12.*

## Programming the Multi Level Auto Attendant second digit destination

From the web interface top-level menu:

- Select **PBX / Multi Level Auto Attendant** to open the Multi-level Auto Attendant page.
- From the dropdown list beside each digit, select the extension or group the second digit will call.  
*A total of 9 digits can be used at the second-level of multi-level dialling. These 9 digits can be distributed among the destinations reached by the first level of digits.*
- Select **Submit**.

To programme the members of each group select **Extensions / Extension Groups**. See page 60.

## Courtesy Service

When you activate **Courtesy Service** on an exchange line, callers to the system are automatically answered with a greeting after a programmable period of time. The default wait period is 30 seconds. While the caller is receiving the greeting, the call continues to ring as an incoming call until it is answered by an extension. If the call is not answered within ten minutes it is disconnected.

You can use this service if you know there may be delays answering calls and you want to ensure that callers do not hang up before their calls are answered.

## Changing the duration a call rings before it is answered by the Courtesy Service

To change the elapsed time before a call is answered by the **Courtesy Service** select **PBX/Timers** and enter a new time in the **Courtesy delay** box. The default time is 30 seconds. See Page 31.

## Selecting lines that are answered by the Courtesy Service

In default no lines are programmed to be answered by the **Courtesy Service**. The lines to be answered are programmed in **Lines / Incoming Ringing** page. Under 'Incoming Ringing' select the line type, **ISDN, Analogue or VoIP**.

In the **Day Call Answering** box select **Courtesy Service** to activate the service on the line when the system is in day mode.

In the **Night Call Answering** box select **Courtesy Service** to activate the service when the system is in night mode.

Note: Calls programmed to ring groups or extensions based on the called number (DDI routed) or the Calling Number (CLI routed) are not answered here.

## Programming Courtesy Service to answer calls based on the DDI number called

**Courtesy Service** can be programmed to answer calls to DDI numbers.

Select **Lines / DDI settings / DDI 1-10** (for the first 10 DDI numbers).

Note: See page 46 for full details on DDI programming.

In the **Day Call Answering** box select **Courtesy Service** to activate the service when the DDI number is dialled in day mode.

In the **Night Call Answering** box select **Courtesy Service** to activate the service when the DDI number is dialled in night mode.

## Programming Courtesy Service to answer calls based on the calling number (CLI)

*Courtesy Service can be programmed to answer calls based on the calling number (CLI).*

*Select **Lines / Caller ID Routing / CLI 1-10** (for the first 10 CLI numbers).*

*Note: See page 48 for full details on Caller ID programming.*

*In the Day Call Answering box select **Courtesy Service** to activate the service when a call is received from the number in day mode.*

*In the Night Call Answering box select **Courtesy Service** to activate the service when a call is received from the number in night mode.*

## Customising the Courtesy Service greeting

*There are two default Courtesy Service Greetings provided with your system:*

- *When the system is in Day Service, if a call is not answered within the programmed time, the caller is given the following message: 'Thank you for calling. Your call will be answered shortly. Please hold.'*
- *When the system is in Night Service, if a call is not answered within the programmed time, the caller is given the following message: 'There is no one available to take your call at the moment. Please call back again during office hours.'*

*You may customise these greetings from the Programming Extension.*

- *From the programming extension, press the ⊗ key.*
- *Select **System Program**.*
- *Enter the System Programming Password (1111 in default).*
- *Scroll until **Chng greetings** is displayed.*
- *Select **Chng greetings**.*
- *Select **Crtesy svc day** or **Crtesy svc night** to record the Day Service and Night Service greetings respectively.*
- *Select **Record greeting**.*  
*You can also Replay or Delete the greeting from this page.*
- *When prompted, speak to record the new greeting, and press #.*

*If a recorded message is deleted, the default message is played to callers. You cannot delete the default message.*

## Importing pre-recorded Courtesy Greetings

*A programming option is provided in **System / Firmware Update Phones and Voice Prompts / Multi Level Auto Attendant** to import pre-recorded prompts for Courtesy Service. See page 12.*

## Door Intercom Settings

*You can equip your system with a BT Door Intercom. It includes a microphone and speaker, and a button which, when pressed, rings an extension or group depending on how the Door Intercom is programmed on your system.*

*With a Door Intercom fitted in your reception area, anyone visiting your premises can call when they arrive and you can speak to them before you let them in.*

*The system also features a door doorstrike relay output that can be used to operate a door opening mechanism. This allows you to open the door from an extension. You may purchase the doorstrike mechanism from BT, who will arrange for its installation.*

*There are three steps to configuring Door Intercom and Door Open on your system:*

- *Programme the extension to which the Door Intercom is connected. The Door Intercom must be connected to an analogue extension position and it replaces the extension*
- *Programme the extension or group that Door Intercom will ring during the day and during the night.*
- *Programme the extension (or extensions) that can open the door when Door Open is installed.*

*Using the PBX/Timers page, you can also set the length of time that extensions will ring when the Door Intercom button is pressed and the length of time that the door open relay will remain open following activation.*

## **Programming the Door Intercom from the Web Interface**

*There are two elements that are used to programme the Door Intercom.*

- *Use the PBX/Door Entry Settings page to programme the analogue extension the door Intercom is connected to. You also programme the extension or group that is rung by the Door Intercom.*
- *Use the Extensions/Extensions Settings page to programme the extensions that are allowed to open the door from their phones. A door opening mechanism must be installed on the door for this facility to operate.*

## **Enabling Door Intercom from the Web Interface**

*From the web interface top-level menu:*

- *Select **PBX / Door Entry Settings**.*
- *From the 'Door Entry Extension' dropdown list either:  
To enable Door Intercom, select the extension to which Door Intercom is connected or  
Select Disabled to disable the Door Intercom.*
- *Select **Submit**.*

*To programme which extension or group the Door Intercom will ring during the day:*

- *From the 'Door Entry Ringing Day' dropdown list, select the extension or group that the Door Intercom will ring during Day Service.*
- *Select **Submit**.*

*To programme Door Intercom to ring a group of extensions during the Night:*

- *From the 'Door Entry Ringing Night' dropdown list, select the extension or group that Door Intercom will ring during Night Service.*
- *Select **Submit**.*

## **Programming Extensions to Open the Door**

*Use the Extension's page to configure Open Door so specific extensions can open the door. Refer to 'Extension Configuration from the Web Interface. See Page 53.*

# Managing Lines

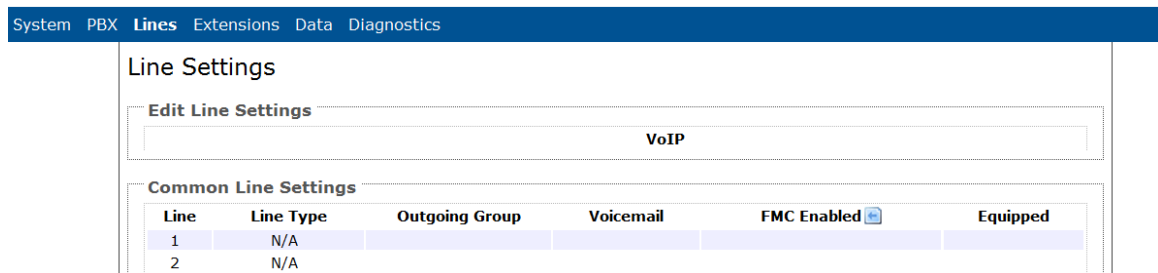
The system can be equipped with different types of telephone lines, Analogue, Basic Rate ISDN, PRI and VoIP lines.

The web management interface is used to change various settings on the lines and also to programme where calls ring.

Note: The exact menus you have available will depend on the specific line technologies in your system.

## Line Settings

To see the current Line Settings select **Lines** from the top banner. The following page is displayed: -



This page displays the common settings for each line.

## Configuring Lines

### Outgoing Call Handling

Exchange lines can be grouped together in up to eleven outgoing groups to allow you to control the use of lines. Each outgoing group has a separate code used to select lines in the group. By default, all lines are in outgoing group 1, accessed by dialling 9. The outgoing group codes are 9, and 760 – 769. The following table shows the codes used by each group to select lines for outgoing calls.

Group number	Outgoing Code
Group 1	9
Group 2	760
Groups 3 - 11	761 – 769

Programming options are available to associate lines with one or more outgoing groups, to enable or disable voicemail on lines, and to restrict specific lines from being used by FMC.

### Line Settings

Seven different web interface pages are used to configure lines:

- ISDN
- PRI
- Analogue Exchange
- VoIP

- Incoming Ringing
- DDI Settings
- Caller ID Routing

There are basic and advanced pages for each type of line:

**Basic:** The basic page lists the licensed lines of the selected type in your system. The line type and its associated outgoing group are shown. Also shown are voicemail, FMC, and equipped settings.

**Advanced:** The advanced page contains line technology specific settings.

## ISDN Settings (Basic Rate ISDN)

ISDN	Line	Outgoing Group	Voicemail	FMC Enabled	Equipped
1	1-2	Group 1	Disabled	Enabled	Enabled
2	3-4	Group 1	Disabled	Enabled	Enabled

To change the Basic Rate ISDN settings select **Lines / ISDN**.

The number of equipped Basic Rate ISDN cards is shown in the left hand column. Each card contains two basic rate interfaces each of which has two ISDN B-channels. The example above is for one ISDN Basic Rate card showing two basic rate interfaces (ISDN 1 and 2). Lines 1 and 2 are the two B-Channels on the first basic rate interface, and Lines 3 and 4 are the B-Channels on the second Basic Rate interface.

- From the 'Outgoing Group' dropdown list, select the outgoing line group with which the selected access is to be associated.
- To enable/disable the System Voicemail for the two B-channels on each Basic Rate Interface, select **Enabled** or **Disabled** from the 'Voicemail' dropdown list. See System Voice mail on page 23.
- To allow a line use FMC, select **Enabled** or **Disabled** from the 'FMC Enabled' dropdown list.  
FMC parallel ringing requires the use of two lines, one for the incoming call to the extension, and one for the outgoing call to the mobile phone. Selecting the lines here determines which lines are used for the outgoing calls to the mobile. If FMC disabled is selected the line will not be used for calls to the mobile and is reserved for normal use. See also FMC Settings on page 70.
- Select **Enabled** or **Disabled** from the 'Equipped' dropdown list:  
Enabled: to specify that the line is equipped, that is that there is a cable connected, and that BT has provided a line.  
Disabled: to specify that the line is not equipped. If a line is not equipped, and you do not specify that it be disabled, the system will attempt to use the line, resulting in failed call attempts.

## ISDN Advanced settings

If your system is equipped with ISDN, your BT engineer has configured your ISDN system during installation. It is recommended that you do not change the existing advanced settings.

Select **Advanced Settings**. Two options are displayed.

## Point to Point (P-P) or Point to Multipoint (P-MP)

- Specify whether the system is point-to-point (P-P) or point-to-multipoint (P-MP).

Note: A system reset is required to activate this setting.

**Caution:** Your BT Engineer will ensure your ISDN Lines are correctly configured as P-P or P-MP. If the setting does not match the ISDN network setting you will be unable to receive and make calls.

## Call Deflect

Call Deflection is a service available from your network provider. It allows you to reroute calls from an incoming line.

This option can be set on if the Call Deflection network service is provided on the appropriate lines. When activated, network Call Deflect reroutes external diversions that have been set up by extensions or groups, back to the network. The advantage is that diverting calls to an external number using the Call Deflect service frees the line on the system.

Refer to the User Guide for instructions on how to set up external call diversions.

**Caution:** It is possible that an extension may misuse Call Deflect.

## Additional options available on ISDN Lines

The following ISDN extension settings are programmed from the Extensions Settings page of the web interface:

- Assign DDI numbers to extensions. See page 46.
- Prevent display of numbers when answering a call on specific extension (COLR). See page 53.
- Prevent display of numbers when making a call on a specific extension (CLIR). See page 53.

## PRI Advanced

PRI is an ISDN technology that assigns all lines against a single access. PRI can have up to 30 lines (or channels as they are known). Typically a system will use less than the 30 channels. This is known as fractional PRI. On BT Quantum the maximum number of PRI channels that can be used is 16.

The PRI page has a single configuration setting for the number of equipped channels. This will generally be equal to the number of PRI licences that you have on the system. However, if you have less PRI channels available you can decrease this number to match the number of channels available.

## Analogue Exchange Line settings

To change the Analogue line settings select **Lines / Analogue Exchange**.

Index	Line	Outgoing Group	Voicemail	FMC Enabled	Equipped
1	5	Group 1	Disabled	Disabled	Enabled
2	6	Group 1	Disabled	Disabled	Enabled
3	7	Group 1	Disabled	Disabled	Enabled
4	8	Group 1	Disabled	Disabled	Enabled

The example above is for one Analogue Exchange line card equipped on the system. It has four analogue exchange line interfaces shown as Index 1 – 4. The lines appear as Lines 5 – 8 on the system. These line numbers are 5-8 because in the examples shown here lines 1-4 are the ISDN basic rate interfaces in the ISDN Line settings above.

- From the 'Outgoing Group' dropdown list, select the outgoing line group with which the selected line is to be associated.
- To enable/disable the System Voicemail for a line, select **Enabled** or **Disabled** from the 'Voicemail' dropdown list. See System Voice mail on page 23 as the lines that the system voicemail is active is programmed here.
- The 'FMC Enabled' option is not configurable for analogue lines. Analogue lines cannot be selected to make the outgoing call to a mobile. The calls to mobiles when FMC is active are placed over ISDN or VoIP lines only.
- Select **Enabled** or **Disabled** from the 'Equipped' dropdown list:  
Enabled: to specify that the line is actually connected and working.

## Analogue Exchange Advanced Settings

Use the advanced Analogue Exchange page to define the characteristics of your analogue lines. Using this page, you enable or disable Guarded Clear, CLI Detection, Dial tone Detection, and Featureline Operation.

From the web interface top-level menu:

- Select **Advanced Settings**.

### Guarded Clear

- Select **Enabled** or **Disabled** from the 'Guarded Clear' dropdown list to enable or disable Guarded Clear. This is the default setting and must match the exchange setting.

---

**Caution:** Your BT Engineer will ensure your Analogue Lines are correctly configured as Guarded Clear or not. If the setting does not match the telephone network setting calls may take up to two minutes to clear down.

---

### CLI Detection

You must subscribe to the BT CDS service on each line to receive the calling number information on incoming calls. When this service is activated on the lines you then enable CLI detection so that the calling number is presented on the phones ringing for the incoming call.

- Select **Enabled** or **Disabled** from the 'Caller ID Detection' dropdown list to enable or disable Caller ID Detection.

---

**Caution:** Your BT Engineer will ensure your Analogue Lines are correctly configured for CLI detection. If the setting is enabled and CDS is not supported on the line there will be a delay in ringing for Incoming calls. If the setting is disabled and CDS is supported on the line the calling number information will not be shown on the ringing telephones

---

### Dialtone detection

The system automatically detects network dial tone when placing outgoing calls. There may be some lines where this automatic detection needs to be disabled. This setting should only be changed on instruction from BT.

- Select **Enabled** or **Disabled** from the 'Dial Tone Detection' dropdown list to enable or disable Dial Tone Detection.

### Featureline Operation

If the analogue line on your system is a Featureline this setting automatically inserts the line access code 9 when calls are made over this line.



- Select **Enabled** or **Disabled** from the 'Featureline Operation' dropdown list to enable or disable Featureline Operation.

## VoIP Settings

The Basic VoIP settings page lists all the VoIP lines that are licensed in the system. To change the Basic settings select **Lines / VoIP**.

System PBX **Lines** Extensions Data Diagnostics

### VoIP - Basic

Basic Settings
Advanced Settings

**Edit Settings**

VoIP	Line	Outgoing Group	Voicemail	FMC Enabled	Equipped
1	9	Group 1	Disabled	Disabled	Enabled
2	10	Group 1	Disabled	Disabled	Enabled
3	11	Group 1	Disabled	Disabled	Enabled
4	12	Group 1	Disabled	Disabled	Enabled
5	13	Group 1	Disabled	Disabled	Enabled
6	14	Group 1	Disabled	Disabled	Enabled
7	15	Group 1	Disabled	Disabled	Enabled
8	16	Group 1	Disabled	Disabled	Enabled
9	17	Group 1	Disabled	Disabled	Enabled
10	18	Group 1	Disabled	Disabled	Enabled
11	19	Group 1	Disabled	Disabled	Enabled
12	20	Group 1	Disabled	Disabled	Enabled
13	21	Group 1	Disabled	Disabled	Enabled
14	22	Group 1	Disabled	Disabled	Enabled
15	23	Group 1	Disabled	Disabled	Enabled
16	24	Group 1	Disabled	Disabled	Enabled

The example has sixteen VoIP lines licensed shown as VoIP 1 – 16. The lines appear as Lines 9 – 24 on the system. These line numbers are 9-19 because in the examples shown here lines 1-4 are the ISDN basic rate interfaces and 4-8 are Analogue Lines.

- From the 'Outgoing Group' dropdown list, select the outgoing line group with which the selected line is to be associated.
- To enable/disable the System Voicemail for a line, select **Enabled** or **Disabled** from the 'Voicemail' dropdown list. See System Voice mail on page 23 as the lines that the system voicemail is active is programmed here.
- To allow a line use FMC, select **Enabled** or **Disabled** from the 'FMC Enabled' dropdown list.  
FMC parallel ringing requires the use of two lines, one for the incoming call to the extension, and one for the outgoing call to the mobile phone. Selecting the lines here determines which lines are used for the outgoing calls to the mobile. If FMC disabled is selected the line will not be used for calls to the mobile and is reserved for normal use. See also FMC Settings on page 70.
- Select **Enabled** or **Disabled** from the 'Equipped' dropdown list:  
**Enabled:** to specify that the line is equipped.

Use the advanced VoIP Settings page to configure your Voice over IP (VoIP) lines. Using this page you can also define VoIP server profiles.

From the web interface top-level menu:

- Select **Lines / VoIP** to display the VoIP page.
- Select **Advanced Settings**.

The top half of the page displays the status of each VoIP account as either Registered or Not Registered.

## VoIP Settings

Basic Settings			Advanced Settings		
<b>VoIP Accounts</b> It may take up to several minutes for changes to VoIP Accounts to take effect. The status of accounts may not be updated immediately.					
Account	Line	Username (Max 32 characters)	Password	Profile	Status
001	9	<input type="text"/>	<input type="text"/>	Profile 1	Registered
002	10	<input type="text"/>	<input type="text"/>	Profile 1	Registered

You can configure your VoIP accounts manually. To do so:

- If Server Profiles have not been configured, use the bottom half of the page to enter the server profile data as provided by BT.
- Select the account you wish to configure.
- Enter the Username and Password provided by BT.
- For each account you wish to register, select a Server Profile for the account from the Profile dropdown list.

Server Profiles						
Profile	Domain	Registrar Server Proxy	Registrar Server Port	Expiry Time (seconds)	Outbound Server	Outbound Server Port
1	<input type="text"/>	<input type="text"/>	5060	3600	<input type="text"/>	5060
2	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Typically the same profile would be associated with all VoIP accounts. The profile information is provided by BT.

- Select **Submit**.

## **Incoming Call Handling - Incoming Ringing**

*Incoming calls can be programmed to ring:*

- *Individual extensions.*
- *An Extension Group: a group of extensions that will all ring when there is an incoming call for the group. See 'Extension Groups' on Page 60.*
- *A Hunt Group: a group of extensions that will ring in sequence until the incoming call for the group is answered. See 'Extension Groups' on Page 60.*
- *Auto Attendant: answers calls with a recorded greeting and allows callers to ring directly through to an extension or group. See 'Auto Attendant' on Page 32.*
- *Courtesy Service: answers calls with a greeting if not answered after a programmed length of time. See 'Courtesy Service Source' on Page 36.*

*Calls can be programmed to ring the various destinations based on the following,*

- *The Line the call is received on. This is programmed in the Lines / Incoming ringing on page 45. In default all incoming calls ring Extension Group 1.*
- *The DDI number dialled by the caller. DDI numbers are available on ISDN and VoIP lines only.*
- *The callers telephone number. This is Caller ID Routing. The Caller ID is provided on ISDN and VoIP lines and is available on analogue lines once the CDS service is subscribed to.*

*If an incoming call matches more than one routing policy type then Caller ID policies will take precedence.*

### **Incoming Calls to an Extension**

*The handling of incoming calls to individual extensions is as follows:*

- *When an incoming call is programmed to ring an individual extension, all diverts programmed for the extension are acted on. This includes both internal and external diverts.*
- *The call can be forwarded to the personal mailbox of the extension.*
- *If Do Not Disturb is activated by the extension the call is presented to extension 201. Extension 201 cannot activate Do Not Disturb.*
- *When an incoming call on an analogue line is presented to an extension that is busy, the call is queued to the extension and Call Waiting is activated.*
- *For calls on ISDN/VoIP lines, if the extension is busy there is a programming option that allows the call to be accepted or rejected. If the call is accepted, the call is queued to the extension and Call Waiting is activated. See 'Accept on Busy' on Page 27.*

### **Incoming calls to a group**

*The handling of incoming calls to a group is as follows:*

- *When an incoming call is programmed to ring a group, all diverts programmed for the group are acted on. This includes both internal and external diverts. If an extension in the group has diverts programmed they are ignored for all calls to the group.*
- *The call can be forwarded to the group mailbox.*
- *When an incoming call on an analogue line is presented to a busy group, the call is queued to the group and Call Waiting is presented to all members of the group.*

- For calls on ISDN/VoIP lines, if the group is busy there is a programming option that allows the call to be accepted or rejected. If the call is accepted, the call is queued to the group and Call Waiting is activated. See 'Accept on Busy' on Page 27.

## Incoming Ringing

*Incoming Ringing allows you to determine where calls received on individual lines will ring. By default calls will ring Extension Group 1. The Incoming Ringing page is divided up with pages for each of the line technologies on your system (ISDN, PRI, Analogue Exchange, VoIP) along with an overview page that allows you to see at a glance the line routing for all lines. To change the incoming ringing behaviour for a particular line:*

- Select the line type of the line you wish to programme (ISDN, PRI, Analogue Exchange or VoIP).

*This will open the edit page for that technology. For the selected line:*

- From the 'Incoming Ringing Day' dropdown list, select the extension or extension group that is to ring for calls received on the line.
- From the 'Incoming Ringing Night' dropdown list, select the extension or extension group that is to ring for calls received on the line.
- From the 'Day Call Answering' dropdown list, select the required option:
  - **Disabled:** callers on the line will be connected directly to the associated extension group or extension.
  - **Auto Attendant:** the Auto Attendant will answer callers on the line.
  - **Courtesy:** callers on the line will hear the Courtesy Greeting.
- From the 'Night Call Answering' dropdown list, select the required option:
  - **Disabled:** callers on the line will be connected directly to the associated extension group or extension.
  - **Auto Attendant:** the Auto Attendant will answer callers on the line.
  - **Courtesy:** callers on the line will hear the Courtesy Greeting.
- Select **Submit**.

## DDI Routing

*DDI Routing is a service whereby calls are programmed to ring an extension or group based on the number dialled by the caller.*

*Typical ways of using this facility:*

- Publicising one of these DDI numbers as a fax number, then routing calls received on this number through to a fax machine connected to an extension.
- Users publicise their individual numbers so that callers ring directly through to their extensions.
- When you make an outgoing call DDI numbers are sent to the network as the Calling Line Identification (CLI) for presentation to the called party. You can change the number sent by programming the extension to send a particular DDI number. See page 53.
- You may associate names with your DDI numbers and use the Telesecretary feature to have the name displayed for incoming calls. See page 27.

*You can programme your system to recognise up to one hundred DDI numbers. Each DDI number is given a reference number from DDI 001 to DDI 100. The reference number is assigned to provide a simple way of referring to a specific DDI number. It has no other meaning; it is simply the position of the number in the list.*

*To configure up to 100 DDI numbers:*

- Select **Lines / DDI Routing** to open the DDI Routing page.

The DDI numbers are listed in groups of 10.

System PBX **Lines** Extensions Data Diagnostics

### DDI Settings

**DDI Ranges**

1-10 11-20 21-30 31-40 41-50 51-60 61-70 71-80 81-90 91-100

**DDI Settings**

DDI	Number (Max 20 digits)	Name (Max 16 characters)	Accept on Busy	Day Destination	Night Destination	Day Call Answering	Night Call Answering
021			Enabled	Group-001	Group-001	Disabled	Disabled
022			Enabled	Group-001	Group-001	Disabled	Disabled
023			Enabled	Group-001	Group-001	Disabled	Disabled
024			Enabled	Group-001	Group-001	Disabled	Disabled
025			Enabled	Group-001	Group-001	Disabled	Disabled
026			Enabled	Group-001	Group-001	Disabled	Disabled
027			Enabled	Group-001	Group-001	Disabled	Disabled
028			Enabled	Group-001	Group-001	Disabled	Disabled
029			Enabled	Group-001	Group-001	Disabled	Disabled
030			Enabled	Group-001	Group-001	Disabled	Disabled

**Voicemail DDI**

Voicemail DDI Number (Max 20 digits)

- Select the range of numbers you wish to configure.

For each DDI:

- Enter the DDI number in the text box.
- Enter the name associated with the number, to a maximum of 16 characters.  
This is the name that will be used by Telesecretary if enabled on your system. See 'Telesecretary' on Page 27.
- Select **Enabled** or **Disabled** from the Accept on Busy dropdown list to either accept or reject calls coming in from the network for the DDI number when the extension or group is busy.
- Select the Day Destination for the DDI number from the dropdown list.  
The list contains all licensed extensions and Extension Groups 1-20. The default is Extension Group 1.
- Select the Night Destination for the DDI number from the dropdown list.  
The list contains all licensed extensions and Extension Groups 1-20. The default is Extension Group 1.
- Select the **Day Call Answering** option from the dropdown list.  
**Disabled:** an incoming call to the DDI number will be sent directly to the Day Destination.  
**Auto Attendant:** the Auto Attendant will answer an incoming call to the DDI number.  
**Courtesy:** an incoming call to the DDI number will hear the Courtesy Greeting.
- Select the **Night Call Answering** option from the dropdown list.  
**Disabled:** an incoming call to the DDI number will be sent directly to the Night Destination.  
**Auto Attendant:** the Auto Attendant will answer an incoming call to the DDI number.  
**Courtesy:** an incoming call to the DDI number will hear the Courtesy Greeting.
- Select **Submit**.

## **Voicemail DDI**

*An option is also provided for a Voicemail DDI. The DDI number entered here is answered by the voicemail allowing users to access their voicemail boxes remotely when they call this number.*

## **Caller ID Routing**

*Caller ID Routing is a service whereby you can programme calls to ring an extension or group based on the calling number. A total of 30 numbers can be programmed.*

*To specify the destination for each Caller ID:*

- *Select **Lines / Caller ID Routing** to display the Caller ID Routing page.  
The Caller IDs are listed in 3 groups of 10.*
- *In the text boxes, enter the Number and Name of the Caller ID you wish to configure.*
- *Select the Day Destination extension or group for the Caller ID from the dropdown list.*
- *Select the Night Destination extension or group for the Caller ID from the dropdown list.*
- *Select the Day Call Answering option for the Caller ID.  
Disabled: the Caller ID will be sent directly to the Day Destination extension or group.  
Auto Attendant: the Auto Attendant will answer the Caller ID.  
Courtesy: the Caller ID will hear the Courtesy Greeting.*
- *Select the Night Call Answering option for the Caller ID.  
Disabled: the Caller ID will be sent directly to the Night Destination extension or group.  
Auto Attendant: the Auto Attendant will answer the Caller ID.  
Courtesy: the Caller ID will hear the Courtesy Greeting.*
- *Select **Submit**.*

# Managing Extensions

Use the web interface Extensions pages to configure the extensions. The following pages are available:

- *Extension Wizard*
- *Extension Settings*
- *Extension Diverts*
- *Extension Groups*
- *Extension Login or Logout in Groups*
- *Extension Class of Service*
- *Group Class of Service*
- *O/G Line Restrictions*
- *Class Codes*
- *Group Divert*
- *IP Paging Group*
- *FMC Settings*
- *DECT Registration*
- *Unified Messaging*
- *Extension Licences*
- *Flexible Numbering*
- *Paired Extensions*

## Extension Wizard

The Extension Wizard allows you to examine and set a range of programmable options across a range of extensions.

System PBX Lines **Extensions** Data Diagnostics

### Extensions Wizard

The Extensions Wizard allows the user to view or update certain extension options across a range of extensions. With the wizard it is possible to change particular extensions by setting their specific drop down options. There are also options to change groups of extensions (in groups of 8) or change all extensions at the same time.

Please select the option you would like to view/update.

201	202	203	204	205	206	207	208
<input type="text" value="Standard"/>	<input type="text" value="Standard"/>	<input type="text" value="Standard"/>	<input type="text" value="Standard"/>	<input type="text" value="Standard"/>	<input type="text" value="Standard"/>	<input type="text" value="Standard"/>	<input type="text" value="Standard"/>
Digital	Digital	Digital	Digital	Digital	Digital	Digital	Digital

Extension 201 - Extension 208:

209	210	211	212	213	214	215	216
<input type="text" value="Standard"/>	<input type="text" value="Standard"/>	<input type="text" value="Standard"/>	<input type="text" value="Standard"/>	<input type="text" value="Standard"/>	<input type="text" value="Standard"/>	<input type="text" value="Standard"/>	<input type="text" value="Standard"/>
Digital	Digital	Digital	Digital	Analogue	Analogue	Analogue	Analogue

Extension 209 - Extension 216:

Select the option you wish to programme or examine from the first drop down menu. In the example shown above the extension voice mail option was selected. The following options can be selected.

- Voice mail
- Voicemail password
- Do Not Disturb
- Tone Protection
- Open Door
- Permanent CLIR
- COLR
- Call Logging
- System SPD override COS
- Account Codes
- Room Monitor
- Allowed to Page
- Protect from Paging
- Background music
- Hot Line
- SIP Password
- Specific Outgoing DDI
- Reminder Call Time
- Auto Answer
- 5360 phone

Select the option from the top drop down box.

Select **Show extensions**.

All extensions are then displayed showing the status of the selected option.

You can change individual extensions by changing the data in the box associated with each extension.

You can also change each row of eight extensions by selecting the option in the Extension xxx – Extension xxx drop down box.

Select **Submit** to programme the changes.

## **Extension Settings**

In addition to the Extension wizard settings can also be changed for Individual extensions using the Extension Settings page.

You can also use the programming extension for some of the Extension configuration settings. See 'Extension Configuration from the Programming Extension' on Page 56 for instructions on extension setting from the programming extension.

## **Extension Configuration from the Web Interface: Basic**

From the web interface top-level menu:

- Select **Extensions / Extension Settings** to display a list of the licensed extensions, in groups of 8.
- Select the group of extensions you wish to configure.



The Extension Settings page is displayed. The page shows the phone type and the default extension number. If flexible numbering is in place, the flexible number is displayed. See 'Flexible Numbering' on Page 70 for further information.

Use this top-level page to give the extension a name, and to enable voicemail service for the extension. Links from the page allow you to further configure each extension.

For each extension:

- To associate a name with the extension, enter the name in the 'Name' column, to a maximum of 16 characters.
- By default, extensions have voicemail disabled. To enable voicemail for the extension, from the 'Voice Mail' dropdown list:  
Select **Standard** to enable standard voicemail.  
Select **Information Only** to enable a service that answers the call and plays a greeting, but does not allow the caller to record a message.

For further information about extension voicemail, see 'Extension Voicemail Configuration' below.

- For a BT 5320 or BT5330 or BT 5360 IP phone, enter the IP phone MAC address in the 'MAC Address' text box. This address is on a label on the base of the phone.  
If the phone type is IP Phone, the MAC Address box is left blank, the phone is assumed to be a softphone.
- Select **Submit**.

Select one of the links from the page if you wish to further configure each extension:

- **Speed Dial:** to enter Speed Dial numbers.
- **Key Programming:** to programme the systemphone extension's programmable keys.
- **Advanced:** to complete advanced extension programming. See below.

## Extension Voicemail Configuration

To modify your extension voicemail configuration, you use the following web interface pages:

- Extension/Extension Settings to enable voicemail for an extension and to choose the type of voicemail for each extension as described above.
- Extension/Extension Settings to change the voicemail password for an extension. This can also be changed from the telephone when you access the mailbox.
- PBX/Timers to change the elapsed time before a call is answered by voicemail and to change the length of message allowed in a voicemail. See 'Timers' on Page 31.
- Extensions/Extension Groups to configure voicemail for extension groups. See 'Extension Groups' on Page 61.
- Voicemail DDI number to programme a number that users can dial to remotely access the voicemail. See Page 48.

## Extension Key Programming

You can use the web interface to programme the keys of your systemphones. The number of supported keys will depend on the type of phone and whether a Programmable Key Module (PKM) is equipped on a Digital 8528 or Digital 8568 or 5330 IP phone. Two modules are available, one with 12 programmable keys and one with 48. If a PKM is equipped it must first be programmed in the Advanced settings page See Page 53.

The 5360 IP phone has 15 programmable keys when installed. However there is a setting in the Advanced Setting page for IP phones to set the phone as type 5360. When this is set the phone has 48 programmable keys. See Page 53.



When re-programming a key it is important that the both the box containing the feature and the Data box associated with the feature are both changed.

To display the Key Programming menu:

- Select **Extensions / Extension Settings** to display a list of the extensions in groups of 8.
- Select the group of extensions that includes the telephone you wish to programme.
- Select the **Keys** link for your selected extension. The Key Programming page is displayed.

To program a key to perform a specific function:

- Select the key you wish to programme.
- Select the required function from the dropdown list beside the key number.
- For functions that require additional data, enter the data in the Data textbox.
- Select **Submit**.

You can programme the keys with the following facilities:

- Select **External** to programme the key to dial a specific external number. Enter the external number in the Data text box.
- Select **Extensions** to programme the key to dial a specific extension number. Enter the extension number in the Data text box. You can also programme a Group onto a key.
- Select **Line** to programme the key to select a specific line for an external call. Enter the line number for the line in the Data text box.
- Select **Divert All Calls** to programme the key to redirect all calls for this extension to another extension, to an external number, or to voicemail. Enter the destination phone number in the Data text box. Enter the Code 710 to divert calls to voicemail, the extension number to divert to an extension and 9 followed by the external number to divert externally.
- Select **Divert when Busy** to programme the key to redirect calls received when the extension is busy to another extension, to an external number, or to voicemail. Enter the destination phone number in the Data text box. Enter the Code 710 to divert calls to voicemail, the extension number to divert to an extension and 9 followed by the external number to divert externally.
- Select **Divert on No Answer** to programme the key to redirect calls received when there is no answer at the extension to another extension, to an external number, or to voicemail. Enter the destination phone number in the Data text box. Enter the Code 710 to divert calls to voicemail, the extension number to divert to an extension and 9 followed by the external number to divert externally.  
Refer to the User Guide for more information.
- Select **Voice Call** to programme the key to make a call over the speaker of an individual systemphone.  
If the systemphone is page-protected the voice call will fail.
- Select **Voicemail Access** to programme the key to connect to your voicemail.
- Select **Feature Code** to programme the key to activate a feature using a feature code. Enter the feature code in the Data text box. See 'Feature Access Codes' in Appendix II.

- Select **Do Not Disturb** to programme the key to set the extension so callers get a busy tone, and an on-screen text message indicating that you do not wish to be disturbed.
- Select **Page All Extensions** to programme the key to page all systemphone extensions. Only systemphones that are page-protected will not be paged.
- Select **Page Public Address** to programme the key to make an announcement over the PA amplifier.
- Select **Extension Lock** to programme the key to lock the extension to prevent unauthorised users from making external calls.  
You use a personal code to lock, unlock, or to make calls from a locked extension. The default personal code for all extensions is 123, but each extension can change it.
- Select **Reminder Call** to programme the key to set the extension to ring at a given time. Reminder calls must be set daily and cannot be set more than 24hrs ahead.
- Select **Open the Door** to programme the key to operate the door opening mechanism if one is installed.
- Select **Reset the Phone** to programme the key to reset your extension and cancel all the following features if they have been set: Do Not Disturb, Divert All Calls, Call Back, and Reminder Call.
- Select **Call Park** to programme the key to place a call in a special Hold state so that the call can be retrieved from any extension in the system.
- Select **Forward Recall** to programme the key to send a Forward Recall signal. Forward Recall may be required to use certain network services on standard analogue exchange lines.

## Extension Personal Speed Dials

The Extension Personal Speed Dial page allows you to enter up to 50 personal speed dial numbers accessible from a specific extension.

To enter a new name and number, from the web interface top-level menu:

- Select **Extensions / Extension Settings** to display a list of extensions, in groups of 8.
- Select the range of extensions that includes the extension from which you will use speed dial.
- Select **Speed dials** from the row beside the specific extension. The 'Speed dials' link opens a subpage that allows you to enter Speed Dial numbers for that extension.

The page displays the first 1 to 10 Speed Dial numbers for that extension. To open a different range of numbers, select a range from the 'Personal Speed dial Ranges' section of the page.

- In the next unused space on the 'Personal Speed Dials' list, enter the new name and number in the empty textboxes.
- Select **Submit**.

## Extension Configuration from the Web Interface: Advanced

To complete advanced configuration of your extensions:

- Open the Extension Settings page and complete the basic configuration as described in the previous procedure.
- For each extension you wish to configure, select the **Advanced** link. This opens a subpage that allows you to enable/disable functionality for the selected extension.
- Configure each of the features described below.
- Select **Submit** to complete programming after configuring the features.

**Lock Code:** Enter a password to be used to unlock the extension when Extension Lock is enabled. The default personal code for all extensions is 123, but each extension can change it.

**Extension Lock:** Select **Enabled** or **Disabled** from the dropdown list. If Extension Lock is enabled, users must enter a personal code before they can make an external call

**Voicemail Password:** Enter the password to be used to access voicemail for the extension. The default is IIII.

**Tone Protection:** Select **Enabled** or **Disabled**. When enabled call waiting tone is not heard when Call Waiting is activated. In default all extensions have tone Protection enabled so call waiting tone is not heard.

**Open Door:** Select **Allowed** or **Not Allowed** from the dropdown list to allow or prohibit activation of the door opening mechanism from the extension.

**Permanent CLIR:** Select **Enabled** or **Disabled** from the dropdown list. When Permanent Calling Line Identification Restriction (CLIR) is enabled, the network will not display information about the number of the extension to called parties. You must ensure that network CLIR is not enabled in order to use this functionality as both services will conflict.

**COLR:** Select **Enabled** or **Disabled** from the dropdown list. When Connected Line Identification Restriction (COLR) is enabled, the extension number will not be displayed when a call is answered on the extension.

**Hotline:** To programme the extension so that as soon as the handset is lifted a specific number is dialled, enter the number in the Hot Line text box.

- The number dialled can be an extension or an external number.
- When a systemphone is programmed as a Hot Line, only limited features can be used.
- A common application for the Hot Line feature is for a fax or modem. The extension can be set to automatically dial 9 when it goes off hook so an external line is automatically selected when the fax goes off hook.

**Specific Outgoing DDI:** To associate a DDI number with the extension for outgoing calls, enter the DDI number in the text box.

**Call Logging:** Select **Enabled** or **Disabled** from the dropdown list. When Enabled is selected, calls to and from the extension will be logged. See 'Call Logging' on Page 98.

**Reminder Call Time:** To set the time for a reminder call, enter the time in the 24-hour format: HHMM.

**System SPD override COS (System speed dial override for Class of Service):** Select **Enabled** or **Disabled** from the dropdown list.

- **Enabled:** A system speed dial number can be used even if the Class of Service for the extension normally prohibits the type of call.
- **Disabled:** A system speed dial number cannot be used if the Class of Service for the extension prohibits the type of call.

**Account Codes:** Select **Optional** or **Mandatory** from the dropdown list.

- **Optional:** it is not compulsory to enter an account code before making an external call from the extension.
- **Mandatory:** an account code must be entered before making an external call from the extension.

**Room Monitor:** Select **Allowed** or **Protected** from the dropdown list. This feature is available on systemphones only. It is also not available to Extensions 201 and 202.

- **Allowed:** an extension can set Room Monitor.
- **Protected:** an extension cannot set Room Monitor.

Room Monitor allows you to listen to the sounds in a room from extensions 201 and 202. When an extension activates Room Monitor, and leaves the phone off hook, extension can dial the extension number and be connected to it. Refer to the User Guide for further information.

**Allow to Page:** Select **Enabled** or **Disabled** from the dropdown list.

- **Enabled:** If a Public Address (PA) amplifier is connected and enabled, the extension is allowed to:  
Make announcements over the PA from a systemphone.  
Make announcements over the speakers of all systemphones.  
Page both systemphones and PA simultaneously.
- **Disabled:** the extension is not allowed to use the PA system or page extensions.

**Protect from Paging:** Select **Allowed** or **Protected** from the dropdown list. This feature is available on systemphones only.

- **Allowed:** announcements and voice calls from the PA system can be received on the systemphone speakerphone.
- **Protected:** the extension is protected from receiving both announcements and voice calls over the systemphone speakerphone.

**Background Music:** Select **Enabled** or **Disabled** from the dropdown list. This feature is available on systemphones only.

Note: You must have an external Music on Hold peripheral attached in order to provide background music.

- **Enabled:** background music can be played over the extension speakerphone.
- **Disabled:** background music cannot be played over the extension speakerphone.

**Auto Answer:** Select **Enabled** or **Disabled** from the dropdown list. This feature is available on systemphones only.

- **Enabled:** The systemphone automatically answers Internal Calls.
- **Disabled:** All calls ring the phone as normal

**Additional Keys:** Select **PKM 12**, **PKM 48** or **Disabled** from the dropdown list. These modules can be installed on BT 8568, 8528, and 5330 systemphones only **Disabled:** There is no PKM equipped on the phone and the normal number of programmable keys is available.

- **PKM 12:** An additional 12 programmable keys are provided by equipping the PKM 12 module on the phone. The additional keys are added to the key programming page in the Extension settings for the phone.
- **PKM 48:** An additional 48 programmable keys are provided by equipping the PKM 48 module on the phone. The additional keys are added to the key programming page in the Extension settings for the phone.

**5360 Phone:** This option is presented when the phone is an IP phone and a Mac Address has been entered in the basic settings.

- **Disabled:** The phone is a 5320 or 5330 IP phone
- **Enabled:** The phone is a 5360 IP Phone. The number of programmable keys is increased to 48.

## Extension Licences

The extension licences allocated to the extension are shown.

**FMC Licence.** When an FMC licence is allocated to the extension in Extension / Extension Licences the text 'Enabled' is shown.

**Unified Messaging Licence.** If a Licence is not allocated to the extension the text 'Not Allocated' is shown. If a Unified Messaging Licence is allocated to the extension the following programming options are displayed:

- **UM Email Address:** The e-mail address that the voice mail messages left in the extension's voice mailbox are sent to.
- **IMAP Username.** Enter the e-mail Username here.
- **IMAP Password.** Enter the e-mail Password here.

See Unified Messaging on page 72.

**Remote Teleworker Licence.** If a Remote Teleworker licence is allocated to the extension the text 'Allocated' is shown. See Remote Teleworker on page 58.

Note: Remote Teleworker licences should only be allocated to BT 5320, 5330, and 5360 IP phones.

**UC Licence.** If a UC Licence is allocated to the extension the type of Unified Communication Package is shown, UC Basic, UC Outlook or UC CRM.

## **Extension Configuration from the Programming Extension**

You can also use the programming extension to configure several of the extension settings.

### **Assigning Extension Names**

You may assign names to extensions. Once assigned, when an extension receives an internal call, its display will show the calling extension name instead of the extension number. The extension names are also shown in the Internal Call page on all systemphones.

To assign a name to an extension:

- From the Programming extension, press the ⊗ key.
- Select **System Program**.
- Enter the Password (1111 in default).
- Select **Name program**.
- Select the extension you wish to name and use the dial pad to enter the name. Up to sixteen characters, including spaces, can be entered for each name.
- Select **Confirm**.  
The Extension Menu will be displayed, allowing you to continue programming other names.
- Press the **Hands-free** key to finish programming.

### **Allocating Voicemail to an Extension or Group**

- From the Programming extension, press the ⊗ key
- Select **System Program**.
- Enter the System Programming Password (1111 in default).
- Scroll until Voice boxes is displayed.
- Select **Voice boxes**.
- Select the option required:  
**Standard VB:** to enable regular Voicemail.  
**Info Only VB:** to enable Voicemail that will play a message to callers, but not record messages.
- Select the extensions to be allocated voicemail.  
Those with voicemail will be marked with a solid square.

- To allocate voicemail to a Group, scroll until Group is displayed.
- Select **Group**.
- Select the Groups to be allocated voicemail.  
Those with voicemail will be marked with a solid square.
- Press the **Hands-free** key to finish programming.

## Checking Extension Passwords

All extension voicemail passwords can be examined from the programming extension. To do so:

- From the programming extension, press the ⊗ key
- Select **System Program**.
- Enter the System Programming Password (IIII in default).
- Select **Examine passw**.
- Select the type of password you wish to check: Extension Lock Password or Voicemail Password or System Voicemail Password.
- Select the extension with the password you wish to examine. The voicemail password of that extension is briefly displayed on the top line of the display.
- Press the **Hands-free** key to finish.

## Managing Extension External Diversions

Using the programming extension, you can:

*Define whether only external callers, or both external and internal callers, are diverted externally when you set an External Divert on an extension.*

*Prohibit specific extensions from activating an External Divert.*

- From the programming extension, press the ⊗ key
- Select **System Program**.
- Enter the System Programming Password (IIII in default).
- Scroll until External Divert is displayed.
- Select **External Divert**.

To prohibit extensions from setting an External Divert:

- Select **No External Call**.
- Select the extensions that are NOT allowed to activate an external diversion or set up trunk-to-trunk calls.
- Press the **Hands-free** key to finish programming.

To programme an extension to Divert both Internal and External calls:

- Select **All calls**.
- Select the extensions that are permitted to divert all calls to an external number.
- Press the **Hands-free** key to finish programming.

To programme an extension to Divert only External calls:

- Select **External calls**.

- Select the extensions that are only permitted to divert external calls to an external number.

Press the **Hands-free** key to finish programming.

---

**Caution:** It is possible that an extension may misuse External Divert.

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## LAN IP Phone Configuration

For a BT 5320 or 5330 or 5360 IP phone the IP phone MAC address, located on a label on the base of the phone, must be programmed.

- Select **Extensions / Extension Settings** to display a list of the extensions in groups of 8.
- Select the group of extensions that includes the telephone you wish to programme.

In the MAC Address field select **Custom** and enter the Mac Address as shown

Extension Name	Voice Mail	Phone Type	MAC Address	Speed dials	Keys	Advanced
<small>(Max 16 characters)</small>						
209	Disabled	Analogue	None	Speed dials	Keys	Advanced
210	Disabled	Analogue	None	Speed dials	Keys	Advanced
211	Disabled	Analogue	None	Speed dials	Keys	Advanced
212	Disabled	Analogue	None	Speed dials	Keys	Advanced
213	Disabled	IP Phone	08:00:0F:4C:99:D3	Speed dials	Keys	Advanced
214	Disabled	IP Phone	None	Speed dials	Keys	Advanced
215	Disabled	IP Phone	None	Speed dials	Keys	Advanced
216	Disabled	IP Phone	None	Speed dials	Keys	Advanced

If the phone type is a softphone, the MAC Address box is left blank.

Select **Submit**.

When the phone is plugged into the LAN it is configured automatically.

## Remote Teleworker Configuration

The remote telephone must be either a BT 5330 or BT 5320 or BT 5360 IP phone and you will need a Remote Teleworker licence. To configure a Remote Teleworker extension you program both the web interface and the remote systemphone.

- Use the web interface to program the IP phone MAC address; this is the same programming as for a locally connected IP phone. See *Extension Configuration from the Web Interface* on page 50.
- Use the web interface to assign a Remote Teleworker licence to the extension. Go to the *Extensions / Extension Licences* page to assign a Remote Teleworker licence to the phone. This is important. Without a Remote Teleworker licence assigned, the phone will not work in Remote Teleworker mode. See page 74.
- Programme the IP Phone as shown below.
- Use the remote IP phone page to configure the phone as a remote extension. Refer to 'Remote Teleworker' in the User Guide for the programming procedure. The ICP and TFTP IP addresses (they will both be the same) are the WAN IP address on the system. The Remote Teleworker phone will also work normally when connected to the LAN; this should be used to confirm phone is working before installing the phone in a remote location.



## IP Phone Programming for Remote Teleworker operation

- Power on the IP phone by plugging in the LAN cable LAN port on the back of telephone.
- While the phone is powering up, press the two arrow keys (adjacent to the speaker key) on the front of your telephone at the same time until **CONFIGURE PHONE? \*=YES, #=NO** displays. (You should try and have these two keys depressed while plugging in the LAN cable or press them very quickly after the cable is plugged in).
- Select **\* (YES)**.
- **NETWORK PARAMETERS? \*=YES, #=NO** displays.
- Select **\* (YES)** for Network Parameters.
- Select **# (NO)** until **STATIC IPV4? \*=YES, #=NO** displays.
- Select **\* (YES)** for Static IPV4.
- Select **# (NO)** until **MODIFY IPV4 PARAMS? \*=YES, #=NO** displays.
- Select **\* (YES)** to modify the IPV4 parameters.
- Scroll down using the **^ Up** and **v Down** keys until **ICP IP Address** displays.
- Enter the WAN IP address of the system. The WAN IP address can be found on the Network Status page. It is shown as the IP Address in the WAN connection status box. See Page 95.
- Scroll down using the **^ Up** and **v Down** keys until **TFTP Address** appears on your screen.
- Enter the WAN IP address. This is the same IP address as was entered for the ICP IP Address above.
- Scroll down using the **^ Up** and **v Down** keys until **Store Changes** displays and select **\* (YES)**.
- Scroll down using the **^ Up** and **v Down** keys until **Reboot now** appears and select **\* (YES)**.

The IP phone MAC address must also be programmed in the Extension Settings. See Extension Configuration from the Web Interface: Basic on page 50 for details.

## Extension Diverts

The Extension Divert settings for all extensions can be viewed and changed from the Extension Diverts page.

Select **Extensions / Extension Diverts**

The following page is displayed:

System	PBX	Lines	Extensions	Data	Diagnostics
Extension Diverts					
Extension	Divert All	Divert On Busy	Divert On No Answer	External Diversion	
Sean Davoren		710	710	Disabled	v
Mick Tope			710	Disabled	v
Sean Young				All Calls	v
Mick O Keeffe		710	710	Disabled	v
Dave Murphy		710	710	Disabled	v
Paddy Heydon		710	710	Disabled	v
Ken Long		710	710	Disabled	v

In the Divert All, Divert on Busy and Divert on No Answer columns the current setting for each extension is displayed.

The destination can be changed by entering the destination number in the appropriate box.

**External Diversion:** Select the required option from the dropdown list.

- **Disabled:** calls to the extension cannot be diverted to an external number.
- **All Calls:** all calls to the extension can be diverted to an external number.
- **External Calls Only:** only calls to the extension from an external number can be diverted to an external number.

---

**Caution:** It is possible that an extension may misuse External Divert.

---

Note that before Diverts can be set to an external destination number, External Diversion, above, must be enabled for the extension.

## Extension Groups

Extensions can be placed in up to 20 groups. Each group has a group number (180 – 199) to allow the group to be rung internally.

Extension groups can be programmed as either Ring Groups in which all extensions ring for an incoming call to the group, or Hunt Groups in which extensions are rung one after another in a programmed order until the call is answered.

### Incoming Calls to an Extension Group

Incoming calls to Extension Groups are handled as follows:

- When an incoming call is presented to an Extension Group all the free extensions in the group are rung. This type of group would typically be used when an incoming call can be handled equally well by several people in a department.
- If 'Do Not Disturb' is activated by an extension the phone is not called.
- If all the extensions in a group activate 'Do Not Disturb' the call is presented to extension 201, the operator extension. Extension 201 cannot activate 'Do Not Disturb'.
- If the group is busy, the call is queued to the group and Call Waiting is presented to all the busy extensions in the group.

An Extension Group is considered busy if the number of calls being presented to the group exceeds the number of members in that group.

For calls on ISDN/VoIP lines, if the group is busy there is a programming option that allows the call to be accepted or rejected. See 'Accept on Busy' on Page 27. If the call is accepted, the call is queued to the group and Call Waiting is presented to all the busy extensions in the group.

- If 'Divert on Busy' is programmed for the group it is activated.
- If 'Divert on No Answer' is programmed for the group it is activated after the 'Divert on No Answer' timer has expired.

### Incoming Calls to a Hunt Group

When an incoming call is presented to a Hunt Group:

- The call rings a single extension in the group. The extension is selected depending on the Hunt option chosen: Linear, Circular or Longest Idle. See 'Hunt Options' below.

When an extension is a member of a group, the option to log into the group appears on the phone display. If no extensions are logged in to the group the incoming call for the group is presented to extension 201, the operator extension.

- *If the call is not answered then it is passed on to the next extension in the group according to the programmed order. This continues until the call is answered or the call has attempted to ring all extensions in the Hunt Group.*  
*If 'Do Not Disturb' is activated by an extension, the phone is not called and the call is presented to the next free extension in the group.*  
*If all the extensions in a group activate 'Do Not Disturb' the call is presented to extension 201. Extension 201 cannot activate Do Not Disturb.*
- *If the call remains unanswered, it will continue to ring the last extension in the group. If 'Divert on No Answer' is set for the group, the call will be diverted.*
- *The call can be forwarded to the group Voicemail if it has been programmed for the group.*
- *If the group is busy, the call is queued to the group, and Call Waiting is presented to all the busy extensions in the group.*
- *For calls on ISDN lines, if the group is busy there is a programming option that allows the call to be accepted or rejected. See 'Accept on Busy' on Page 27. If the call is accepted, the call is queued to the group and Call Waiting is presented to all the busy extensions in the group.*

*The following hunt options can be chosen for a Hunt Group:*

- *Linear hunting: calls are always presented to the first extension in the Group if it is available. If it is busy, then the call is presented to the next extension in the group. Linear hunting is used if there is a preference for a specific extension to take most of the calls, with backup call handling by other extensions in the group.*
- *Circular hunting: calls are presented to the next available extension in the Hunt Group. In Circular hunting, no preference is given to one extension over another.*
- *Longest idle: calls are presented so that they are evenly distributed among all extensions in the group. Calls are presented to the free extension that has the longest time interval since handling an incoming call.*

*You can set the length of time a call rings a member of a Hunt Group before it hunts to the next extension. See 'Timers' on Page 31.*

## **Configuring Groups**

*Several different web interface pages can be used to configure extension groups:*

- *Extensions/Extension Groups to configure a ring group or a hunt group.*
- *Lines/Line Settings: to configure an extension group as the destination of incoming calls on a specific line. See 'Incoming Ringing on Page 46.*
- *Lines/DDI Settings: to define the destination of a specific DDI number to be an extension group. See 'DDI Routing' on Page 46*
- *Lines/Caller ID: to define the destination of a specific Caller ID to be an extension group. See 'Caller ID Routing' on Page 48*
- *PBX/Door Intercom: to define the destination of a Door Intercom to be an extension group. See 'Door Intercom Settings' on Page 37*
- *PBX/Timers: to set the length of time a call rings a member of a hunt group before it hunts to the next extension. See 'Timers' on Page 31.*

*All groups can be called from other extensions by dialling the specific group number (180-199).*

*You can programme groups from either the web interface or the programming extension.*

## **Programming an Extension Group from the Web Interface**

*To configure a Ring Group or a Hunt Group, from the web interface top-level menu:*



Two options are shown, Ring Group and Hunt Group. For each Group, a solid square indicates the type of Group currently set.

To set a Ring Group:

- Select **Ring Group**. The page showing the equipped extensions is displayed.
- Select the extensions to be included in the Ring Group.
- Press the **Hands-free** key to finish programming.

To set a Hunt Group:

- Select **Hunt Group**.
- Select the type of Hunting for the Group: **Linear**, **Circular** or **Longest Idle**. A solid square indicates the type of Hunt Group currently set.
- For **Linear** and **Circular** select the required extensions in order of priority. This determines the order in which the extensions will ring within the group.
- Press the **Hands-free** key to finish programming.

## **Display of Extensions Logged in to groups**

Extensions in groups can log in or out of the group from their systemphone menu or using the feature code 723 xxx. A web page is provided that lists all the groups and the extensions logged into them. This shows the status of the extensions in the groups. It is not possible to log extensions in or out of groups from this page.

From the web interface top-level menu:

- Select **Extensions / Extension Login or Logout in Groups** to display a list of the extensions and groups. If an extension is logged in to a group 'Login' is shown in the appropriate cell. The cell says Log Out if the extension is not logged in.

## **Class of Service & Class Codes from the Web Interface**

Extensions and groups can be programmed with a class of service. This determines the type of call the extension or group is allowed to dial. For each extension and group, day class of service can be different from night class of service.

Class of Service can be configured from the web interface, or programmed from the programming extension.

### **Class Code Configuration from the Web Interface**

To refine Class of Service, you can create lists of specific dialling codes. These lists can then be enabled or disabled for specific extensions and groups using the Extension Class of Service page and the Group Class of Service page. The code lists are:

- **Allowed Codes:** When enabled, the extension or group is permitted to make calls to the numbers listed on the Allowed Codes list. When disabled the Allowed Codes list is ignored for this extension or group.
- **Restricted Codes:** When enabled, the extension or group is prohibited from making calls to the numbers listed on the Restricted Codes list. When disabled the Restricted Codes list is ignored for this extension or group.
- **International Codes:** International codes that an extension or group is restricted from dialling when the Class of Service is set to No International.

- **National Codes:** The National codes are combined with the International codes so that when an extension or group is set to Local Only they are restricted from dialling codes in both of these tables.

The Allowed Codes and Restricted Codes lists override the basic Class of Service settings.

To create a list of Class Codes:

- Select **Extensions / Class Codes / Code type (International Codes, National Codes, Allowed Codes, or Restricted Codes)** to display the selected Class Codes page.

The figure below illustrates the top section of a Class Codes page used to create a National Codes list.

The screenshot shows a web interface for configuring Class Codes. At the top, there is a navigation bar with links for System, PBX, Lines, Extensions, Data, and Diagnostics. Below this, the page title is "Class Codes". There are two main sections: "Extension Class of Service" and "Ring Group Class of Service". Under "Extension Class of Service", there are links for "International Codes", "National 01-25", "National 26-50", "Allowed Codes", and "Restricted Codes". The "National Codes" section is expanded, showing a table with two columns: "Index" and "Number". The "Index" column lists numbers from 001 to 010. The "Number" column contains input fields with the following values: 0, 1410, 14700, 12800, 153, 192, and empty fields for 007, 008, 009, and 010.

Index	Number
001	0
002	1410
003	14700
004	12800
005	153
006	192
007	
008	
009	
010	

Links at the top of each of the Class Codes pages allow you to move from one page to another.

- To enter a new code, type the code in the next available space on the list  
You can enter up to 50 codes in each code list. Each list is divided into two sections with a capacity of 25 codes in each section.
- Select **Submit**.

The Class Codes pages can be opened by selecting the link from the Extension Class of Service and Group Class of Service pages.

The Extension Class of Service and Group Class of Service pages can be opened by selecting the link from the Class Codes pages.

## Class of Service Configuration from the Web Interface

Three different web interface pages are used to programme class of service:

- **Extension Class of Service:** to set the basic class of service for each extension, and to enable or disable Class Code lists for each extension.
- **Group Class of Service:** to set the basic class of service for each group, and to enable or disable Class Code lists for each group.
- **Class Codes:** to create lists of dialling codes that each extension and group can either be permitted to dial or prohibited from dialling. The Class Code lists override the basic class of service settings.

The basic Classes of Service are:

- **No Restrictions:** All calls are permitted from the extension.
- **No International:** The extension is not permitted to make calls to numbers that begin with the digits listed on the International Class Code list.

- *Local Only: Only local and emergency calls are permitted from the extension. The extension is not permitted to make calls to numbers that begin with the digits listed on the National and International Codes lists.*
- *Emergency Only: Only emergency calls are permitted from the extension. When an extension's class of service is Emergency Only, the Allowed Code list is ignored.*

*Emergency calls are always permitted from all extensions.*

*The Allowed Codes and Restricted Codes lists override settings that have been programmed using the Extension Class of Service or Group Class of Service pages.*

- *Allowed Codes: The allowed codes can be combined with the restricted codes in Class of Service Programming below. When enabled, the extension or group is permitted to make calls to the numbers listed on the Allowed Codes list. When disabled the Allowed Codes list is ignored for this extension or group. An example would be to place an international number in this table and combine it with the International Restricted Class of service below. By doing this the extension is restricted from dialling all International numbers with the exception of this number.*
- *Restricted Codes: The restricted codes can be combined with the Class of Service selected for an extension below. When enabled, the extension or group is prohibited from making calls to the numbers listed on the Restricted Codes list. When disabled the Restricted Codes list is ignored for this extension or group. An example would be to place premium rate numbers in this table and combine with the No restriction Class of service so the extension in this case is only restricted from dialling premium rate numbers.*

*As an example, to set Class of Service for extensions so they can be used to dial some international numbers, but are restricted from dialling others:*

- *From the Class Codes page create a list of International Codes that extensions are to be restricted from dialling.*
- *From the Extension Class of Service page, set the class of service for the extensions to No International. This will restrict the extensions from dialling numbers that begin with the codes listed in the International Codes list.*
- *From the Class Codes page, add to the Allowed Codes list the specific international codes that the extensions are permitted to dial.*
- *From the Extension Class of Service page enable Allowed Codes for the extensions.*
- *The extensions will then be restricted from dialling any international numbers except those on the Allowed Codes list.*

## **Defining Extension Class of Service from the Web Interface**

*Use the Extension Class of Service page to set the class of service for each of your phone extensions.*

*From the web interface top-level menu:*

- *Select **Extensions / Extension Class of Service** to display a list of the licensed extensions, in sets of 8.*
- *Select the set that contains the extension you wish to configure.*

*The Extension Class of Service page is displayed.*

System PBX Lines Extensions Data Diagnostics

### Extension Class of Service

To change the Allowed, Restricted, National and International codes, click here

201 - 208    209 - 216    217 - 224    225 - 232    233 - 240    241 - 248

Ext	Class of Service Day	Allowed Codes	Restricted Codes
217	No Restrictions	Disabled	Disabled
218	No Restrictions	Disabled	Disabled
219	No Restrictions	Disabled	Disabled
220	No Restrictions	Disabled	Disabled
221	No Restrictions	Disabled	Enabled
222	International Restricted	Enabled	Disabled
223	No Restrictions	Disabled	Disabled
224	Emergency Only	Disabled	Disabled

Ext	Class of Service Night	Allowed Codes	Restricted Codes
217	No Restrictions	Disabled	Disabled
218	No Restrictions	Disabled	Disabled
219	No Restrictions	Disabled	Disabled
220	Local Only	Disabled	Disabled
221	International Restricted	Enabled	Enabled
222	International Restricted	Enabled	Disabled
223	Local Only	Disabled	Disabled
224	Emergency Only	Disabled	Disabled

Use the top section of the page to define Day Class of Service for each extension. Use the lower section of the page to define Night Class of Service.

Beside the extension number in either section of the menu:

- Select a class of service from the 'Class of Service Day' or 'Class of Service Night' dropdown list.
  - No restrictions: the extension can dial any number.
  - International Restricted: The extension is restricted from dialling international numbers that begin with the codes on the International Codes list.
  - Local Only: Only local and emergency calls are permitted from the extension. The extension is restricted from dialling numbers that begin with the codes on the National Codes list or the International Codes list.
  - Emergency Only: the extension can only dial emergency numbers.
- If you are using a list of Allowed Codes, select **Enabled** or **Disabled** from the 'Allowed Codes' dropdown list. The Allowed setting overrides the Class of Service Day/Night settings:
  - Enabled: to allow the extension to dial the numbers on the list.
  - Disabled: to ignore the Allowed Codes list for the specific extension.
- If you are using a list of Restricted Codes, select **Enabled** or **Disabled** from the 'Restricted Codes' dropdown list. The Restricted setting overrides the Class of Service Day/Night settings:
  - Enabled: to restrict the extension from dialling the numbers on the list.
  - Disabled: to ignore the Restricted Codes list for the specific extension.
- Select **Submit**.

## Defining Group Class of Service from the Web Interface

Each group of extensions can be programmed for a Class of Service. As with Extension Class of Service, this determines the type of call the group is allowed to dial. For each group of extensions, Day Class of Service can be different from Night Class of Service. The group class of service is used only when an external diversion is set for the group.



Use the *Group Class of Service* page to set the class of service for each of your extension groups.

From the web interface top-level menu:

- Select **Extensions / Group Class of Service** to display a list of extension groups, in sets of 10.
- Select the set that contains the group you wish to configure.

The *Group Class of Service* page is displayed.

The page is very similar to the *Extension Class of Service* page in the illustration above.

Use the top section of the page to define *Day Class of Service* for each group of extensions. Use the lower section of the page to define *Night Class of Service* for each group.

## Class Code Configuration from the Programming Extension

- From the Programming extension, press the ⊗ key.
- Select **System program**.
- Enter the System Programming Password (1111 in default).
- Scroll until **Class Codes** is displayed.
- Select **Class Codes**.
- Select the table in which you wish to enter codes. Select one of:
  - Internat'l Codes: a table of restricted codes. It contains 6 pre-programmed codes. This table is typically used for international restricted codes.*
  - National Codes: a table of restricted codes. It contains 6 pre-programmed codes. This table is typically used for non-local national access restricted codes.*
  - Allowed Codes: a table of allowed codes with no pre-programmed entries.*
  - Restricted Codes: a table of restricted codes with no pre-programmed entries.*
- Select an empty space (Index number) and enter the code to a maximum of 13 digits.
  - When entering a code, an additional option 'Any' appears on the systemphone display. Select **Any** to insert an 'X' as the next number of the code you are entering. The 'X' represents any number (1 – 0).*
- Select **Confirm**.
- Press the *Hands-free* key to finish programming.

## Class of Service Configuration from the Programming Extension

From the programming extension, you can assign extensions to a *Class of Service* and specify whether the *Class of Service* applies during the day or during the night. By default, all extensions are in *Class 1*.

- From the Programming extension, press the ⊗ key
- Select **System program**.
- Enter the System Programming Password (1111 in default).
- Select **Class of service**.
- Select **Day Class** or **Night Class** to specify whether you are programming *Day Class of Service* or *Night Class of Service*.
- Select the *Class* you wish to assign to the extensions.
  - No restrictions: extension can dial any number.*
  - No International: extensions are restricted from dialling international numbers that begin with the codes on the International Codes list.*

*Local Only: Only local and emergency calls are permitted. Extensions are restricted from dialling numbers that begin with the codes on the National Codes list or the International Codes list. Only local and emergency calls are permitted from the extension. The extension is not permitted to make calls to numbers that begin with the digits listed on the National and International Codes lists.*

*Emergency Only: the extension can only dial emergency numbers.*

*Allowed Codes: The allowed codes can be combined with the restricted codes in Class of Service Programming. When enabled, the extension or group is permitted to make calls to the numbers listed on the Allowed Codes list. When disabled the Allowed Codes list is ignored for this extension or group. An example would be to place an international number in this table and combine it with the International Restricted Class of service. By doing this the extension is restricted from dialling all International numbers with the exception of this number.*

*Restricted Codes: The restricted codes can be combined with the Class of Service selected for an extension. When enabled, the extension or group is prohibited from making calls to the numbers listed on the Restricted Codes list. When disabled the Restricted Codes list is ignored for this extension or group. An example would be to place premium rate numbers in this table and combine with the No restriction Class of service so the extension in this case is only restricted from dialling premium rate numbers.*

- Select the extensions to be entered in this Class.
- Press the **Hands-free Key** to finish programming.

## O/G Line Restrictions

You can restrict extensions from selecting particular lines to make outgoing calls.

- Select **Extensions / O/G Line Restrictions**.
- Select the extension and set the drop down box to **Enabled**.
- Select **Lines List**.

System PBX Lines **Extensions** Data Diagnostics

### Lines List for Extension 201

[Back to O/G Line Restrictions](#)

[Select all lines](#) [Deselect all lines](#)

Selectable lines	Selection lines
Line 3	Line 1
Line 5	Line 2
Line 6	Line 4
Line 7	
Line 8	
Line 9	
Line 10	
Line 11	
Line 12	
Line 13	

- Select each of the lines you want the extension not to be able to select. The line moves to the right hand side box. To deselect a line select it in the right hand side box and it moves to the left.
- Press **Submit**.

In the example above extension 201 cannot make outgoing calls on Lines 1, 2 and 4.

## Group Divert

A group diversion can be set from any extension within that group. When a diversion for the group is set, any call for that group will be redirected. Calls to individual extensions in the group are not redirected. An extension that is not in the group is not permitted to set or cancel a Group Divert.

*Caution: It is possible that an extension may misuse External Divert.*

## Configuring Group Divert from the Web Interface

Use the Group Divert page to set the divert destinations for each group. The following types of diversions can be set for each Group:

- Group Divert All Calls
- Group Divert on Busy
- Group Divert on No Answer

To set Group Divert destinations, from the web interface top-level menu:

- Select **Extensions / Group Divert** to display the Group Divert page.

Group	All Calls	Extensions Busy	No Answer	External Divert
1				Disabled
2				Disabled
3				Disabled
4				Disabled
5				Disabled
6				Disabled
7				Disabled
8				Disabled
9				Disabled
10				Disabled

- For each group, enter the destination number for each type of Group Divert: Divert All Calls, Divert when Extensions Busy, and Divert on No Answer.  
The destination number can be an external number (enter 9 and the external number), extension number or group number depending on the type of calls permitted for the group.  
If no destination number is entered for a divert type, the Divert is not enabled for the group.
- Select **Submit**.

## IP Paging Group

The number of BT 5320, BT 5330 and BT 5360 IP phones that can be paged is limited to four. There is no limit on the number of BT 8528 and BT 8568 phones.

This page allows you to select the four IP Phones that can be paged as part of the paging group.

From the drop down menu under IP Paging Group' select **Include** for those IP extensions that are to be paged.

Select **Submit**.

## **FMC Settings**

Fixed Mobile Convergence (FMC) allows you to use mobile phones as part of your system.

The web interface pages used to configure FMC on your system are:

- **Extensions/Extension Licences:** to assign an FMC licence to an extension.
- **Extensions/FMC Settings:** to enable FMC, and to configure parallel ringing on extensions.
- **Lines/Line Settings:** to reserve a line for FMC. See 'Configuring Lines from the Web Interface' on Page 39.

### **Enabling FMC and configuring Parallel Ringing**

Use the FMC Settings page to configure extensions for FMC. It is extremely important that before you configure FMC you ensure that an FMC licence has been allocated to the extension you are configuring. See Page 74.

From the web interface top-level menu:

- Select **Extensions / FMC Settings and the group of extensions** to display the FMC Settings page.
- To enable/disable FMC for your system, select **Enabled** or **Disabled** from the 'FMC Enabled' dropdown list at the top of the page.

To associate a mobile phone with a specific extension, use the **Parallel Ringing Extensions** section of the page.

All FMC-licensed extensions are listed by extension number or name.

- For each extension you wish to configure, enter the following data:
  - Mobile Number:** Enter the phone number of the mobile phone to be associated with the extension.
  - Parallel Ringing:** To enable simultaneous ringing of the mobile phone and extension, select one of the following options:
    - External:** external calls to either your mobile or extension will ring both phones.
    - Internal:** internal calls to either your mobile or extension will ring both phones.
    - All Calls:** all calls to your mobile or extension will ring both phones.
    - Enabled:** parallel ringing is enabled. This is the default.
  - On Time:** To set the time of day when Parallel Ringing is to be turned On, enter the time in the format HHMM.
  - Off Time:** To set the time of day when Parallel Ringing is to be turned Off, enter the time in the format HHMM
  - Weekend service:** To enable/disable simultaneous ringing of the mobile phone and extension over the weekend, select **Enabled** or **Disabled** from the 'Weekend Service' dropdown list.
- Select **Submit**.

### **Reserving Lines for Parallel Ringing**

You can reserve outgoing lines not to be used for parallel ringing. If FMC is disabled the line is available for normal calls only.

Use the Lines/Line Settings page to reserve lines for parallel ringing. See 'Configuring Lines from the Web Interface' on Page 39.

## DECT Registration

You can register DECT phones from the web interface or by pressing the button on the front of the DECT card in the system. This is the orange coloured card.

### Registering a DECT telephone from the web interface

Use the DECT Registration page to register your DECT telephones and to check their current registration status. You can register up to 4 DECT handsets with your system.

From the web interface top-level menu:

- Select **Extensions / DECT Registration** to display the DECT Registration page.

System PBX Lines Extensions Data Diagnostics

### DECT Registration

From this webpage it is possible to register a DECT handset if slots are available. The system provides 4 slots - DECT 1,2,3 and 4 - to which handsets can be registered. When a handset is registered the first available slot is used.

DECT 1	Registered	<a href="#">Unregister Handset</a>
DECT 2	Registered	<a href="#">Unregister Handset</a>
DECT 3	Registered	<a href="#">Unregister Handset</a>
DECT 4	Not Registered	

The next available slot will be used when registering a DECT handset. [Register a Handset](#)

Where more than one handset is registered it is possible to unregister all [Unregister All Handsets](#) handsets at the same time.

This page lists the 4 DECT extensions and displays their registration status.

To register a DECT phone:

- Select **Register a Handset**. You will receive the following prompt:

System PBX Lines Extensions Data Diagnostics

### DECT Registration

You have 30 seconds to select the registration option on the handset

The registration code is 0000

After 30 seconds you will be redirected to the DECT webpage

[DECT Webpage](#)

- Press the key below **Register** on the Display of your DECT phone.
- Enter the registration code: **0000**.

The DECT Registration page on the web interface will confirm that the phone has been registered in the next available slot.

You can unregister single phones or all DECT phones by selecting the appropriate button on the page.

### Registering a DECT phone using the button on the DECT card

The DECT card installed in the system, the orange coloured card, is equipped with a black button. Pressing the button for more than 5 seconds places the system in DECT registration mode.

- Press the button on the DECT card for more than 5 seconds.
- The Power led on the Base Unit flashes, indicating the system is in DECT registration mode.
- Register the DECT phone as shown above.

Note: Pressing the button on the DECT card for less than 5 seconds rings all registered DECT phones. This is generally used to locate DECT phones.

## Unified Messaging

Unified Messaging provides email notification of voicemail messages left in the PBX voicemail.

In order to use Unified Messaging please ensure you have valid Unified Messaging licences and that a licence is allocated to each extension availing of the service.

Unified Messaging works in two different modes:

- **SMTP based Unified Messaging:** Voicemail messages that are left for extensions on the system are sent as email messages with the voicemail as an audio attachment. However there is no synchronisation between e-mail and Voice mail so when messages are read in the e-mail there is no indication in the voice mail that the message has been read.
- **IMAP based Unified Messaging:** Voicemail messages that are left for extensions on the system are sent as email messages with the voicemail as an audio attachment. Individual voice boxes can be synchronised with individual email accounts. When synchronised, voicemail messages that are accessed via email are marked as read on the voicemail system.

Both modes are available on the system. It is possible to configure some extensions to use SMTP based Unified Messaging and some extensions to use IMAP based Unified Messaging.

## Programming extensions for SMTP Unified Messaging

Several different web interface pages are used to configure Unified Messaging:

- Allocate a Unified Messaging licence to the extension. From the top-level menu, select **Extensions/Extension Licences** and allocate a Unified Messaging licence to the extension. See page 74.
- Turn Unified Messaging on and enter the details of the e-mail account that is used to receive the e-mails from the system and forward them to the individual extension's e-mail. To do this select **Extensions / Unified Messaging** from the top menu

System PBX Lines <b>Extensions</b> Data Diagnostics	
<b>Unified Messaging</b>	
Email Notifications	Enabled
<b>SMTP</b>	
Server	
TLS	On
Port 587 is normally used when TLS is turned on.	
Port	587
Name	
E-Mail Address	
Authentication	Login
Username	
Password	
<b>IMAP</b>	
Server	
TLS	Off
Port	143
Port 143 is normally used for IMAP.	

E-Mail Notification is set to **Enabled** in default.

In the SMTP Settings set the following items.

Note: You may need to contact your e-mail service provider to get full details on the settings for your e-mail.

**Server:** Enter the address of the e-mail server that is used to receive the e-mails from the system. An example is 'smtp.gmail.com'

**TLS:** Set to On when TLS security is used to connect to the email server.

**Port:** This is the numerical port used by the SMTP protocol. This is preset as 587 and is not normally changed.

**Name:** This is the name that is used when e-mails are sent from this account. Use a name that will be recognised by the extensions receiving e-mail notification of their voice mails.

**E-Mail Address:** This is the email address used to send the voicemail emails. It should be an account that is recognised as belonging to the particular system (for example an administrators email account or a specially created account for the system).

**Authentication:** This is the form of authentication used by the e-mail server.

**Username:** This is the username that is used to logon to the email server.

**Password:** This is the password that is used to logon to the email server.


Select **Submit**.

Programme the individual extensions e-mail account.

From the top menu select **Extensions/ Extension settings** and select the group the extension is in. Select **Advanced settings** for the extension.

The Extension Licences panel is at the bottom of the page.

Note: UM Email address field is presented if a Unified Messaging licence is allocated to the extension.

Extension Licences	
Link to Extension Licences 	
FMC Licence	Not Allocated
Unified Messaging Licence	Allocated
UM Email Address	<input type="text"/>
IMAP Username	<input type="text"/>
IMAP Password	<input type="password"/>
Remote Teleworker Licence	Not Allocated
UC Licence	UC Basic

Enter the extensions e-mail address in the **UM Email Address** field. This is the address that the e-mail notification of voice mails is sent to.

Select **Submit**.

## Programming extensions for IMAP Unified Messaging

Allocate a Unified Messaging licence to the extension. From the top-level menu, select **Extensions/Extension Licences** and allocate a Unified Messaging licence to the extension. See page 74.


Select **Extensions / Unified Messaging** to display the Unified Messaging page.

- Select **Email Notifications** as **Enabled** or **Disabled** to enable or disable Unified Messaging functionality.
- Configure the IMAP email server details as follows:
  - Server: This is the address of the IMAP server that is used to synchronise email accounts and voicemail.
  - TLS: This determines whether TLS security is used to connect to the email server. Select as **Enabled** or **Disabled**.
  - Port: This is the numerical port used by the IMAP protocol. This is set as 143 and is not normally changed.
- Select **Submit**.

Programme the individual extensions e-mail account.

From the top menu select **Extensions/ Extension settings** and select the group the extension is in. Select **Advanced settings** for the extension.

The Extension Licences panel is at the bottom of the page.

Extension Licences	
Link to Extension Licences 	
FMC Licence	Not Allocated
Unified Messaging Licence	Allocated
UM Email Address	<input type="text"/>
IMAP Username	<input type="text"/>
IMAP Password	<input type="password"/>
Remote Teleworker Licence	Not Allocated
UC Licence	UC Basic

Enter the extensions e-mail address in the **UM Email Address** field. This is the address that the e-mail notification of voice mails is sent to.

Enter the IMAP Username and Password.

Select **Submit**.

## Extension Licences

The system for the most part, manages licensed functionality automatically. Once a licence key is entered the system will assign it to the appropriate hardware component. However, there are certain licences that an administrator must make decisions regarding where to assign licences. These are known collectively as Extension Licences. The Extension Licences refer to functionality such as FMC, Remote Teleworker, Unified Messaging and Unified Communications. The administrator has to make decisions as to which extensions should be assigned these licences based on the requirements of the users. It is very important that Extension Licences are allocated to a particular extension before the functionality is configured for that extension.

To manage Extension Licences from the web interface top-level menu:

- Select **Extensions / Extension Licences** to display the Extension Licences page. The top of the page will display how many licences are associated with the system and how many are available (i.e. have not been already assigned).
- For each licensed extension there will be an entry allowing you to assign an Extension Licence to that extension. The following licences can be assigned:

FMC



Unified Messaging  
Remote Teleworker  
UC Basic  
UC Outlook  
UC CRM

- Once you have assigned licences to the appropriate extensions select **Submit**.

## Flexible Numbering

Flexible Numbering allows you to change the numbering plan used in the system. For example, Flexible Numbering allows systems with DDI numbers to have their extension numbers reflect their DDI numbers. Using Flexible Numbering, you can change the following numbers:

### Configuring Extension Numbering Scheme

Use the Flexible Numbering page to define or modify the extension numbering scheme.

Note: The following rules apply:

The extension numbering can be 3 or four digits but not a mixture of both.

All extension numbers must have the same first digit. You cannot, for example, have some numbers beginning with 3 and some with 4.

The following is an example on how to configure a system with extension numbers changed to begin with 3 and changing an individual extension number.

First step is to change the extension numbering to begin with 3.

From the web interface top-level menu:

- Select **Extensions / Flexible Numbering / Basic Extension Numbering**

The screenshot shows a web interface with a blue navigation bar at the top containing the following tabs: System, PBX, Lines, Extensions, Data, and Diagnostics. The main content area is titled "Basic Extension Numbering". Below the title, there is a warning message: "For any change to the numbering scheme a system reset will be required." The configuration is presented as a table with the following rows:

First Extension (201 is the default)	201
Numbering Scheme (3 Digit is the default)	3 Digit Numbering
Operator Extension (0 is the default)	0
Virtual Extensions (1xx is the default)	1
Feature Codes (7xx is the default)	7
System Speed Dials (4xxx is the default)	4
Primary Line Group (9 is the default)	9

Below the table, there are two expandable sections: "Advanced Extension Numbering" and "System Reset".

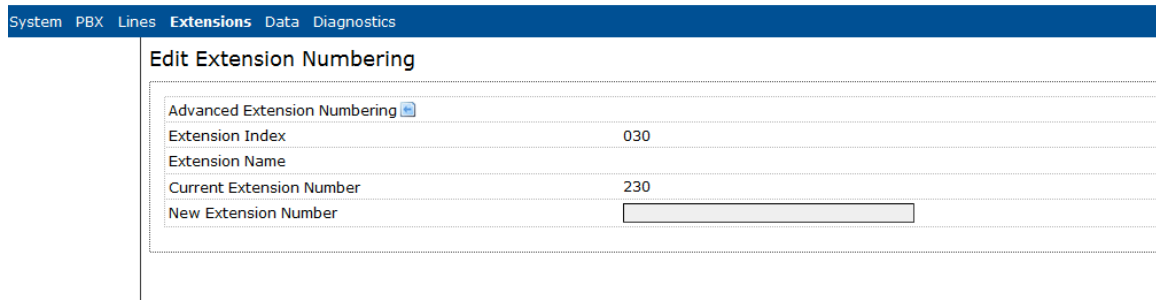
In the First Extension box enter 301 and press **Submit**.


Second step is to change an individual extension number

- Select **Extensions / Flexible Numbering / Advanced Extension Numbering**

Select the extension range of the extension

Select the Edit button at the right hand side of the extension field relating to the extension you want to change



Edit Extension Numbering	
Advanced Extension Numbering 	
Extension Index	030
Extension Name	
Current Extension Number	230
New Extension Number	<input type="text"/>

Enter the New extension number. The number you enter must not be currently allocated. An error message will be given if an incorrect number is entered.

Note: Extension 299 should not be allocated as an extension number. This number is pre-allocated to the RACE modem. If you allocate this number to an extension remote access via RACE will no longer work.

The other fields in the Basic Extension numbering table are:

**Operator Number:** Select the number to be dialled to call the Operator. Default is 0.

**Virtual Extensions:** Select the digit to be used as the first digit of virtual extension numbers. These are extension groups 180 – 199 in default.

**Feature Codes:** Select the number to be used as the first digit of the feature codes. Default is 7. You can change this digit if required to avoid conflict with the new extension numbers.

**System Speed Dial:** Select the digit to be dialled to access System Speed Dial. Default is 4.

**Primary Line Group:** The digit to be dialled to access outgoing line 1. Default is 9.

- Select **Submit**.

Note: You must reset the system for the changes to take effect. There is a link on the flexible numbering pages to the reset page

## Paired Extensions

An extension can be paired with another extension to provide a master and alternate extension. The full functionality of the master extension, including extension number and all programmed features, can be transferred to the alternate extension. This gives the user all normal telephony facilities at two different locations.

Use the Paired Extensions page to configure pairing of two extensions.

From the web interface top-level menu:

- Select **Extensions / Paired Extensions**.

System PBX Lines **Extensions** Data Diagnostics

### Paired Extensions

Extension	Paired Extension	Status
<i>This section contains no values yet</i>		

- *Select **Add Entry**.*



System PBX Lines **Extensions** Data Diagnostics

### Edit Paired Extension

Paired Extensions

Extension Number	<input type="text" value="Ext. 213"/>
Paired Extension	<input type="text" value="Ext. 214"/>

- *For each extension you wish to pair, select an extension number from the 'Extension Number' drop down list and the second extension from the 'Paired Extension' drop-down list. The two extensions will be paired.*
- *Select **Submit**.*

# Managing Data

Use the web interface Data Menus to configure the following features of your system:

- *Broadband Settings*
  - Fixed Broadband Settings*
  - Mobile Broadband Settings*
  - Internet Gateway Settings*
- *ADSL Username/Password*
- *Dynamic Host Configuration Protocol (DHCP) Settings*
- *IP Addresses*
- *Wireless Settings*
- *DMZ Settings*
- *Power over Ethernet (PoE)*
- *Firewall*
- *Intrusion Detection System (IDS)*

## **Connecting to the BT ADSL Broadband service**

The system is pre-configured for connection to BT Broadband over ADSL. The only setting required is to enter the ADSL Username and Password.

### **ADSL Username and Password**

From the top level menu select **Data / ADSL Username/Password**

Enter the Username and Password as supplied by BT for your ADSL Broadband service.

No other setting is required to connect to the BT Broadband service.

**Broadband Settings**

Three different access modes are available under **Data/Broadband Settings**.

- *Fixed Broadband: Internet access via an integrated ADSL2/2+ Annex A modem to a service other than the BT service.*
- *Mobile Broadband: Internet access via a Mobile Broadband USB Modem (dongle) that is inserted into one of the USB slots available on the system. Mobile Broadband can be used as the primary access mode to connect to the Internet or it can be used for Internet access if the ADSL line fails. (ADSL failover mode)*
- *Internet Gateway (IP GW): the WAN port on the system is used to connect to an external modem or existing LAN network.*

To configure Broadband access, from the web interface top-level menu:

- Select **Data / Broadband Settings** to display the Broadband Settings page.

The page displays the current status of the Broadband access modes, and provides links to the configuration pages for each available access mode.

*For a Digital Base Module, Internet Gateway is not available.*

*Fixed Broadband and Mobile Broadband are only available if licensed.*

- Select the link for the specific Broadband access mode you wish to configure.  
The configuration page for the selected mode is displayed.

## Fixed Broadband Configuration

If Fixed Broadband (ADSL) is available, you can configure Fixed Broadband on your system. From the Broadband Settings menu:

- Select the **Fixed Broadband (ADSL) Configuration** link from the Broadband Settings page.

The ADSL Modem Configuration page is displayed.

The figure below illustrates the ADSL Modem Configuration page as it appears when DHCP has been selected as the Type of Access.

The screenshot shows the 'ADSL Modem Configuration' page. At the top, there is a navigation bar with 'System', 'PBX', 'Lines', 'Extensions', 'Data', and 'Diagnostics'. Below the navigation bar, the page title is 'ADSL Modem Configuration' and there is a link 'Back to Internet Access Configuration webpage'. The main content area contains several configuration sections:

- Types of Access:** A dropdown menu currently showing 'DHCP (RFC1483)'.
- VPI:** An input field containing the value '8'.
- VCI:** An input field containing the value '35'.
- RFC1483 Mode:** A dropdown menu currently showing 'LLC Bridged'.
- QOS Class:** A dropdown menu currently showing 'UBR'.
- QOS PCR:** An empty input field.
- QOS SCR:** An empty input field.
- QOS MBS:** An empty input field.

- Select the Type of Access from the dropdown list:
  - PPPoA (Point to Point Protocol over ATM)
  - PPPoE (Point to Point Protocol over Ethernet)
  - DHCP (RFC 1483)
  - Manual (RFC 1483)
- For PPPoE and PPPoA access, enter your ADSL Username and Password.
- Enter the settings data to configure Fixed Broadband on your system. The options available depend on the Type of Access selected. Values to be entered are provided by your service provider.
  - VPI (Virtual Path Identifier): The default VPI is 0.
  - VCI (Virtual Channel Identifier). The default VPI is 38.
  - MTU (Maximum Transmission Unit). The default MTU is 1492. (PPPoE and PPPoA only).
  - MRU (Maximum Receive Unit). The default MRU is 1492. (PPPoE and PPPoA only).
  - WAN IP Address. (Manual mode only). Enter the WAN IP Address in the text boxes.
  - WAN Subnet Mask. (Manual mode only). Enter the mask for the WAN IP Address in the text boxes.
  - Internet Gateway Address. (Manual mode only). Enter the IP address in the text boxes.
  - Primary DNS Server Address. (Manual mode only). Enter the IP address in the text boxes.
  - Secondary DNS Server Address. (Manual mode only). Enter the IP address in the text boxes.

*RFC 1483 Mode. Select from the dropdown list (for DHCP or Manual mode only):*

*LLC Bridged*

*LLC Routed*

*VCmux Bridged*

*VCmux Routed*

*QoS Class (Quality of Service). Select from the dropdown list:*

*UBR (Unspecified Bit Rate)*

*CBR (Constant Bit Rate)*

*VBR-nrt (Variable Bit Rate – non real time)*

*VBR-rt (Variable Bit Rate – real time)*

*QoS PCR (Peak Cell Rate). Enter the PCR in the text box.*

*QoS SCR (Sustainable Cell Rate). Enter the SCR in the text box.*

*QoS MBS (Maximum Burst Size). Enter the MBS in the text box.*

- Select **Submit**.

## Mobile Broadband Configuration

*If Mobile Broadband is available and the following conditions are met, you can configure Mobile Broadband on your system:*

*To configure Mobile Broadband, from the web interface top-level menu:*

- Select **Data / Broadband Settings** to display the Broadband Settings page.
- Select the **Mobile Broadband Configuration** Link to open the Mobile Broadband Settings page.

*Under Basic Configuration:*

- Select the Connection mode from the dropdown list:
  - Enabled: if Mobile Broadband is the primary access mode to connect to the Internet*
  - ADSL Failover: if Mobile Broadband is used for Internet access if the ADSL line fails. This is the default if the HSPA modem has been inserted and the PIN entered correctly.*
- *Disabled: This is the default.*
- Enter your 4-digit PIN Code.

---

**Caution: If you enter an incorrect PIN Code 3 times, access to the modem will be blocked and the 'PUK Required' page will be displayed. Contact your mobile broadband provider help desk to receive a Personal Unblocking Key (PUK)**

---

*Under Advanced Configuration, enter the following data as provided by your mobile broadband provider:*

- Enter the APN (Access Point Name).
- Enter the phone number of the mobile Broadband connection normally \*99#.
- Enter the Idle Time in minutes.
- Select **Submit**.

## Internet Gateway Configuration

*The Internet Gateway Broadband mode is only available on the IP Base Module.*

*It is the access mode used to connect to an external modem or LAN network.*

*To configure Internet Gateway on your system, from the web interface top-level menu:*

- Select **Data / Broadband Settings** to display the Broadband Settings page.
- Select the **Internet Gateway Configuration** link to open the Internet Gateway Configuration page.

The figure below illustrates the Internet Gateway Configuration page, as it appears when PPPoE has been selected as the Type of Access.

- To enable/disable Internet Gateway, select **Enabled** or **Disabled** from the 'Gateway Connection' dropdown list.
- Select the Type of Access from the dropdown list.  
DHCP  
Manual  
PPPoE (Point to Point Protocol over Ethernet)
- For PPPoE, Enter the Username and Password. (PPPoE only)
- Enter the settings data to configure Internet Gateway on your system:  
MTU (Maximum Transmission Unit). The default MTU is 1492. (PPPoE only).  
MRU (Maximum Receive Unit). The default MRU is 1492. (PPPoE only).  
WAN IP Address. Enter the WAN IP Address in the text boxes. (Manual mode only).  
WAN Subnet Mask. Enter the mask for the WAN IP Address in the text boxes. (Manual mode only).  
Internet Gateway Address. Enter the IP address in the text boxes. (Manual mode only).  
Primary DNS Server Address. Enter the IP address in the text boxes. (Manual mode only).  
Secondary DNS Server Address. Enter the IP address in the text boxes. (Manual mode only).
- Select **Submit**.

## DHCP Settings

DHCP (Dynamic Host Configuration Protocol) allows devices to be dynamically allocated IP addresses so they can operate in an IP network. Each time a device is powered up, it is allocated an IP address; this process is called 'leasing' since the IP address is allocated for a specific period of time.

DHCP is enabled by default on both the LAN and DMZ. If DHCP is disabled, devices must be manually allocated IP addresses.

The DHCP Settings page allows you to configure DHCP on your system. Using the same page, you can also specify static IP addresses for devices operating as hosts.

To configure DHCP, from the web interface top-level menu:

- Select **Data / DHCP Settings** to display the DHCP Settings page. The top section of the page is illustrated in the figure below.

The Active Interfaces section of the page displays a list of active devices on your network by IP Address, Subnet Value and Subnet Mask.

The DHCP Leases section of the page lists the active DHCP leases on your network by IP Address, MAC Address, and Time Remaining on the lease.

The Static DHCP Leases section of the page allows you to assign a static IP Address to a device.

## Configuring DHCP on the LAN

To enable and configure DHCP on your LAN:

- In the DHCP section of the page, select **Enable** from the 'LAN' dropdown page.
- In the DHCP Settings section of the page, configure DHCP on your LAN as follows:  
*First Address (Last Octet):* enter the last octet of the first IP address in your LAN to be used by DHCP.  
*Number of Leases Allowed:* enter the number of devices in your LAN that can use DHCP.  
*Lease Time (Seconds):* enter the period of time for which a device in the LAN will be allocated an IP address before it requires renewal. Enter the time in seconds.
- Select **Submit**.

## Configuring DHCP on the DMZ

To enable and configure DHCP on your DMZ:

- In the DHCP section of the page, select **Enable** from the 'DMZ' dropdown page.
- In the DHCP Settings section of the page, configure DHCP on your DMZ as follows:



*First Address (Last Octet): enter the last octet of the first IP address in your DMZ to be used by DHCP.*

*Number of Leases Allowed: enter the number of devices in your DMZ that can use DHCP.*

*Lease Time (Seconds): enter the period of time for which a device in the DMZ will be allocated an IP address before it requires renewal. Enter the time in seconds.*

- Select **Submit**.

## Configuring Static IP Addresses

*You may wish to assign a static IP Address to a device that is operating as a host. Once assigned, the same IP address will always be assigned to a specific host with a specified MAC address.*

*Use the Static Leases section of the DHCP Settings page to assign a static IP Address:*

- Select the MAC Address of the device to be allocated a static IP Address.
- Select the static IP Address for the selected MAC Address.
- Select **Add Entry** if you wish to add an additional line to the Static Leases table.
- Select **Submit**.

## IP Addresses

*There are three options provided under IP Addresses. The first option allows the IP address range used on the system LAN and /or DMZ to be changed. The second defines the public IP address used by an external Router in the cases where the system is in Gateway mode, not connected directly to an ADSL line. The third option allows Local Subnets to be defined. These are set if the system is connected to an external router or LAN.*

### IP Addresses used on the LAN and DMZ

*To change the IP address range on the LAN or DMZ select **Data/IP Addresses / IP Addresses**.*

The screenshot shows a web interface for configuring IP addresses. At the top, there is a navigation bar with tabs for 'System', 'PBX', 'Lines', 'Extensions', 'Data', and 'Diagnostics'. The 'Data' tab is selected. Below the navigation bar, the page title is 'IP Addresses'. The configuration is organized into three sections, each enclosed in a dashed border:

- LAN:** Contains two text input fields: 'IP Address' with the value '192.168.199.1' and 'Subnet Mask' with the value '255.255.255.0'. A dropdown arrow is visible next to the Subnet Mask field. Below these fields is a 'DHCP' checkbox.
- DMZ:** Contains two text input fields: 'IP Address' with the value '192.168.200.1' and 'Subnet Mask' with the value '255.255.255.0'. A dropdown arrow is visible next to the Subnet Mask field. Below these fields is a 'DHCP' checkbox.
- DNS Settings:** Contains a text input field labeled 'Additional DNS Servers' with two empty input boxes below it.

*Use the LAN section of the IP Addresses page to specify the first IP address and the subnet mask to be applied to a LAN IP address:*

- In the 'IP Address' textbox, enter the IP address.
- From the 'Subnet Mask' dropdown list, select the subnet mask to be applied to the IP address.

255.255.255.0 or 255.255.0.0 or 255.0.0.0

Select Custom if a different subnet mask than those provided on the dropdown list is required. Enter the subnet mask.

- Select **Submit**.

Use the DMZ section of the IP Addresses page to specify the first IP address and the subnet mask to be applied to a DMZ IP address:

- In the 'IP Address' textbox, enter the IP address.
- From the 'Subnet Mask' dropdown list, select the subnet mask to be applied to the IP address.

255.255.255.0 or 255.255.0.0 or 255.0.0.0

Select Custom if a different subnet mask than those provided on the dropdown list is required. Enter the subnet mask.

- Select **Submit**.

## Defining Additional DNS Servers

Use the DNS Settings section of the IP Addresses page to define up to 2 additional DNS servers for your network.

- In the 'Additional DNS Servers' text box, enter the IP addresses of up to 2 additional servers.
- Select **Submit**.

## Programming the Public IP address of an external router

In order for a remote phone to access the system a public IP address is required. If your system WAN IP address uses a private address, it is operating in Gateway mode behind an external modem or a LAN network, you need to provide the public IP address of the external router that the system is connected to. The external router must also be configured to forward appropriate traffic to the private WAN IP address of the system.

- Select **Data/IP Addresses/External Router**.
- Enter the IP address in the IP Address Box
- Select **Submit**.

## Local Subnets

If the system is connected via the WAN interface to an external LAN it is necessary to add the IP address or addresses of the external LAN as Local Subnets. This allows IP phones to be located on the BT Quantum LAN and the external LAN.

- Select **Data / IP Addresses / Local Subnets**.
- Select **Add Entry**.
- Enter the IP address and Subnet Mask.

- Select **Submit**

## Wireless Settings

You can enable wireless networking to allow PCs with wireless network capabilities to connect to the LAN.

This functionality is only available on the IP Base Module.

The Wireless Settings page allows you to set up your WLAN access point. To open the page, from the web interface top-level menu:

- Select **Data / Wireless Settings**.

To enable wireless networking, in the Device section of the menu:

- Select the **Enabled** from the Enabled / Disabled dropdown box.
- From the 'Channel' dropdown list, either:  
Select a channel from 1 to 13, or  
Select **Auto** to allow the system to select the channel for you – Recommended.

To configure wireless networking, in the Network section of the page enter the following data:

- Enter the Network Name (Service Set Identifier or SSID) in the 'SSID' textbox.  
Before the wireless network can operate you need to provide a name for the network.
- To determine whether the Network Name is broadcast, select **Enabled** or **Disabled** from the SSID Broadcast dropdown page.  
On: your network will be visible to PCs searching for a wireless network connection.

*Off: your network will be invisible to the standard PC wireless utilities. Users will need to know the SSID to connect to it. For extra security you may choose to disable SSID broadcast.*

- *Select the type of security encryption from the 'Security Option' dropdown list. It is highly recommended that Wi-Fi Protected Access 2 (WPA2) be used to prevent unauthorized access to your wireless network.*

*No Encryption*

*WEP 64: 64-bit encryption on the wireless network.*

*WEP 128: 128-bit encryption on the wireless network.*

*WPA: Wi-Fi Protected Access on the wireless network.*

*WPA2 TKIP: An improved version of WPA.*

*WPA2 AES-CCMP: Wi-Fi Protected Access 2 on the wireless network. This is the recommended setting.*

- *In the 'Key/Pass Phrase' textbox enter a password to be typed in by users when required by the security encryption system.*
- *You can restrict which PCs are allowed to connect to your network. To do so, from the 'MAC Address Filter' dropdown list, select:*
  - Block listed MAC addresses: to block PCs with MAC addresses listed in the MAC Address list.*
  - Allow listed MAC addresses only: to allow access to only PCs with MAC addresses listed in the MAC Address list.*
  - Off: to allow all PCs to connect to your network.*
- *To create the list of MAC Addresses that are to be either blocked or allowed connection to your network through the MAC Address Filter:*
  - Enter one or more MAC Addresses in the 'MAC Address List' textbox.*
  - Select the Add Entry icon to the right of the textbox to add a line to the table if you wish to enter additional MAC Addresses.*
- *Select **Submit**.*

## **DMZ Settings**

*It is recommended that any devices or servers that can be accessed from the Internet are located on the DMZ. A firewall is provided between the DMZ and the WAN and it can be configured to allow access to devices on the DMZ from the Internet. There is an additional Firewall between the DMZ and LAN prohibiting access to the LAN from the DMZ. This provides security to all LAN devices from access from the Internet.*

*Services that would typically be kept in the DMZ include web servers, email servers, and proxy servers.*

*DMZ functionality is not available on the Digital Base Module.*

*You configure DMZ by allocating the 4th LAN port as a DMZ port. If more than 1 DMZ device is required then an external Ethernet switch may be connected to the DMZ port.*

*Use the DMZ Settings page to set LAN port 4 as the DMZ port. To do so, from the web interface top-level menu:*

- *Select **Data / DMZ** to display the DMZ Configuration page.*

*The page provides the following status information:*

- *DMZ IP Address: displays the IP address of the DMZ.*
- *DHCP: shows whether Dynamic Host Configuration Protocol (DHCP) is enabled or disabled on the DMZ. See 'DHCP Settings' on Page 81 for information on enabling/disabling DHCP on your network.*

System PBX Lines Extensions <b>Data</b> Diagnostics			
<b>DMZ Configuration</b>			
If you wish to change the DMZ configuration, please click on the appropriate link below			
<a href="#">DMZ IP Address</a>	<a href="#">DHCP</a>	<a href="#">Firewall WAN-DMZ</a>	<a href="#">Firewall DMZ-LAN</a>
Port 4 Subnet	DMZ		
DMZ IP Address	192.168.200.1		
DHCP	Enabled		

- To enable LAN port 4 as the DMZ port, select **DMZ** from the 'Port 4 Subnet' dropdown list
- Select **Submit**.

The page also provides the following links to other pages:

- **DMZ IP Address:** select this link to open the IP Addresses page. See 'IP Addresses' on page 83.
- **DHCP:** select this link to open the DHCP Settings page. See 'DHCP Settings' on page 81.
- **Firewall WAN-DMZ:** select this link to open a page that allows you to define firewall rules for the WAN-DMZ interface. See page 88.
- **Firewall DMZ-LAN:** select this link to open a page that allows you to define firewall rules for the DMZ-LAN interface. See page 88

## Power over Ethernet (PoE) Settings

PoE provides electrical power, along with data, to the LAN Ports. The IP telephones, BT 5320, BT 5330 and BT 5360 must be powered. These telephones can be directly connected to the PoE LAN ports. If these telephones are connected to a LAN Port that is not providing power, an external hub or switch, then the BTQ Phone Power Unit IP, part number 058190, must be used.

The IP Base Module has 4 PoE LAN ports that can be used to power devices over the LAN. This functionality is not available on the Digital Base Module.

Use the Power Over Ethernet (PoE) page to enable and disable PoE on the 4 LAN ports. To do so:

- From the web interface top-level page select **Data / PoE Settings**.  
The Power Over Ethernet (PoE) page is displayed.

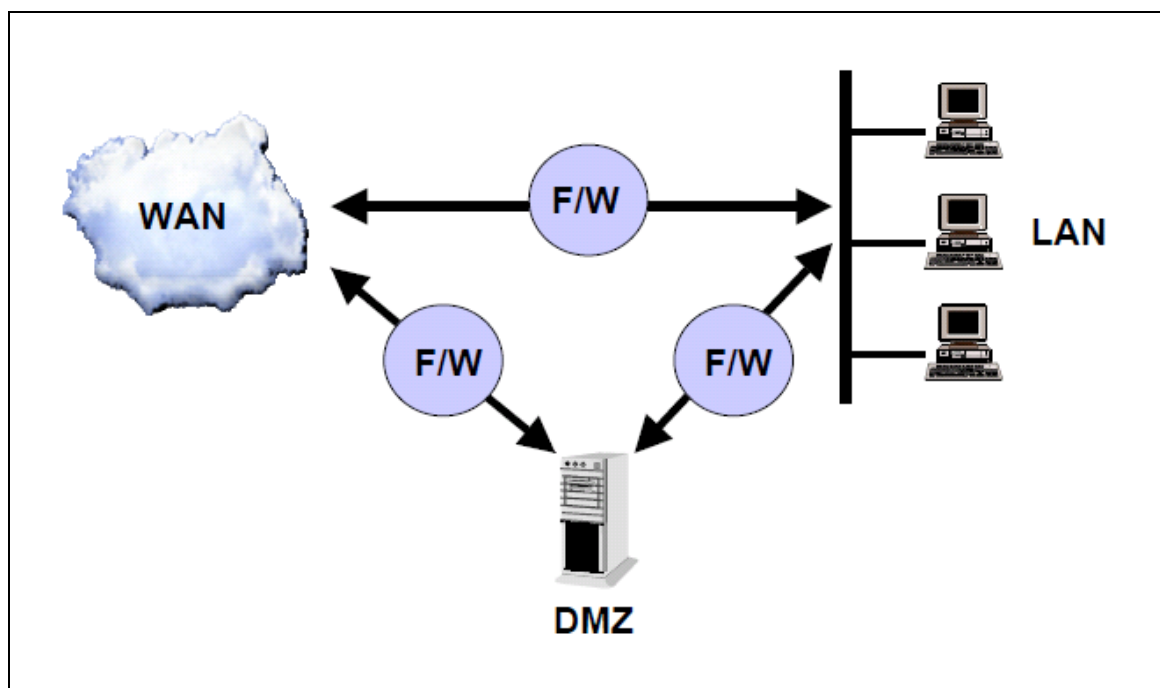
The page displays the current status of the 4 LAN ports as PoE Enabled or PoE Disabled.

To enable or disable Power over Ethernet on each LAN port:

- Select **Enabled** or **Disabled** from the dropdown list beside each LAN port.
- Select **Submit**.

## Firewall Settings

The system's network is divided into three zones: LAN, WAN and DMZ. Each of these zones is separated by a firewall. The firewall is responsible for routing traffic between the zones.



The firewall consists of packet filters that are used to control the flow of traffic between the internal LAN, DMZ, and the Internet.

All traffic passing through the system can be examined and compared to a set of packet filtering rules. Traffic can be allowed to pass through, or it can be blocked depending on the rules defined by the user.

The system's firewall has the following features:

- Stateful Inspection
- Packet Filter Definition
- Network Address Translation (NAT)
- Port Address Translation (PAT)
- Intrusion Detection

The network security functionality is responsible for ensuring that only authorised access is allowed across the network. By default, the firewall blocks all external traffic (i.e. Internet) accessing the internal network. In some cases however, you may wish to allow traffic into the network. For example, you may have a web or email server that is used to host your website or email system.

**Firewall Wizard:** This is the simplest network security page. It allows you to assign basic services (such as web or email) to servers on the internal network. The system automatically sets up the appropriate NAT and firewall rules to route external traffic to the correct port on those servers.

- Select **Data / Firewall / Firewall Wizard** to open the Firewall Wizard page.

**Firewall Pages:** In addition to the functionality that routes external traffic to internal machines, you can modify the three firewalls to either allow or block traffic. There are three separate firewalls controlling access between WAN/LAN, WAN/DMZ and LAN/DMZ. By default, no traffic is allowed from the WAN to either the LAN or DMZ.

- Select **Data / Firewall / Firewall** type you wish to configure (WAN-LAN, WAN-DMZ, or DMZ-LAN) to open one of the Firewall pages.

**Global Address Pool:** If your Broadband service is provided with static IP addresses they must be entered here so that the system can accept traffic directed to them.

Select **Data / Firewall / Global Address Pools** to open the Global Address Pools page.

## Firewall Wizard Settings

The Firewall Wizard allows you to automatically configure the firewall settings of your network to enable common applications to be available to external users.

To automatically configure your firewall, from the web interface top-level menu:

- Select **Data / Firewall / Firewall Wizard**.

### Firewall Wizard

The Firewall Wizard allows you to configure your firewall quickly for some of the common services that may be offered on your DMZ or LAN.

Define Fixed Host
WAN-LAN
WAN-DMZ

**Common Services**

Service	Server
Web Service (HTTP)	None
Secure Web Service (HTTPS)	None
File Transfer Service (FTP)	None
Remote Desktop	None
Telnet	None
Email (SMTP)	None
Email (POP3)	None
Email (IMAP)	None
VPN (PPTP)	None
VPN (L2TP over IPSec)	None

**Custom Service**

The custom service allows you to add a single opening in the firewall for a particular service you provide which is not included in the list above. You should ensure that the protocol and port chosen do not conflict with the common service list.

Service	Protocol	External Port	Server
Custom Service	-- Please Choose --	Enter single PORT number or enter range as 'first'- 'last' e.g. 20-21	None

The Firewall Wizard page is displayed.

The page allows you to set firewall and routing rules for common services.

The page lists the set of common services in the Service Column.

For each Service there is a drop down menu in the Server Column. This dropdown shows the IP and MAC addresses for all devices connected to the LAN and DMZ.

By default, the services are disabled by the firewall.

To set the firewall to enable a specific service on a device connected to either the LAN or DMZ:

- For each required service, select an IP host from the dropdown list.  
The service is assigned to the selected IP host on the LAN or DMZ.  
The firewall is automatically configured for this service and traffic is directed to the assigned host.

To assign a service to a host that is not on the dropdown list, select **Define Fixed Host** and enter the information required to add an IP Host to the dropdown list. See 'Defining a Fixed Host' below for further information.

## Defining a Custom Service

If the required application is not one of the services defined in the Service list in the Common Services you can define it in the Custom Service Pane.

Select the Protocol, TCP, UDP or TCP and UDP for the service in the Protocol Drop Down menu

Enter the external Port or range of ports in the External Port box

Select the device the application is hosted on from the Server Dropdown list.

Select **Add Entry**.

The firewall is automatically configured for this service and traffic is directed to the assigned host.

### Other links on the Firewall Wizard page

The following links on the Firewall Wizard page allow you to open subpages:

- Select the **Define Fixed Host** link to open a page that allows you to define a fixed host for use in the common services page. See 'Defining a Fixed Host' below.
- Select one of the other links to open pages that allow you to define custom firewall settings manually. See 'Advanced Firewall Settings' below.
  - WAN-LAN: to enable and configure your WAN-LAN firewall.
  - WAN-DMZ: to enable and configure your WAN-DMZ firewall.

## Global Address Pools

A NAT global address pool is a range of IP Addresses that can be seen by the outside network. An IP Address from the pool can be mapped (with Reserve Mappings) to a specific inside Host, enabling NAT to translate packets between the two addresses.

Please note, changes to the Global Address Pool will restart all network connections (including DSL).

- Select **Data / Firewall / Global Address Pools** from the web interface top-level page.
- Enter the IP addresses and select **Submit**.

## Defining a Fixed Host

Use the Fixed Hosts page to define a fixed host for use in the Firewall Wizard page. Once defined, the host will appear on the dropdown list of the wizard page.

To open the Fixed Hosts menu:

- Select **Data / Firewall / Fixed Hosts** from the web interface top-level page, or select **Define Fixed Host** from the Common Services page.

The Fixed Hosts page is displayed.

- Select **Add Entry**.
- Enter the MAC address and the IP Address of the host to be defined.
- Select **Submit** to save the new host.



## Secure Remote Extensions

For security reasons the number of SIP requests from an IP address is limited. This is to stop repeated SIP registration attempts from accessing the system. If a genuine remote extension is likely to generate a large volume of short calls than the IP address of the extension should be entered here so that the restriction does not apply to it.

## Firewall Settings

Using the Firewall pages, you can edit the packet filter rules that apply to your WAN-LAN, WAN-DMZ, and DMZ-LAN firewalls. These rules are used to control IP based traffic across the interface, based on the IP Address of the Source and Destination.

To manually configure one of the firewalls, from the web interface top-level menu:

- Select **Data / Firewall / Firewall type** you wish to configure (WAN-LAN, WAN-DMZ, or DMZ-LAN).

The firewall page for the selected firewall is opened. The description used below is for the WAN-LAN page. The WAN-DMZ and DMZ-LAN pages follow the same description.

The firewall pages are broken up into three panels:

- **Firewall Restart:** When modifications are made to firewall policies, the firewall must be restarted in order for those policies to come into effect. The Firewall Restart panel provides information on the time since the last restart and a link to restart the firewall. If the firewall rules have changed since the last restart, then a notice will be displayed informing you that a restart is required.
- **WAN to LAN Traffic Policies:** This panel allows you to define policies to allow or block traffic from the WAN to the LAN. A policy will create a specific firewall rule and also any NAT/PAT rules required to translate addresses or ports.
- **Advanced Traffic Policies:** This panel allows you to define policies that filter traffic in both directions (WAN to LAN and LAN to WAN). It does not do any NAT/PAT translation.

## Adding or deleting WAN to DMZ policies

To add a new rule to the firewall policy set:

- Select **Add Entry** on the WAN to DMZ panel to open the Edit Firewall Policy page.
- Select **Port Forwarding** or **Reserved Mapping** from the dropdown. Port Forwarding rules will perform NAT/PAT translation on the traffic going from WAN to DMZ. Reserved Mapping rules allow you to associate traffic aimed at a specific IP address from the Global Address Pool with a specific IP address on the DMZ.
- Enter a name for the new rule in the 'Name' textbox. Each rule must have a unique name.
- Specify whether the rule applies to inbound or outbound traffic by defining the source and destination of the traffic to which the rule will be applied.
- If you are creating a Port Forwarding Rule enter the Source IP Address in the textbox. If you are creating a Reserved Mapping Rule, then enter the Global IP Pool Address in the textbox.
- Define the protocol to which the rule will apply by selecting the appropriate protocol from the 'Protocol' dropdown list. Depending on the protocol you may also have the possibility to define an external port.
- Enter the destination IP Address in the textbox. This will be an IP address on your LAN.
- Enter the destination port (or range of ports).
- Select **Submit**.

Once you hit submit the policy is created but not activated. To do this you must go back to the firewall page. Once on this page you will see a notice informing you that you must restart the firewall for the policy to be activated.

## Adding or deleting Advanced Traffic policies

To add a new rule to the firewall policy:

- Select **Add Entry** on the Advanced Traffic Policies panel to open the Edit Advanced Firewall Policy page.
- Enter a name for the new rule in the 'Name' textbox. Each rule must have a unique name.
- Select the source from the 'Source' dropdown list.
- Select the destination from the 'Destination' dropdown list.
- Select the Protocol or enter the Protocol Number if the required protocol is not one of the common ones shown in the dropdown list.
- Enter the source IP Address in the textbox.
- Select the destination IP address from the 'Destination IP Address' dropdown list. This will be an IP address on your LAN.
- Select the Data Access permitted. This will be either **Allow** or **Block** depending on the type of access you wish to grant to this traffic.

Once you hit submit the policy is created but not activated. To do this you must go back to the firewall page. Once on this page you will see a notice informing you that you must restart the firewall for the policy to be activated.

To delete a firewall policy, select the icon beside the policy in the main firewall page.

## WAN Access

The facility is provided to provide access from the WAN to the Web Interface or Unified Communications. It is important that this is only allowed when the system is connected to an Enterprise LAN and not directly to the Internet.

- Select **Data / Firewall / Wan Access**.
- Select the option required for the Web Interface or Unified Communications.
- Select **Submit**.

## Ping Response

This option allows or restricts Ping Responses to the LAN, DMZ or WAN. In default responses to PINGS from the LAN and DMZ are allowed but are prohibited from the WAN.

- Select **Data / Firewall / Ping Response**.
- Select the options required.
- Select **Submit**.

## Firewall Reset

The Firewall Reset page allows you to reset your firewall and NAT settings to the factory defaults.

To perform a firewall reset, from the web interface top-level menu:

- Select **Data / Firewall / Firewall Reset**

*The Firewall Reset page is opened.*

- Select **Perform reset of Firewall Settings**.

## ***IDS Settings***

*The system is protected by an Intrusion Detection System (IDS). Intrusion detection is used to detect and block incoming attempts to attack or block traffic to the site.*

*To enable or disable IDS, from the web interface top-level menu:*

- Select **Data / IDS Settings** to open the IDS Settings page.
- Select **Yes or No** from the 'Intrusion Detection Enabled' dropdown list to enable or disable IDS.
- Select **Submit**.

# Diagnostics and Troubleshooting

The Diagnostics pages allow you to view the current status of your system, track usage data and perform tests required for system maintenance. Use the Diagnostics pages to:

- Display the current status of your hardware, lines, extensions, calls, network and firewall.
- View the reset history of your network.
- View a log of system-related events.
- Retrieve call-logging output.
- Test the status of the network connection and the broadband connection.

To display one of the following status pages, select **Diagnostics**, then the status page you require.

## Hardware Status

The Hardware Status page lists the hardware connected to each slot of the base and expansion modules of the system. in the format shown below.

To open the Hardware Status page, from the web interface top-level menu:

- Select **Diagnostics / Hardware Status**.

All the modules, Base Module and Telephony Expansion modules, and the fitted cards, are shown.

## Line Status

The Line Status page displays the Line number, Line type and the port the line is connected to.

To open the Line Status page, from the web interface top-level menu:

- Select **Diagnostics / Line Status**.

## Call Status

The Call Status page provides a number of options to show the current or historical details of Lines and extensions calls.

To open the Call Status page, from the web interface top-level menu:

- Select **Diagnostics / Call Status**.

VL	CallerID	Name	State	C
----	----------	------	-------	---

Select **All**, **Lines** or **Extensions** from the first Drop down box. All will show the details for both lines and extensions, Lines will show the details for Line calls only and Extensions will show the details for Extension calls only.

Select **Active** or **Old**. Active shows the current calls in progress. Old shows the history of previous calls.

Select **Summary** or **Detail**. Summary shows a limited number of elements and detailed shows more details.

Select **No Refresh** or **10 sec** or **15 sec** or **30 sec**. If No refresh is selected then the current call status is displayed. If one of the refresh times is selected the screen will update with a new call status at the selected interval.

Select **Submit**.

## **Network Status**

The Network Status page displays current status of the various elements of the WAN, LAN and WLAN.

When the web interface is accessed the first page displayed is the Network Status page.

The page can also be opened from the web interface top-level menu:

- Select **Diagnostics / Network Status**.

The following elements are displayed:

**WAN Status.** The following parameters relate to the WAN connection on the system.

**ADSL:** This shows the status of the ADSL connection. The status 'Active' shows that the ADSL line is connected and operational.

**Internet (ADSL):** This indicates whether the Internet is accessible via the ADSL line. When 'Connected' is shown it indicates that the Internet is available. In most cases where the Internet is not connected the most likely cause is that an incorrect Username or Password has been entered for the ADSL connection.

**HSPA Device – Connection:** When Active is shown it indicates that a HSDPA dongle is installed and access to the Internet over the device is possible.

**HSPA Device:** This indicates that a HSPA dongle has been detected as installed in the system. The dongle is connected top one of the USB connectors on the base module.

**IP Address:** This is the WAN IP address of the system. This is the address that is used when programming remote IP phones.

**Subnet Mask:** This is the subnet mask of the IP Address above.

**Gateway:** This is the IP Address of the Internet Service Provider server. The Internet traffic from the system is sent to this address.

**Primary DNS:** This is the IP address of the Primary DNS server used by the system.

**Secondary DNS:** This is the IP Address of the Secondary DNS server used by the system.

LAN Status: The IP Address of the LAN is displayed.

**IP Address:** The IP Address shown is the LAN IP Address. This is 192.168.199.1 in default.

**Subnet Mask:** This is the subnet mask of the LAN IP Address. It is 255.255.255.0 in default.

**DHCP Settings.** DHCP can be enabled or disabled for both the LAN and DMZ. The status Enabled or Disabled is indicated for both here.

**Hardware status:** The following hardware information is displayed:

**System serial number:** This is the serial number / Hardware ID of the base module. This is the number that is used for licencing purposes.

**Uptime:** This is the duration the system is running since the last power up.

**Software Release:** This is the software version running in the system.

**Hardware Rev:** This is the hardware revision of the base unit.

## **Firewall Status**

The Firewall Status page displays the current rule settings of the 3 firewalls:

- The firewall between the WAN and the LAN
- The firewall between the WAN and the DMZ
- The firewall between the DMZ and the LAN

The page also displays traffic and packet counts for the firewalls. To reset the traffic and packet counters:

- Select the **Reset Counters** link.

## **Reset History**

The Reset History page displays a list of the last 10 system resets.

To open the Reset History, from the web interface top-level menu:

- Select **Diagnostics / Reset History**.

The last ten reset events are displayed showing the date and time that the reset occurred and a description of cause of the reset:

The main reasons given are:

*fw\_upgrade:* This indicates the reason was that the firmware was changed. A reset always occurs when this is done

*power:* this indicates the system was powered down and up again

*ast\_watchdog:* This indicates that the system encountered a problem and the watchdog initiated a system reset.

## **Day one Backup / Restore**

The database is backed up to the USB flash drive and can also be restored. This allows the configuration at initial installation to be backed up to the USB flash drive and it can also be restored to return the system to its initial configuration.

- Select **Diagnostics / Day one Backup/Restore**.
- Select **Backup the day one one configuration**.

The database is automatically saved to the USB flash drive. The prompt Database saved to the USB flash drive is shown when the operation is completed.

To restore the database select **Restore the day one configuration**.

## Logging and Tracing

Two options are provided **Logging and Tracing** and **D-channel Logs**

### Logging and tracing

The **Logging and Tracing** page allows detailed debug information to be retrieved from the system for detailed engineering analysis. In default the information is stored in the system and the files can be retrieved on site. The additional settings should only be set under instruction from a BT Maintenance engineer as some of the settings may affect the system performance.

To open the **Logging and Tracing** page, from the web interface top-level menu:

- Select **Diagnostics / Logging and Tracing**.

The **Logging and Tracing** page is displayed.

Setting	Value
Rotate archived logs when full	<input checked="" type="checkbox"/>
Include firewall logs	<input checked="" type="checkbox"/>
Include intrusion detection logs	<input checked="" type="checkbox"/>
Increase the call control verbosity	<input type="checkbox"/>
Enable SIP debug messages	<input type="checkbox"/>
Enable Remote Logging	<input type="checkbox"/>
Remote Logging URL	
Enable Remote Archiving	<input checked="" type="checkbox"/>
Remote Archiving URL	https://195.27.3.183/osip/

[Retrieve all log files](#)  
[Delete all archived log files](#)

- Select the checkboxes to set the **Logging and Tracing** parameters as required:

**Rotate archived logs when full:** Select the checkbox if you wish to configure the system to rename and archive old log files when they are full, and to start new files. This is set on in default so the logs may be retrieved by selecting **Retrieve all log files**.

**Include firewall logs:** This is set on so that retrieved log files will show the firewall activity. The default is that this setting is off.

**Include intrusion detection logs:** This is set on so that retrieved log files will show the Intrusion detection activity. The default is that this setting is off.

**Increase call control verbosity:** This increases the amount of information stored in the log files. The increased activity caused by increasing the verbosity may affect the system performance so should only be used if instructed to do so by a BT Maintenance Engineer.

**Enable SIP debug messages:** This setting logs VoIP messages. Again this should be enabled under instruction from a BT maintenance engineer

**Enable Remote logging:** This setting outputs the log in real time to a LAN address. As this increases the load on the system it should only be set under instruction from a BT maintenance Engineer.

**Remote Logging URL:** Enter the specific LAN address for remote logging if **Enable Remote Logging** has been turned on.

**Enable Remote Archiving:** This is set to intermittently send the files to an external server for detailed Engineering analysis.

*Remote Archiving URL: This is the address of the remote served used for remote archiving if Enable Remote Archiving has been turned on. The default setting should not be changed unless instructed to do so by a BT Maintenance Engineer.*

- Select **Submit** to save the settings

Two links on the Logging and Tracing page allow you to retrieve or delete the log files.

To retrieve log files:

- Select the **Retrieve all Log Files** link.

To delete log files:

- Select the **Delete all Archived Log Files** link.

*In the example shown above the Remote Archiving has been activated. When this is done the following page is displayed. This shows that the Remote archiving is active.*

Setting	Value
Rotate archived logs when full	Enabled
Include firewall logs	Enabled
Include intrusion detection logs	Enabled
Increase the call control verbosity	Disabled
Enable SIP debug messages	Disabled
Enable Remote Logging	Disabled
Remote Logging URL	
Enable Remote Archiving	Enabled
Remote Archiving URL	https://195.27.3.183/osip/

[Disable](#)

[Retrieve all log files](#)  
[Delete all archived log files](#)

Select **Disable** to de-activate Remote Archiving

## D-Channel Logs

*This option provided detailed ISDN logging on Basic Rate and PRI circuits. It is used when analysing issues on ISDN Lines.*

- Select **Diagnostics / Logging and Tracing / D-channel Logs**.

**D-channel Logs**

Enable D-channel Logs

Archive D-channel Logs

Start time for archiving of D-channel logs (HHMM)

[Clear](#) [Submit](#)

[Retrieve Dlog files](#)  
[Delete all archived Dlog files](#)

- Select **Enable D-channel logs**



- If you are leaving the logs running for any period you should also select **Archive D-channel logs**.
- The time that the logs are archived is set at midnight in default. If you wish to change this enter the new time in 24 hour format.
- To retrieve the files select **Retrieve Dlog files**.
- To delete the archived files select **Delete all archived Dlog files**.

When the logs needed to debug the problem have been retrieved the logging should be disabled by unticking the boxes and the archive should be deleted by selecting **Delete all archived Dlog files**.

**Note:** If the system is equipped with a PRI card the option for PRI logging is shown. If both PRI and BRI cards are equipped the options for both PRI and BRI logging are presented

## Call Logging

The system maintains a record of calls. To enable or disable Call Logging on your system, from the web interface top-level menu:

- Select **Diagnostics / Call Logging** to open the Call Logging page.

The screenshot shows the 'Call Logging' page in a web interface. At the top, there is a navigation bar with 'System', 'PBX', 'Lines', 'Extensions', 'Data', and 'Diagnostics'. The main content area has the title 'Call Logging' and a subtitle 'This page allows the user to retrieve and clear the call log'. Below this, there is a form with a dropdown menu labeled 'Call Logging' which is currently set to 'Enabled'. To the right of the dropdown are two buttons: 'Clear' (with a red 'X' icon) and 'Submit' (with a green checkmark icon). Below the form, there are two links: 'Retrieve Call log' and 'Clear Call Log'.

- Select **Enabled, Disabled or Restricted** from the Call Logging dropdown list. The settings are used as follows:
  - Enabled** – All calls are logged.
  - Disabled** – No calls are logged.
  - Restricted** – All calls are logged, however the last 4 digits are replaced with XXXX.
- Select **Submit**.

To retrieve or clear call logs, from the web interface top-level menu:

- To retrieve call logs, select the **Retrieve Call Log** link.
- To clear call logs, select the **Clear Call Log** link.

## Ping Test

The Ping Test page allows you to test the network connection status using a ping test.

To use the test, from the web interface top-level menu:

- Select **Diagnostics / Ping Test**.

The Ping Test page is displayed.

- In the Host textbox, enter the IP address or URL of the host you wish to ping.

- Select **Submit**

*The results of the ping test are displayed on the screen.*

## ***Fixed Broadband Test***

*The Fixed Broadband Test page displays the following fixed broadband information for your system:*

- *Link operational state*
- *Upstream and Downstream*  
*Connection rate*  
*Maximum attainable bit rate*  
*Line attenuation*  
*Line margin*
- *CRC (cyclic redundancy check) and FEC (forward error correction)*  
*Upstream (Transmission) Path*  
*Downstream (Receive) Path*
- *Firmware version*

*To open the Fixed Broadband Test page, from the web interface top-level menu:*

- Select **Diagnostics / Fixed Broadband Test**.

*The results of the Fixed Broadband test are displayed on the screen.*


## Appendix I: Options

The following table lists the options available with the system.

Option	Capacity	Notes
Analogue Lines	16	
ISDN Basic Rate Accesses (2 ISDN Lines per Access)	8	
ISDN PRI	16	8 channels provided with the card.
ADSL Interface	1	
Internal LAN 10/100 Base T	4 PoE	IP Base Module Only
Systemphones	48	48 Extensions Module dependent (EC Analogue extension, EC digital)
Standard telephones	48	
DECT	4	
Programming extension	1	Extension 201 (default)
Operator extension	1	Extension 201
Headset operation	Yes	
Door Intercom	1	
Door Open Relay	1	
Public Address connector	1	
Outgoing (Line) Groups	11	
Extension groups Hunt groups Ring groups	20	A total of 20 extension groups
Extension voice mailboxes	48	
Group voice mailboxes	20	
Customised Courtesy Service	Yes	
System voicemail box Service	Yes	
Auto Attendant Service	Yes	
Speed Dial – System	1000	
Speed Dial - Personal	50	
Classes of Service (Call Restriction)	6 classes	4 Tables of Codes
Conference Calls	3 participants	Maximum 3 simultaneous conferences
Call Logging	Yes	
Internal/External Music On Hold sources	Yes	
Remote maintenance and programming	Yes	
Remote diagnostics	Yes	
Remote teleworker	Yes	
Fixed Mobile Convergence	Yes	
Night/Day service	Yes	
Auto Attendant	Yes	
Telesecretary	Yes	

## Appendix II: Feature Codes

The following table lists the feature codes that can be used with the system.

Note that in the table the letter R indicates the Recall key, which is the  key on the BT 8528 and BT 8568 systemphones.

Feature	Code	Feature	Code (R = Recall key)
Account Code: before call	796 xxxx	Log Out of All Groups	723*0
Account Code: while on a call	R797 xxxx	Log In/Log Out of one group	723 xxx (Group No.)
System Voicemail On/Off	737	Log In to All Groups	723*1
Auto Answer On/Off (BT 8528 Systemphone only)	705	Line Access – Group I	9
Background music (BT 8528 Systemphone only)	706	Line Access – Groups 2–II	760 - 769
Call Pick-up (directed to an extension)	726 xxx	Night Service (extension 201 only)	738
Call Toggle – FMC- Retrieve call	787	PA Announcement	720
Call Toggle – FMC- Send call	R788	Page – Systemphones	716
CLIR activation	724	Page All	730
Conference	R3	Page – Voice call	715
Divert All	732 xx	Paired Extensions: switch phones	702
Divert on Busy	733 xx	Parallel Ringing On/Off	790
Divert on No Answer	734 xx	Parallel Ringing On/Off Times	791 (HHMMHHMM)
Do Not Disturb – set/cancel (Not valid for extension 201)	736	Parallel Ringing Weekend Service	795
Door Open – when not on a call	731	Park Calls	R722 (1-5)
Door Open – when on a call	R731	Pick Up Parked Call	712 (1-5)
Extension Groups I-10	180 -189	Redial	77
Extension Groups II-20	190 -199	Reminder Call	718 HHMM
Extension Group II	0	Reminder Call Cancel	718
Extension Lock – change code	714 xxx yyy	Reset Telephone	739
Extension Lock - lock/unlock	713 xxx	Return and Hold in Two Call Handling	R2
Extension Numbering (default)	201-248	Return and Release in Two Call Handling	R1
External Call Hold	R	Ring Back	R5
External Call Retrieve from Hold	719	Ring Tone Change (BT 8528 Systemphone only)	703
Follow Me (with Personal code)	735 xx	Room Monitor	798
Forward Recall	R728	Speed Dial Access (Personal)	7401-7450
Group Divert All Calls	792 (180 – 199) xxx#	Speed Dial Programme (Personal)	7501-7550
Group Divert on Busy	793 (180 – 199) xxx#	System Speed Dial Access	4001-4999
Group Divert on No Answer	794 (180 – 199) xxx#	Voicemail (See Note below)	710
Key Programming (BT 8528 Systemphone only)	727	Voice mail access (See Note below)	*

Note: The code 710 is used when you are forwarding calls to your Voice Mail box e.g. dial 732 710 to forward all your calls to your voice mailbox. To access the voice mail from your telephone dial \* and follow the voice prompts.

Note: When codes are dialled to programme or access a facility there may be a slight delay before the code is accepted. You may dial # after the code to eliminate the delay.



Marking on this equipment indicates  
Compliance with the following:

This device conforms to Directive 1999/5/EC on Radio  
Equipment and Telecommunications Terminal  
Equipment as adopted by the European Parliament.



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