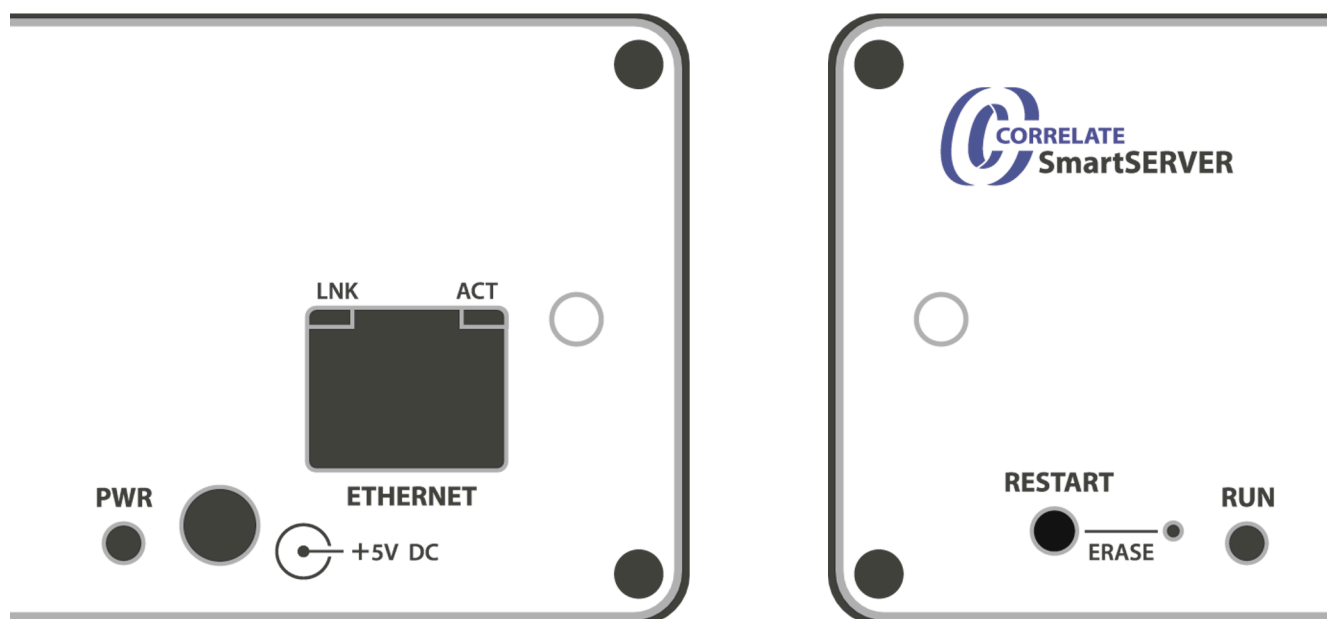


Instruction Manual for SmartSERVER



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Ongoing Product Development

The **SmartSERVER**, its internal software and this manual is subject to ongoing development. As such some of the features and characteristics described in this manual may not apply to your particular unit. It is recommended that the **SmartSERVER** always be updated to the latest compatible software.

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INTRODUCTION

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Foreword

For C-Bus equipped installations, inclusion of a **SmartSERVER** provides an intuitive interface which can be accessed on smartphone, tablet and a range of other computing devices. There is no need to worry about finding and installing a software 'app' compatible with each of your devices, rather **SmartSERVER** leverages off the capability of an already installed web browser to deliver an app like experience.

Your investment in **SmartSERVER** is rewarded with an easy to maintain and configure product, which for ongoing use requires no technical knowledge of the installed C-Bus system. Via an uncluttered interface it is a simple matter to confidently reconfigure key operations to make changes either you, your employees or family may require in the future.

As an installer you can deliver better value for money to your customers, because installation and configuration can be completed in a fraction of the time previously needed to deliver similar functionality.

This Manual

It is likely that in referring to this manual you will be doing so as either an end User, Administrator or technical Installer. Don't be intimidated by the content size, we have tried to provide comprehensive information that aims to help on those hopefully rare occasions that you need it. The content has been conveniently grouped into what are three essentially stand alone document sections:

- **Part 1 -User Manual**
- **Part 2 -Administrator Manual**
- **Part 3 -Installer Manual**

For example, as a User we recommend you just skip straight through to Part 1 after reading this introduction.

Not sure where you fit? We have used the following definitions of roles within this manual:

- (1) A User wants to be able to access C-Bus system from their chosen device, understand the interface and be able to monitor and control things.
- (2) The Administrator is responsible for ensuring that **SmartSERVER** settings meet user requirements and preferences. This may include controlling password access to the **SmartSERVER**, or the simple process of re-assigning keys. Typically the Administrator will also be responsible for managing the home or building computing network.
- (3) An Installer is responsible for the initial physical installation of the **SmartSERVER** and entry of specific integration parameters to match those of the installed C-Bus system. In many cases this will be the C-Bus Systems Integrator.

Naturally you need not be constrained to just a single role, for example an **Administrator** is also likely to be a User, and an Installer may also be providing an ongoing administrative management service for you.

SmartSERVER Equipped Installation

The **SmartSERVER** is just a component of an automation solution and works with supporting infrastructure. As a minimum the following must also be present:

- Wired C-Bus system to control and monitor
- A source of power
- One free ethernet port on the router/modem (or equivalent network access port provided elsewhere)

Many potential client devices that work well with the **SmartSERVER** rely on wireless connectivity to communicate. To support the use of these wireless devices, a path into your local network needs to exist. So depending on your specific access requirements you may also require one or both of the following in place:

- Local area network (LAN) router with WiFi capability (fast local access)
- LAN with internet access (local and remote access)

Of course for the latter to work, the client device will also need to be able to connect to the internet in its own right, such as over a 3G or 4G phone network. The **SmartSERVER** includes special features (Section 2.3.2, page 20) that can help you establish a fixed point of presence on the internet. This is useful not only when using a wireless device but remote internet enabled computers as well.

A pictorial representation of how all these devices can potentially interconnect is given in Illustration 1.

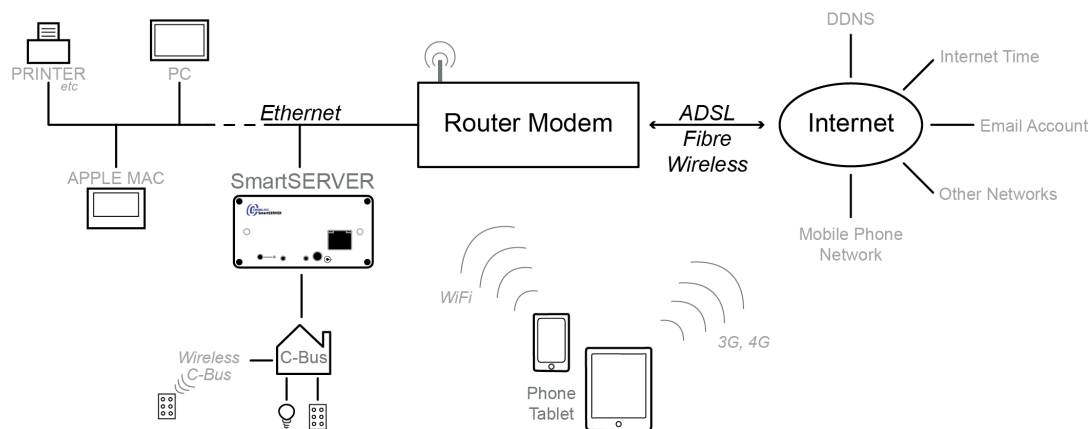


Illustration 1: Interconnectivity

Product Description

The **SmartSERVER** is compact in design and intended for permanently mounting against a flat surface. Correlate recommends installation is performed by an integration professional with knowledge of your particular C-Bus system.

A **SmartSERVER** adds a number of convenient features to enhance the functionality provided by a standard C-Bus system including:

- Allowing computing devices to access and control C-Bus lighting, schedules, scenes and other applications (inc. Web Server)
- Eliminate C-Bus drift which affects both time display and inbuilt scheduling by synchronising with internet time (NTP client)
- Receive email notification when selected changes or conditions occur (Email client)
- Maintain a fixed url on the internet to support remote access (DDNS client)

In larger or commercial applications multiple **SmartSERVERs** may be simultaneously installed to achieve additional capacity, redundancy or separation of administrative responsibility. **SmartSERVERs** ease of reconfiguration and access management make it the perfect complement to an already installed Building Management Systems (BMS).

SmartSERVER is a low power device, generates insignificant levels of heat and is completely silent in operation. It will typically recover within several seconds of having power restored after an outage. Removal of the power, or ethernet connection, will not interfere with other aspects of the connected C-Bus installation.

For those customers requiring it, the **SmartSERVER** also supports encrypted end to end web connections employing the latest TLS1.2 security standard (successor to SSL).

All physical controls and indicators are located on the front panel. A more comprehensive overview of the current **SmartSERVER** operational and configuration status is available by accessing the About menu (Section 1.3.2) from your connected device.

Additional helpful information including, product brochures, can be found on our website (www.correlate.com.au).

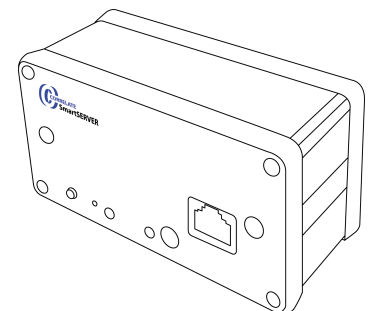


Illustration 2: SmartSERVER

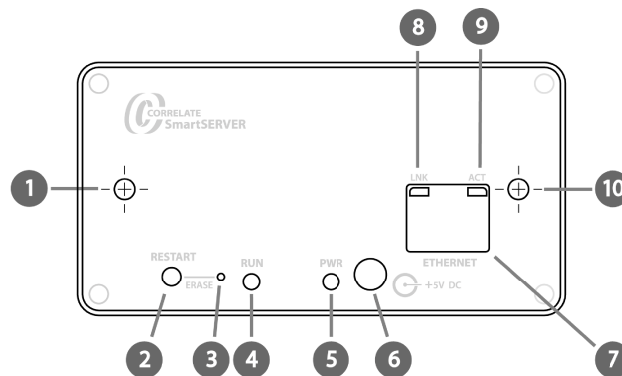


Illustration 3: Front Panel

Label	Name and Description
1, 10	Entry point for retention screws used to fix the unit in place.
2	RESTART button is momentarily pressed then released to restart the SmartSERVER .
3	ERASE button is accessed using a small blunt item such as a paper clip end. Depress ERASE and hold during a RESTART. Release after LED flashes to erase all configuration data and return factory default settings.
4	RUN indicator flashes at approximately 1 second intervals during normal operation.
5	PWR indicator illuminates when external DC power is present.
6	+5V DC supply input for powering the SmartSERVER (centre positive). Mates with standard 5.5mm/2.0mm type barrel connector.
7	ETHERNET network interface accepts Cat 5e, Cat 6 patch cable with RJ45 connector.
8	LNK (link) indicator illuminates when an Ethernet network is present.
9	ACT (activity) indicator illuminates during ethernet network data activity.

Table 1: Front Panel Features

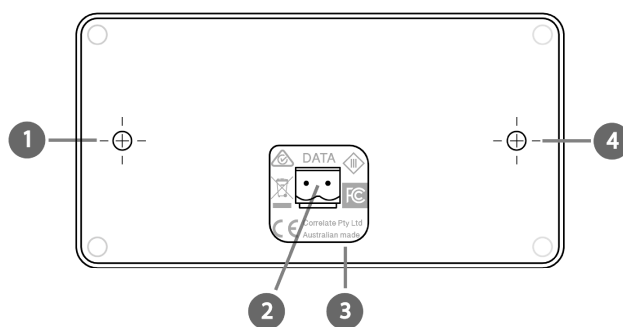


Illustration 4: Rear Panel

Label	Name and Description
1, 4	Exit point for retention screws used to fix the unit in place.
2	C-Bus network connection. Mates with TE Connectivity 2 pin 5.08mm Termi Blok connector (supplied).
3	Conformance and approval details.

Table 2: Rear Panel features

Document Formatting Conventions

The following style conventions are adopted within this manual:

BUTTON is something that can be touched/clicked on to initiate an action (e.g. Go to another screen, Submit entered data).

INPUT FIELD represents an on screen field into which data can be entered, or a selection made.

1st menu > **2nd menu** shows a sequence on menu selections read left to right.

NOTE: This is a note or hint with information which may be of immediate relevance.

WARNING: This is a warning which contains important information which needs to be conveyed, and understood by the reader before proceeding.

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1.1 Overview

This section and its instructions are relevant to anyone wishing to make ongoing use of the **SmartSERVER** to control and monitor a C-Bus system.

Your **SmartSERVER** has already been installed and configured for you, in the context of this manual you are considered a User.

NOTE: If you are an Administrator or Installer please first proceed to Part 2 (page 15) or Part 3 (page 28) respectively of this manual.

Logging in as a User will give you access to certain control and monitoring capabilities set-up for you by the **SmartSERVER** Administrator. To proceed further they will need to have provided you with the following:

- the **SmartSERVER** network address,
- a login account name, and
- an account password.

So that you get the most out of your **SmartSERVER** it is recommended that you read through the next few pages to get a basic understanding of the product. If you don't have time right now, and someone can set things up for you, just skip through to section 1.3.4 on page 11 (which covers interaction with a Keypad).

1.2 General Information

The **SmartSERVER**, as the name implies generally functions as a "server". The device you use to access it, be it personal computer (PC, Mac etc), tablet, phone or something else, is considered a client. Not surprisingly software on the client is referred to as 'Client Software'.

Some **SmartSERVER** features operate continuously in the background irrespective of whether you are currently connected to it or not. These features include:

- C-Bus time synchronisation
- E-mail notification dispatch

1.2.1 Client Devices

You can enjoy the benefits of having a **SmartSERVER** installed with a wide range of personal ethernet enabled computing devices available from different manufacturers.

Most typically these devices include:

- Desktop PC (or Mac)
- Laptop (or Notebook)
- Tablet
- Smartphone

For those devices with a touch screen, **SmartSERVER** also makes use of swipe gestures to conveniently navigate between virtual Keypads.

You do not need the very latest client device, some older models, including the iPhone 3 for example, have more than enough capability. The **SmartSERVER** has many inbuilt features specifically aimed at automatically supporting a range of older legacy products.

All manufacturers do things a little differently, so some features may not operate precisely as described here, or in some very limited cases not be supported at all.

1.2.2 Client Software

Most of us are familiar with "apps" (applications) that can be loaded onto a device to do all sorts of great things. Each operating system (Android, iOS, OSX, Windows, LINUX etc), and version releases thereof, however have differing underlying requirements. It is often the case that an app may be available for one but not another, or isn't yet supported on a recent operating system update.

Clients connect with your **SmartSERVER** via standard internet protocols (TCP/IP & http/https) which means that your devices inbuilt web browser is the client software.

Not having to install a software app can have other benefits:

- ideal for giving a guest temporary access
- employer does not permit installation of personnel software on their IT equipment
- want to immediately update to that just released OS version (without losing **SmartSERVER** accessibility)
- permits wider use of niche type products as clients

There are many browsers available and **SmartSERVER** has been tested with most of them including, Firefox, Internet Explore (IE9 and later), Safari, Chrome and Mercury.


Favourite browser not listed? If its World Wide Web standards compliant you should not have any problems.

NOTE: Most browsers have Javascript enabled by default. You need to have JavaScript enabled to access the SmartSERVER.

1.2.3 Connection Protocol

The **SmartSERVER** supports both http (standard) and https (secure) connections. A configuration option set by the Administrator may mandate use of https by all Users when connecting to the **SmartSERVER**.

Https is employed by websites to help protect sensitive data, you will often see a padlock or similar displayed in the browsers URL address bar when connections of this type are active. **SmartSERVER** supports the latest TLS1.2 security standard (successor to SSL3.0, TLS1.0, TLS1.1) for those users requiring it.

The Keypad interface's display will also show a  when https is in use, which is a convenient visual indicator when running in full screen mode on a phone (where the URL bar is not visible).

Using https will help protect your login details and data but is inherently slower to initially connect, and thereafter uses more resources within both the **SmartSERVER** and your accessing device.

Generally connections contained within a local network are protected from external attack by your routers firewall so use of https may be unnecessary in those instances.

Most users opt to use:

- http with local network devices
- http on their mobile device when connected to their local WiFi networks
- either http or https on their mobile devices when away from the home or office network

In most instances this approach provides an adequate level of security, and by limiting the number of https connections permit a larger number of **SmartSERVER** users simultaneous access.

WARNING: You should understand the security implications of connecting to the SmartSERVER over the internet or your local network and assess whether the implications of a security breach are acceptable to you.

1.2.4 Data Usage

The **SmartSERVER** has been optimised to balance the often competing requirements of minimal data usage and responsive update.

A number of modern techniques have been employed to minimise overall data traffic, including:

- Small, efficient webpage coding
- Vector icons (instead of image files)
- AJAX technology updates only dynamic content
- Style sheets shared and session cached (stored)
- Local device caching
- Update rate based on local or remote connection

Whilst each individual status update is negligible in size, the cumulative data throughput of a continuously open connection will become more significant over time. Depending on the data allowance of your connection plan this may become important to you if accessing the **SmartSERVER** from outside of your local wired or WiFi network.

On many phone and tablet devices moving away from the current screen or web browser tab will temporarily suspend data transfer until you return. Likewise activation of a screen saver or entering a sleep mode will often have a similar affect.

Connections secured using https will use more data than an equivalent one using standard those http (see 1.2.3).

A particular devices characteristics, configuration settings, your access habits and the available data allowance will all likely play a part in how you optimally manage remote access.

WARNING: It is recommended that data usage is carefully monitored, at least at first, to determine if your combined usage including SmartSERVER remote access is likely to exceed data plan allowances.

1.3 First Use

1.3.1 Welcome (Log In)

The home screen for the **SmartSERVER** can be accessed without needing to log in. If the basic network address for the **SmartSERVER** is entered without any other information the Login screen (Illustration 1.1) will appear.

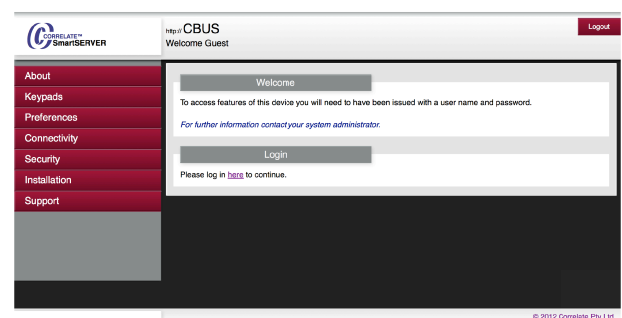


Illustration 1.1: Login screen

If you have created browser links, shortcuts or use the history feature of your browser, this login screen can be completely bypassed by proceeding directly to the screen of interest. In all cases you will be automatically prompted to enter any required login details.

Login Screen

Step

1. Open the web browser (e.g. *Chrome, Firefox, Internet Explorer, Safari, etc*) on your device
2. Confirm you have a network connection before proceeding further (e.g. *can I access other network devices, the Internet etc?*).
3. Navigate to the login page by entering the URL path in the usual way applicable to your particular device. The path will have been provided to you by the **SmartSERVER** Administrator. Typically it will be entered in one of the following forms (with your details substituted):
 - <http://192.168.2.200> for a local connection using the IP address of the SmartSERVER on your network,
 - <http://myname.dyndnsprovider.com> for remote connections over the internet,
 - <http://cbus> ("cbus" is the factory default) on systems which support using a device name abbreviation.

Network addresses are determined by your particular networks configuration and the settings made by the SmartSERVER Administrator as detailed within Section 2.3.

As discussed above in Section 1.2.3 "https:" may be substituted for "http" when use of an encrypted connection is desired and/or required.

4. Select [here](#) and you will be presented with a login prompt (Illustration 1.2).

If you receive the response "*403 Forbidden*" and/or a message along the lines of "*The website declined to show this page*" then you are always required to use "https" in the URL path (e.g. <https://192.168.1.99>).

5. Enter both the login name and password you have been given, taking care as entry is case sensitive. If you prefer to keep your account details secret, during the account set-up get the administrator/installer to let you directly type in a password of your own choosing.

NOTE: SmartSERVER encrypts all login passwords before saving them.

6. If the login credentials are accepted your account name will now appear in the page header.

Should however you enter invalid login details on successive occasions you will be presented will an otherwise blank page containing the http protocol response "*401 Unauthorised: Password Required*". Either

select the browsers refresh button to be prompted for login credentials again or use the back button to return to the login screen.

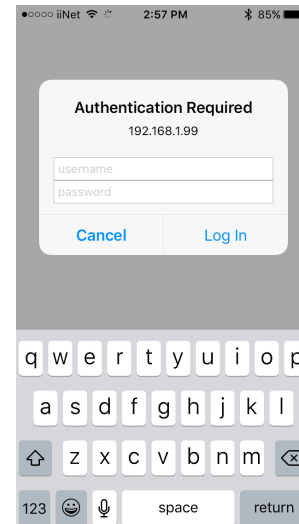


Illustration 1.2: Example login prompt (iOS 9)

1.3.2 About

A summary of **SmartSERVER** model details, current configuration settings and operational status is available on the About screen. It is

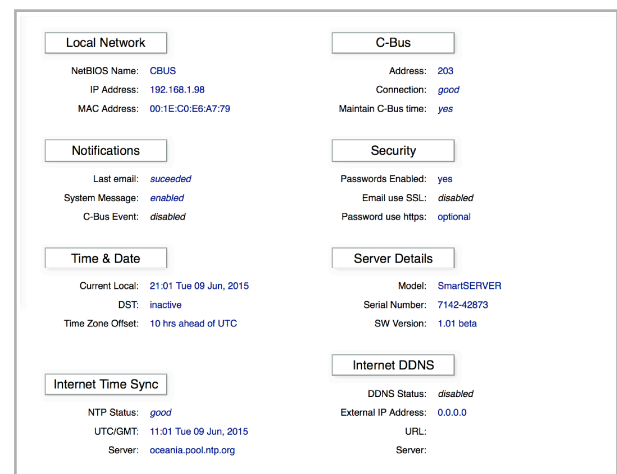


Illustration 1.3: Configuration summary & status

provided as general information and most Users will usually not have any need to access it.

About

Step

1. From the left menu select **About**

- In you are not already logged in with a **User**, Administrator or Installer account you will be prompted to enter an account Name and Password.

Note: Data available on the About screen is a read only summary, showing the result of data entered via other menu selections.

- For an explanation of each parameters meaning refer to Section 5.1.2 (page 42).
- Optionally, select **Logout** at top left if you are done.

1.3.3 Accessing a Keypad

As a User you are principally interested in **SmartSERVER** Keypads. These are the interfaces through which you will interact

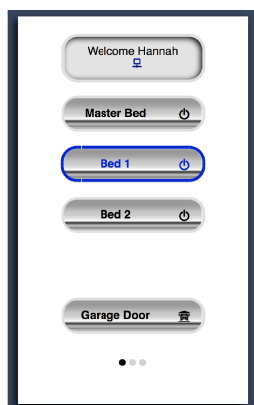


Illustration 1.4: Example keypad in "frost" theme

with the C-Bus automation system.

Each Keypad consists on a number of Key locations. As will be expanded upon in Section 1.3.4, these locations can either function as a controlling button, visual display or blanked out if not in use.

The **SmartSERVER** Administrator is responsible for allocating a purpose to each location, and applying a visual "theme" to the Keypad overall.

Keypad Access

Step

- From the left menu select **Keypad**
- Then select **Keypad 'n'** where 'n' is the desired Keypad number you wish to access.
- In you are not already logged in with a **User**, Administrator or Installer account you will be prompted to enter an account Name and Password.

NOTE: Your User account must be authorised to access the Keypad number you have selected; otherwise you will be prompted to login using another account.

- The Keypad you have selected will appear with a welcome message acknowledging you login account name.

An alternative method to access your keypads is available on touch screen capable devices.

So users may prefer to use this launch screen when saving to favourites, bookmarks or a devices home screen/desktop.

Step

- From the left menu select **<<** located in the Keypads menu (Illustration 1.5).
- In you are not already logged in with a **User**, Administrator or Installer account you will be prompted to enter an account Name and Password.
- The Keypad launch screen will appear. Use a swipe left action to navigate to available keypads.

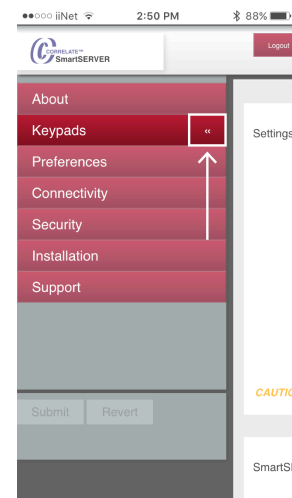


Illustration 1.5: Accessing Keypad Launch Screen

1.3.4 Using a Keypad

The **SmartSERVER** Keypads have been developed with the intention of providing an easy to use and intuitive interface across a diverse range of client devices.

Touch screen entry, where supported, is a very convenient way to interact with Keypad interfaces on handheld devices, although a traditional mouse also works well on desktop top machines.

On devices which sense screen orientation, (when the rotation lock is off) the Keypad layout will automatically readjust to make best use of the available viewable area.

Directly Navigate between Keypads

As well as directly accessing any of the available Keypads as described in the previous section, it is possible to directly swap between Keypads on touch enabled devices (typically smart phones, tablets and some laptops).



Illustration 1.6: Page navigation indicator

Step

- On touch enabled devices you can navigate between the Keypads you are authorised to access by swiping across the screen in the direction you wish to go. The 3 dot indicator at the bottom of the Keypad screen provides the following feedback:

- You are at the lowest Keypad number available to you.
- Swipe in either direction to access lower or higher numbered Keypads
- You are at the highest Keypad number available to you.

Quick deliberate horizontal swipes are required.

NOTE: If the swipes are slow or insufficiently horizontal they will be ignored. This feature is provided to minimise inadvertent navigation through ordinary handling of the phone

Portrait and Landscape views

SmartSERVER screens automatically adjust to best fit the viewable area or window on your device. On many small screened devices the Keypad will automatically occupy most or all of the viewable area, minimising or eliminating other browser information. Depending on your particular client device and software version, in some instances a “full screen” option will be made available.

Step

- Rotate the device and the view will automatically adjust to best suit the orientation.

NOTE: Your device must support rotation detection and have rotation lock disabled for automatic portrait to landscape switching to occur.

- For desktop machines adjust the browser window to the desired shape and size. Most desktop browsers also provide a zoom capability so the scale of the information can be adjusted to suit your viewing preference.

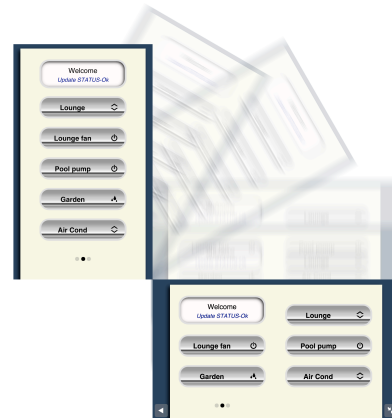


Illustration 1.7: Keypad auto layout

Switch Something

The Keypad is used to switch circuits, scenes and other C-Bus functions. It also provides a means of controlling the level of dim-able devices.

Step

- Navigate to the Keypad which contains the Key function you wish to use (described above).
- Momentarily “press” then release (or mouse click) the Key of interest.

NOTE: To avoid inadvertent switching through ordinary handling of the phone SmartSERVER requires a stationary touch to activate a key action

For circuits which ramp it is also possible for the User to set a custom level by holding the button (or mouse down) but not immediately releasing it. When the lighting intensity reaches the desired level release the button (or mouse up) and the ramping will stop.

- The keys visual activation indicator will reflect the current status.



Illustration 1.8: Key showing lighting at 65%

The Key action will have been defined by the Administrator to behave in one of a couple of ways:

- “switch to” will cause a C-Bus circuit to go to predefined level (e.g. Switch fully ON). Once in that state further Key presses will do nothing. (In the example given another Key is likely defined as Switch OFF)

- “*ramp to*” is similar to “*switch to*” but the transition will progressively occur over a predefined time,
- “*toggle between*” will cause successive key presses to alternate the C-Bus circuit between two predefined levels (e.g. Switch On or OFF),
- “*ramp between*” is similar to “*toggle between*” but the transition between two levels will progressively occur over a predefined time.

View Something

A Keypad can also display status information without any switchable action being involved. Two different forms exist:

- “*show status*” will show the level information in much the same way to a Key button, but not allow the keypad user to make any changes through a keypress,
- “*display value*” will show a numerical value associated with some measured quantity (e.g. *Water tank 2,084 L, Elect usage 45,689 kW/hr*).



Illustration 1.9: Key location showing circuit status at 65%

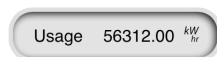


Illustration 1.10: Key location showing a value & units

Keypad Display Window

In addition to the features already described each Keypad has a message display window at top.



Illustration 1.11: Message display

This window is used by the **SmartSERVER** to display one or more of the following:

- “*Welcome message*”, including your login account name,
- “*Status icons*” showing your connection type (i.e. for local (wired or WiFi), from a remote network and when using a connection secured by 'https')
- “*System messages*” (e.g. *No Connection, Restart Occurred, DST commenced*)

- “*C-Bus messages*” which acknowledges a recent status or level change

The display will alternate between a number of messages where more than one exists (so more data can be conveyed than the display area would otherwise allow). Depending on the type and number of messages existing though at any time, less important ones may be replaced.

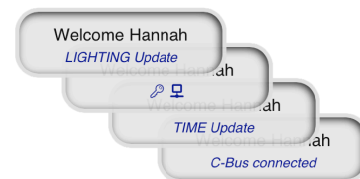


Illustration 1.12: Messages are sequentially displayed

If your device loses its ethernet connection, or your smart phone is out of cellular network coverage, the data shown on the Keypad may no longer be current. Additionally you will not be able to switch or control C-Bus network functions until your connection is restored.

To alert you to this situation the message display will show “No Connection” and the whole Keypad will become semi-opaque approximately 5 seconds after communications with the **SmartSERVER** is lost (Illustration 1.13).

Once communications are restored the display will return to normal and the “No Connection” message will disappear.

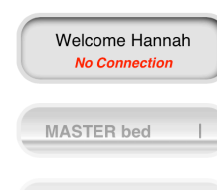


Illustration 1.13: Network connection lost

It is not unusual for mobile devices to intermittently lose and regain data connection in areas of poor network coverage. Marginal connections will also increase data errors, which in turn may affect response times.

1.4 Setting up for Ongoing Use

1.4.1 Full Screen Viewing

Whilst you can access the Keypads from the normal web browser interface it is possible on many portable devices to have a full screen experience which makes the interface look and feel just like a custom “app”. Generally there are two slightly different approaches to this:

- (a) Manually activate a browsers full screen view. If this feature is available to you it will generally be activated by a browser button. The main disadvantage with this approach is you need to manually activate it every time.
- (b) Save a shortcut link to your home screen. The **SmartSERVER** embeds certain instructions which will cause many devices (in particular Apple iOS and Google Android) to use full screen mode for any page opened in this way. This method also provides very convenient and quick access.

HINT: The method to save to the home screen varies from device to device so instructions cannot be given here. Generally however there will be a button which lets you choose "Bookmark the current site" "E-mail a site link" etc. Additionally an "Add to Home Screen" feature is often present there as well.

1.4.2 Convenient Access

Many SmartPhones and Tablets provide the ability to save a current web connection to the home screen as an icon. This was one of the methods mentioned in the previous section to enable "Full Screen Mode".

Unlike the similar feature generally available on personal computers tapping on the icon will re-open the connection in full page view and make the **SmartSERVER** keypad appear as if a local app.

1.4.3 Remembering Login Details

When a home screen icon is used for access, some phone models (and software versions within those models) will not remember the login account details, even though that phone feature is activated. To overcome this limitation it is possible to enter the login details to the web browser link before saving to the home screen. Refer to the FAQ Section 5.2.2 on page 43 for further details.

WARNING: Once created the link for a home screen icon is not ordinarily visible so your entered account details are not displayed. Note however that the data is not encrypted in any way and may be retrievable by others that have access to your unlocked phone, or spyware and/or viruses should they exist.

PART 2 - ADMINISTRATOR MANUAL

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2.1 Introduction

This section and its instructions are relevant to the individual responsible for ensuring the SmartSERVER configuration best matches the current operational needs of each User.

Your **SmartSERVER** has already been installed for you, in the context of this manual you are considered the Administrator.

If you are an Installer please first proceed to Part 3 (page 28).

NOTE: If you are a User you will generally not be interested in this part of the manual.

Ongoing use of the **SmartSERVER** in itself will not ordinarily require any intervention. However changes may be required for example to:

- add a new User login or update a password
- change a keypad theme selection
- remove a keypad button that is not used, or add a new one that is required
- receive an automatic alert when a circuit switches on

You will be logging in as an Administrator which means the following **SmartSERVER** menus will be unavailable to you:

Location & Time

C-Bus Circuit Definition

Networks & Bridges

This restriction is provided to avoid the inadvertent modification of C-Bus installation data, which under normal operation use will not require alteration (an Administrator is able to set-up all login accounts and passwords, so access by logging in as the Installer will give access to these menus).

The interface has been made as simple as possible and is aimed at a non-technical user. Settings needed to connect to your home network is probably the most complex area but typically the default “auto DHCP” feature will manage that for you.

Please refer to “Connecting to my **SmartSERVER** for the first time” to get started (Page x). You will need to do this before continuing with the options presented in this section.

ATTENTION: You will first need to be able to access the SmartSERVER from your devices browser in order to view and change data presented in the User, Administrator and Installer manuals.

2.2 Preferences

Most of the changes you are likely to make as an **Administrator** will reside in one of the three Preferences sub-menus:

- Assign Key Operations
- Keypad Theme Selection
- C-Bus Circuit Options

2.2.1 Login as Administrator

To proceed you need to know:

- the **SmartSERVER** network address,
- a login account name, and
- an account password.

Some or all of this information may be recorded for you by the **SmartSERVER** Installer on page 35 of this manual.

Other things to try include:

- Contact the installer to request this information

- The **SmartSERVER** network address:
 - Will likely be displayed in you network routers DHCP page
 - Try the default address value: <http://192.168.2.200>
 - On a Windows PC (or one supporting NETBIOS) try: <http://cbus>
 - Visit Correlates website (www.correlate.com.au) where a network discovery tool is available which will locate one or more **SmartSERVERs** connected to a local network
- Try logging in using any of the factory default account settings (will only work if the Installer has not changed them)
 - Name: admin Password: cbus2Config
 - Name: instl Password: cbus4Net
- As an absolute last resort perform a factory reset and reload the configuration archive file provided to you by the Installer (Refer to Section 2.5.1 for information on how to complete this operation).

LOGIN

Refer to Section 1.3.1 on page(9) for step by step instructions.

2.2.2 Assign Key Operations

Each of the individual “Keypads” can be defined in terms of C-Bus system functionality and visual theme (Settings for the latter are described within Section 2.2.3).

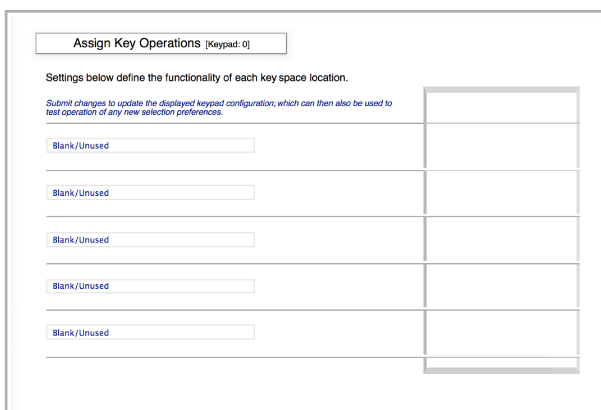


Illustration 2.1: Keypad with default (blank) assignments

Up to five locations per keypad can be programmed to perform an operation, display a status value, or alternatively left blank for unused. A sample keypad on the right (in default theme) shows the currently active preferences.

Any changes made here will be reflected on the sample keypad once they are saved.

To make the definitions for each key location easy to understand, the **SmartSERVER** interface employs a plain language interface. The input fields dynamically reconfigure to allow you to build a simple sentence describing what is happening.

The examples in Illustration 2.2 define a typically switching requirement used to command a circuit to alternate between two levels. In the first the master bedrooms walk in robe light has been selected for control. The key top will contain the label “Robe” and an On/Off icon will be displayed next to it. Subsequent key presses will cause the light to alternate between fully ON and fully OFF.

	On/Off		Scene 1 of 2
	Off		Scene 2 of 2
	On		Climate/air cond.
	Ramp up/down		Irrigation
	Ramp up		Lighting
	Ramp down	...	
	Schedule		

Table 2.1: Icon examples and common uses

The second entry defines a key which controls the same light but this time with a ramp icon next to the Robe label. Subsequent key presses will cause the light to transition between the levels of 75% on and fully OFF over 4 seconds.

Robe - BED MASTER walk in	- with icon	On/Off
will toggle between	ON	and OFF
		instantaneously
Robe - BED MASTER walk in	- with icon	Ramp
will ramp between	75%	and OFF
		over 4 seconds

Illustration 2.2: Sample Key definitions (alternate levels)

Similarly is also possible (Illustration 2.3) to define a key which will just set a particular level. In this way, for example, a key for ON and another key for OFF could be defined. Or perhaps a single button will be used to set a C-Bus scene.

Robe - BED MASTER walk in	- with icon	On
will switch to	ON	
Robe - BED MASTER walk in	- with icon	Ramp Up
will ramp to	85%	over 4 seconds

Illustration 2.3: Sample Key definitions (single level)

Notice in the above examples that only those fields relevant to the configuration in progress are displayed. In the “... between” examples two levels can be entered, but in the “... to” definitions only a single value is relevant. Similarly only for “... ramp” type entries are you asked to select a ramp duration.

On occasions you may want the key location to display a status or value without any operator control functionality as in the example at Illustration 2.3. Alternatively any key location can be set to blank.

Robe - BED MASTER walk in	- with icon "none"
will show status	
Water Tank - Water Tank 1 (9000L) level	
will display value	
Blank/Unused	

Illustration 2.4: Sample Key definitions (monitoring & blank

For C-Bus metering, temperature and measurement applications the correct units are automatically applied at the end of the displayed value.



°C	degrees Celsius	dB	decibel (sound)
kg	kilogram	rpm	revolutions per minute
l/hr	litre/hour	W	Watt (power)
lx	lux (light)	kW _{hr}	kiloWatt hours
Pa	Pascal (pressure)	...	
%	Percentage		



Table 2.2: Examples of supported measurement units

Assign Key Operations

Step

- From the left menu select **Preferences** > **Key Assignment**
- If you are not already logged in with an Administrator or Installer account you will be prompted to enter an account Name and Password.
- The current page shows only one of the available Keypads.

Navigate to the Keypad of interest by using the  (backward) and  (forward) button under the left side menu. To help you keep track of where you are the current Keypad number is displayed between the two.

NOTE: The  or  navigation buttons will be disabled (turn grey) when the lower or upper Keypad respectively is reached.

- Each Key location can be individually configured to reflect your preferences.
- Decide which Key location you wish to change.
- In the first field select "Blank/Unused" if you wish that location to be blank. No further input for this location is required, and your entry is complete.

- If the location is to be used, select from the fields drop down list one of the available C-Bus circuits (defined by your Installer). Additional fields will then automatically appear for which you need to choose additional preferences.

Greyed out circuits cannot be assigned. They are currently disabled by the Installer in the C-Bus Circuit Definition menu (page 31).

- The **with icon** field allows you to display a graphical icon. The default value is "none". This is an aesthetic feature so your choice to use one is entirely optional. Keep in mind a consistent choice of icons will likely make it easier for Users to identify the intended purpose.
- The **will** field enables you to specify a control or monitor option. Only options applicable to the current C-Bus Circuit will be available for selection:


- "switch to" will cause a C-Bus circuit to go to a specific level (e.g. Switch to 80% brightness),
- "toggle between" will cause successive key presses to alternate the C-Bus circuit between two levels (e.g. Switch On or OFF),
- "ramp to" is similar to "switch to" but the transition will progressively occur over time,
- "ramp between" is similar to "toggle between" but the transition between two levels will progressively occur over time,
- "show status" will show the level information but not allow the keypad user to make any changes through a Keypress,
- "display value" will show a numerical value associated with that circuit (e.g. *Water tank 2,084 L, Elect usage 45,689 kW_{hr}*). Values received from the C-Bus metering and/or measurement applications automatically have the applicable "units" symbol applied.


- The remaining fields present will depend on the previous selection choices. You may have some or all of the following:

- The ability to specify the target level(s) as "ON" or "OFF". For C-Bus circuits with a dimming capability a percentage intensity level is also available (e.g. "70%").

NOTE: "toggle between" and "ramp between" require the specification of both (2) levels.

- The **over** field controls the rate that a dim-able circuit should change value toward the target level.
- At this point you should have "built" a sentence which describes what that key location will do e.g.:

Kitchen – down lights with icon  will toggle between ON and OFF.

Lounge – down lights with icon  will ramp between 80% and OFF over 12 seconds.

Water Tank display value.

12. Repeat as described the steps above for any other Key locations on the current Keypad that are to be updated.
13. If you wish to discard all newly entered unsaved data and start over select **Revert** otherwise select **Submit** to save and implement the data entered.
14. Navigate to any additional Keypads that are to be updated and repeat the actions as described above.

For convenience the sample keypads can be used to test and verify saved settings without the need to navigate to the actual keypad.

2.2.3 Keypad Theme Selection

Each of the individual “Keypads” can be defined in terms of visual theme and C-Bus system functionality (Settings for the latter are described within Section 2.2.2).

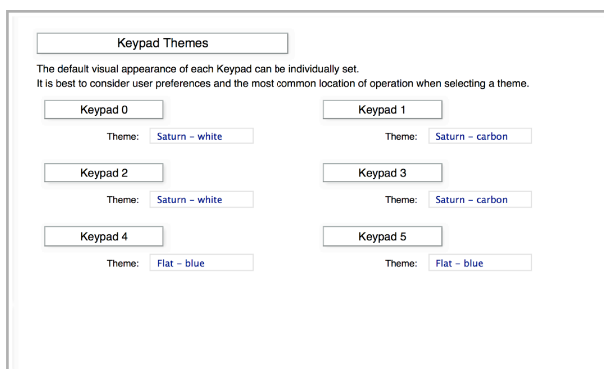


Illustration 2.5: Keypad Theme selection content

Visual themes can be important choice so as to match a room décor, personal taste or achieve maximum readability in certain ambient lighting conditions.

Keypad Themes

Step

1. From the left menu select **Preferences** > **Theme Selection**
2. In you are not already logged in with an Administrator or Installer account you will be prompted to enter an account Name and Password.
3. For the “keypad” to be modified select the **Theme** field and choose from one of the available themes.
4. Repeat the previous step for any of the other Keypads as necessary.
5. If you wish to discard all newly entered unsaved data and start over select **Revert** otherwise select **Submit** to save and implement the data entered.

6. From the left menu select **Keypad Access** > **Keypad 0** (or another one as desired) to confirm you are happy with your new Theme selection(s).

2.2.4 C-Bus Circuit Options

The C-Bus interface has been configured by your Installer to match the physically installed C-Bus system. This allow you as an Administrator to simply select what you want to control from a drop down list,

defined with C-BusC-Bus It is possible to taylor some of the non-critical aspects of the interface with the C-Bus system with needing to be an Installer.

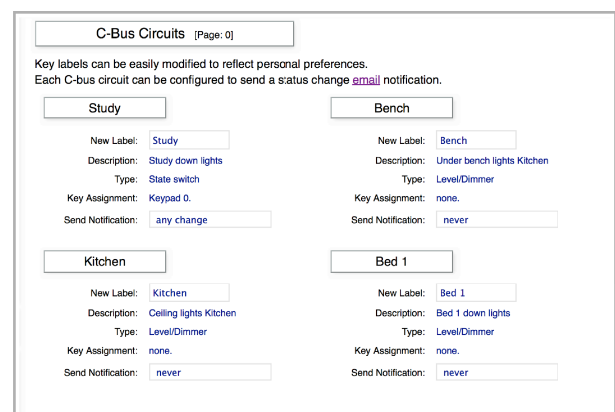


Illustration 2.6: C-Bus circuit option content

The steps below will show you how to:

- Modify the descriptive content which appear as key-tops and labels within the Keypad User interfaces, and
- Select whether a specified change in state of a C-Bus circuit should generate a notification message.

C-Bus Circuits

Step

1. From the left menu select **Preferences** > **Circuit Options**
2. In you are not already logged in with an Administrator or Installer account you will be prompted to enter an account **Name** and **Password**.
3. The current page shows only 4 of the available C-Bus Circuits.

Navigate to the page of interest by using the **<** (backward) and **>** (forward) button under the left side menu. To help you keep track of where you are the current page number is displayed between the two.

Note: The **<** or **>** navigation button with be disabled (turn grey) when the lower or upper page respectively is reached.

4. If you wish to discard all newly entered unsaved data and start over select **Revert** otherwise select **Submit** to save and implement the data entered.
5. The **New Label** field shows the current label being applied to any Keypad using it, and can be edited at any time.
6. The read-only **Description** field provides additional information entered by your Installer, and is used to positively identify the function of the circuit.
7. The read-only **Type** field provides details on the circuits possible operation and is ultimately determined by the actual installed C-Bus hardware (e.g. it is not possible to set an ON/OFF relay to 50% or set a measured value such as outside temperature):
 - (a) Disabled – The Installer has not configured this circuit for use,
 - (b) Monitor only – This circuit can report a value but cannot be directly controlled,

NOTE: A potentially controllable device may have been set to "Monitor only" by the Installer to intentionally limit control capability.

- (c) State Switch – Operation is limited to ON or OFF
- (d) Level/Dimmer – ON, OFF or a 0-100% level can be set,
- (e) Sched/Scene/Misc – Enable a C-Bus schedule or switch a C-Bus scene, and
- (f) The read-only **Key Assignment** field reports all Keypad(s) which are currently configured to use this circuit, else 'none' is shown if no assignment has been made.
8. The default for the Send Notification field is "never". If you would like this circuit to create an event for email notifications purposes you will need to set the event trigger criteria here.
Elsewhere you can define:
 - email addresses that the **SmartSERVER** can use (Section 2.3.3)
 - which email recipients will receive C-Bus event type notifications (Section 2.4.3)
 - define Hi and Lo values (Section 3.3.3)
9. If you wish to discard all newly entered unsaved data and start over select **Revert** otherwise select **Submit** to save and implement the data entered.

2.3 Connectivity

2.3.1 Local Networks

SmartSERVER is connected to your local ethernet network via a wired connection. In many installations this will be a short jumper cable running between the SmartSERVER and the WiFi router/modem.

Illustration 2.7: Local Networks content

This section describes the settings SmartSERVER will need to operate on this network, alongside any other wired or wireless devices that may also be present.

IMPORTANT: The interface you are using here relies on the ability to communicate with the SmartSERVER over your ethernet network. If settings are entered which interrupt that connection, interaction with the SmartSERVER will also be affected. If needed refer to the troubleshooting Section 5.3.1 for assistance in re-establishing a connection.

Local Address Settings

Step

1. From the left menu select **Connectivity** > **Local Network**
2. In you are not already logged in with an Administrator or Installer account you will be prompted to enter an **Account Name** and **Password**.
3. The **Host Name** field allows you to enter a name by which the **SmartSERVER** can identify itself to other network devices and applications. The factory default "cbus" can be kept or another chosen if required. The name entered should be unique and not be the same as any other connected devices (including additional **SmartSERVERs** if present).
4. Most networks will have a local DHCP server present. This server manages the assignment of Internet Protocol (IP) addresses to individual connected devices. If your network has a DHCP server, simply turn **Enable DHCP** on and the **SmartSERVER** will allow that device to manage its IP address. All other settings relating to the **SmartSERVER** local address will be automatically set.
5. For networks without a DHCP a number of options exist:
 - (a) Leave **Enable DHCP "On"** and the SmartSERVER will automatically assume an IP address of 169.254.1.1 after it cannot find a server; OR

- (b) Turn **Enable DHCP "Off"** and enter the desired IP Address in the **IP Address** field (e.g. "192.168.1.50").
6. Other fields can generally be left unchanged unless a specific requirement exists.
7. If you wish to discard all newly entered unsaved data and start over select **Revert** otherwise select **Submit** to save and implement the data entered.

C-Bus Interface

Step

1. From the left menu select **Connectivity > Local Network**.
2. In you are not already logged in with an Administrator or Installer account you will be prompted to enter an **Account Name** and **Password**.
3. Control of the C-Bus network can be suspended if required by setting **SmartSERVER Control** to Off. In this state users will not be able to switch and control C-Bus circuits although monitoring remains available.
4. If you wish to discard all newly entered unsaved data and start over select **Revert** otherwise select **Submit** to save and implement the data entered.

2.3.2 Internet Services

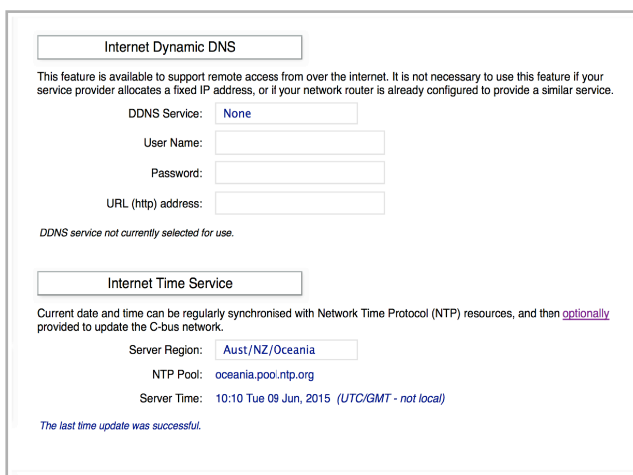


Illustration 2.8: Internet Services

SmartSERVER can optionally be configured to:

- (a) Interface with a number of major DDNS service providers for the purpose of establishing a fixed web address to support remote access, and
- (b) Routinely synchronise its in-built clock and calendar with highly accurate internet time servers.

Internet Dynamic DNS

Step

1. From the left menu select **Connectivity > Internet Services**.
2. In you are not already logged in with an Administrator or Installer account you will be prompted to enter an **Account Name** and **Password**.
3. The **DDNS** field requires one of the available service providers to be selected, or "none" if you do not wish SmartSERVER to use DDNS. If the later, you do not need to complete the following DDNS fields.
4. For your DDNS account enter your **User Name**.
5. For your DDNS account enter your access **Password**.
6. When you set up your account with your DDNS provider you selected a URL which will be your internet address. Enter that now into the **URL (http) address** field (e.g.?).
7. If you wish to discard all newly entered unsaved data and start over select **Revert** otherwise select **Submit** to save and implement the data entered.

Internet Time Service

Step

1. From the left menu select **Connectivity > Internet Services**.
2. In you are not already logged in with an Administrator or Installer account you will be prompted to enter an **Account Name** and **Password**.
3. For **Server Region** select the area in which you are located, or "none" if you do not wish SmartSERVER to synchronise with internet time resources.

Your local region typically achieves the best performance so ordinarily do not choose "International".
4. If you wish to discard all newly entered unsaved data and start over select **Revert**, otherwise select **Submit** to save and implement the data entered.

2.3.3 Email Services

SmartSERVER can be optionally configured to send email notifications when certain events occur. These events are grouped into one of two types:

- (a) System event (e.g. re-start, login failure, Summer Time start), and/or
- (b) C-Bus event (e.g. light turns off, pool pump on, water level < 2,000L).

This section describes the settings SmartSERVER will need to access your service providers email service, and also allow you to define available email recipients.

Elsewhere you can define:

- which event types are sent to each email recipient (Section 2.4.3)

- what constitutes a C-Bus event (Section 2.2.4)

Email Server Access

Step

1. From the left menu select **Connectivity** > **Email Services**
2. In you are not already logged in with an Administrator or Installer account you will be prompted to enter an **Account Name** and **Password**.
3. The **Server Address** Field requires you to enter the address of the outgoing smtp email server you wish to use e.g. "mail.smtp2go.com" "mail.iinet.net.au" etc.

HINT: By using one of the many free smtp mail services available you can keep your outgoing automation messages entirely separate from your personal outgoing correspondence. We recommend one such service provided by www.smtp2go.com

4. The **Port** number entered must match the one provided by your outgoing smtp mail server provider (typically 25 or 2525).

NOTE: The SmartSERVER software supports standard smtp protocol connections. This current release of software does not provide smtp connections over SSL (TLS); which is usually port 465.

5. When using an e-mail service provided by your internet service provider you may not need to provide a login name and password (preferred), otherwise you will need to enter these details. Enter your **Login Account** e.g. "geoff35@gmail.com".
6. If an account name was entered, a password will also need to be provided. Enter it into the **Password** field.

NOTE: Password warnings such as "V Weak" are just for your information and will not affect the login process with your email service provider.

7. To help prevent the chances of a typographical error enter it again into the **Re-enter Pwd** field and take note of any screen messages that might appear.

"* Currently Different" means the two instances of the password do not match and you should check your entry.

8. If you wish to discard all newly entered unsaved data and start over select **Revert** otherwise select **Submit** to save and implement the data entered.

Email Destinations

Step

1. From the left menu select **Connectivity** > **Internet Services**
2. In you are not already logged in with an Administrator or Installer account you will be prompted to enter an **Account Name** and **Password**.
3. Enter recipient details into one or more of the **To**, **cc** and **bcc** just as you would when composing a normal e-mail e.g. "betty135@yahoo.com.au".
A least one valid email address is required for notification messages to be sent.
4. If you wish to discard all newly entered unsaved data and start over select **Revert** otherwise select **Submit** to save and implement the data entered.
5. From the left menu select **Security** > **Notification Messages**
6. Select **Send test Email** and take note of any screen messages that might appear. Verify with the recipient(s) that an e-mail from SmartSERVER was received.

2.4 Security

2.4.1 Keypad Access Control

It is possible to control individual keypad access on a per User account basis. By default all access permissions are set to

Illustration 2.9: Keypad Access Control

disabled, except for the Administrator and Installer who can always access any Keypad.

When using swipe navigation (Section 1.3.4) a User will move between Keypads which they are authorised to access, skipping over any they are not.

The C-Bus Circuit Option page (Section 2.2.4) also displays a summary of Keypads assigned to each selected circuit.

Keypad Access

Step

- From the left menu select **Security** > **Control User Access**
- If you are not already logged in with an Administrator or Installer account you will be prompted to enter an **Account Name** and **Password**.
- A list of USER logins is provided for each Keypad. As desired simply switch user access On or Off to suit your requirements. If user account names have been entered (e.g. "Hannah", "Sales Staff") they will replace the default 'user0, user1 etc used to identify that account.

NOTE: A logged in user which has their access switched off for a keypad currently in use, will have that access immediately terminated and be presented with a new login prompt.

- If you wish to discard all newly entered unsaved data and start over select **Revert** otherwise select **Submit** to save and implement the data entered.

2.4.2 Login Accounts

Depending on your particular circumstances login accounts may be allocated on an individual basis (e.g. "Hannah", "Geoff"), or to a

The screenshot shows a 'User Login' window. At the top, it says 'These accounts provide operational access to the SmartServer - note that individual keypad access permissions must also be defined.' Below this are four user login sections: User A (Name: Geoff), User B (Name: Ashi), User C (Name: Sales Team), and User D (Name: Brett). Each section has fields for Name, Password, and Re-enter Pwd. Below these is an 'Administration and Configuration' section with a toggle for 'All passwords only via https' set to 'Off'. A note states: 'Admin login is used to manage and configure the installed system. Installer level access is ordinarily only required by your installation professional - expert knowledge of the C-bus system configuration may be required.' At the bottom are two more login sections: 'Admin' (Name: admin) and 'C-Bus Installer' (Name: Hannah).

Illustration 2.10: Login account definition

group with common access needs (e.g. "Floor 1", "Sales", "Soccer Club"), or a mixture of both.

Login accounts can typically be useful to:

- Tailor accessible features to those only of interest to the individual or group;
- Provide a measure of access control.

More than one User can be simultaneously logged in using the same account, meaning that creating user groups does not limit accessibility.

User Login

Step

- From the left menu select **Security** > **Login Accounts**
- If you are not already logged in with an Administrator or Installer account you will be prompted to enter an **Account Name** and **Password**.
- Each User account can have the default or existing name replaced by a more meaningful one by entering it in the **Name** field. This is the account name that will be used for future logins and will be displayed on a Keypad.

NOTE: If an account name is updated the old name is immediately invalidated and any current connections will terminate.

- If an account password is to be updated enter it into the **Password** field.

Password warnings such as "V Weak" are just for your information and will not otherwise affect the login process. However it is recommended that passwords contain a random mixture of upper and lower case characters, numbers and symbols inline with good current practice.

If the Password field contains "none entered" then the factory default settings still apply. This account cannot be accessed until a new password is entered.

Also be aware it is not permitted to enter an "empty" password. If you attempt to do this, the pre-existing password will be retained.

- To help prevent the chances of a typographical error enter it again into the **Re-enter Pwd** field and take note of any screen messages that might appear.

*NOTE: "** Currently Different" means the two instances of the password entry do not match, which will require correction before proceeding.*

- If you wish to discard all newly entered unsaved data and start over select **Revert** otherwise select **Submit** to save and implement the data entered.
- Repeat the above steps for any additional USER accounts requiring update.

Administration and Configuration

Step

- From the left menu select **Security** > **Login Accounts**
- If you are not already logged in with an Administrator or Installer account you will be prompted to enter an **Account Name** and **Password**.

- To help protect account and password information it is possible to enforce that login details will only be submitted over an encrypted link using https (TLS). This setting applies to all accounts INSTALLER, ADMIN and USER alike. Set **All passwords only via https:** On if this is required.
- Complete updates to **Name**, **Password** and **Re-enter Pwd** fields as described above for User Access
- If you wish to discard all newly entered unsaved data and start over select **Revert** otherwise select **Submit** to save and implement the data entered.

2.4.3 Notification Messages

When a **SmartSERVER** System Message is generated, or a defined C-Bus event occurs (page 18), an email notification can be dispatched. It is possible to control which types of messages are sent to each of the previously defined (page 20) e-mail destination addresses.

Test Message

Generating a test email will allow you to verify notification message functionality within your network, and that SmartSERVER configuration settings and email addresses have all be entered correctly.

Step

- From the left menu select **Security** > **Notification Messages**
- In you are not already logged in with an Administrator or Installer account you will be prompted to enter an **Account Name** and **Password**.
- Press and release the **Send Test Email** button

Illustration 2.11: Notification Messages

- After waiting a short while, check with each of the email recipients (as listed further down the page) that they have received a test email generated by the **SmartSERVER**.

Status Change and System Alerts

Step

- From the left menu select **Security** > **Notification Messages**
- In you are not already logged in with an Administrator or Installer account you will be prompted to enter an **Account Name** and **Password**.
- For each of the destinations grouped by To, cc: (carbon copy) and bcc (blind carbon copy) select **On** or **Off** to determine whether System Message and/or C-Bus event messages will be sent to that address.

HINT: "bcc" can be useful where you don't want other recipients to be aware that that address is receiving email notification updates.

- If you wish to discard all newly entered unsaved data and start over select **Revert** otherwise select **Submit** to save and implement the data entered.

2.5 Support

IMPORTANT: Always keep at least one copy of the current SmartSERVER configuration in a safe, accessible location.

2.5.1 Save & Restore

All the configuration data which has been entered by both the Installer and Administrator can be saved to a file for later retrieval, if necessary.

Illustration 2.12: Save & Restore

It is vitally important that you always keep at least one copy of the current **SmartSERVER** configuration in a safe location. If you accidentally change data and need to return to a previous configuration, or if a unit needs to be replaced, an Archive Configuration file will allow you to do this without the need to engage an installation professional.

WARNING: Correlate will not be responsible for the potential cost of of reconfiguring a replacement SmartSERVER. It is the responsibility of the owner to always hold an up to date Archive Configuration file.

A couple of things to note about **SmartSERVER** Archive Configuration files:

- Your account login passwords are stored within the file using a secure hash algorithm. It will not be ordinarily possible to recover password information from the file.
- These files are portable and do not need to be restored using the same device or operating system that originally saved it.
- does not need to be restored to the same **SmartSERVER** from which created it, making it an ideal mechanism to clone units for deployment within larger residential developments.

Whilst the Configuration Archive file protects passwords using algorithms which are currently believed to be secure for this purpose, a brute force attack will always be successful given sufficient time and computing resources. For this reason it is always good practice to save the file in a private safe location not generally accessible to others.

Some mobile devices (e.g. iPhones) do not allow files other than pictures to be saved. You will need access to a device which supports file saving to create a C-Bus Configuration Archive.

Create an Archive

Step

1. From the left menu select **Support** > **Save & Restore**
2. In you are not already logged in with an Administrator or Installer account you will be prompted to enter an **Account Name** and **Password**.
3. Press and release the **Save to file** button.
4. Your browser will prompt you to save the file (or perhaps open it). Enter a name for the file if you wish to change from the default "smartserver.cfg", then select save.
5. On most systems the download will complete in under 10 seconds.
6. Move the file to a safe location on your computing device or network storage.
7. If possible keep a least one backup of the file to protect against accidental deletion or storage hardware failure.

Many users choose to create files with new and unique names each time they update the SmartSERVER settings (incase they need to refer to an old configuration again in the future). If you do this consider including the date within the overall filename.

Restore A Configuration

Restoring information from an Archive Configuration file will completely overwrite all existing SmartSERVER configuration data, other than for the Admin or Installer account actually performing the operation.

WARNING: Save the current configuration to a file name different to the one to being restored, before proceeding

Step

1. From the left menu select **Support** > **Save & Restore**
2. In you are not already logged in with an Administrator or Installer account you will be prompted to enter an **Account Name** and **Password**.
3. For the **File** field select **Browse...**
4. Navigate to the Archive Configuration file you wish to restore to the **SmartSERVER**. These files have a ".cfg" extension and your browser has been instructed by the **SmartSERVER** to only show files of that type.
5. Press and release the **Restore from file** button.
6. On most systems the upload will complete in under 30 seconds.

NOTE: As the upload process will be defining operating parameters such as C-Bus circuits User operation of the product will be momentarily disrupted for the duration of the upload.

7. If as a result of the restoration account passwords were modified those affected accounts will have been logged out. Account details may be further manually updated as described within Section 2.4.2 (Page 22).

2.5.2 Software Update

The **SmartSERVER** architecture has been developed to deliver a responsive and efficient solution over a communications channel of

The screenshot shows a web interface with two main sections. The top section is titled 'Create an Archive' and contains instructions to save the current SmartSERVER configuration to an archive file. It includes a 'Save to file' button and a hint to change the default filename. The bottom section is titled 'Restore a Configuration' and contains instructions to select a previously saved archive to restore settings. It includes a 'File:' field with a 'Browse...' button and a 'Restore from file' button. A caution note is present in the restore section.

Illustration 2.13: Software Updates

variable quality. To keep data transfers to a minimum, the **SmartSERVER** takes advantage of your devices available computing capabilities to perform some of the display processing locally. Consequently the software has been partitioned into two functional elements, each of which can be independently updated:

User Interface: The user interface consists of code which defines the look and layout of what appears within the browser. Encapsulated Javascript software performs data synchronisation with the **SmartSERVER** firmware and performs other local housekeeping duties such as alerting the user when a connection drops out or responding to screen orientation changes.

Firmware: This is the core program executed within the SmartSERVER and continuously interacts with the C-Bus system. It is responsible for maintaining the communications channel when your device is being used to monitor and control. Furthermore it runs continuously whether a client is present or not, performing such background tasks as retrieving Internet time and dispatching emails when necessary.

Correlate may issue updates from time to time for either or both components. As both these elements operate in unison with each other it is important that compatible versions of each are used.

***WARNING:** If Correlate has developed a CUSTOM User Interface for you, do not download and install standard software available from our website – it will remove any appearance customisation which has been developed for you. Firmware and User Interface updates will be provided to you in accordance with any Support Agreement which may be in place*

Interface

From time to time new releases may be made available for a number of reasons ranging from addressing a compatibility issue with a new device, through to a purely aesthetic update. The Correlate website will provide an explanation of each update so you can choose whether it is right for you.

Step

1. Correlate recommends only installing files which you know to have been downloaded from the support area of www.correlate.com.au.

***NOTE:** Interface files have the file extension ".bin"*

You will need to have this file available before proceeding further.

***WARNING:** Other programs on your computing device may use files also with the extension ".bin". Do not attempt to install any file other than those designed specifically for the SmartSERVER.*

2. From the **SmartSERVER's** left menu select **Support** > **Software Update**
3. If you are not already logged in with an Administrator or Installer account you will be prompted to enter an **Account Name** and **Password**.
4. Press and release the **Interface Installation Menu** button. You will then be presented with a screen used to select the file for upload (Illustration 2.14).
5. Select **Choose File** and your system's native file navigation dialogue should open. Now navigate to the location where you have saved the Interface file to be installed and select it.
6. Select **Upload** to commence the transfer.

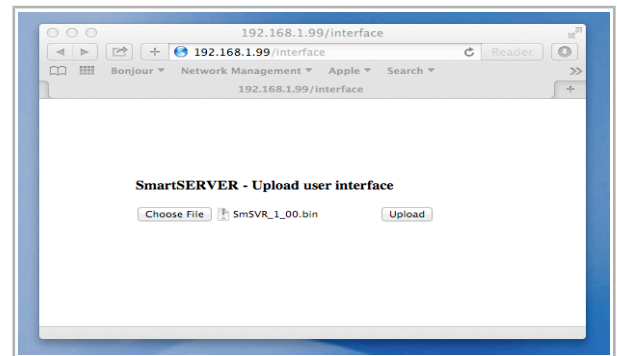


Illustration 2.14: Interface upload

7. Now wait for the Update successful response (Illustration 2.15) which will occur once the transfer completes, typically within one minute or so of commencing the upload.

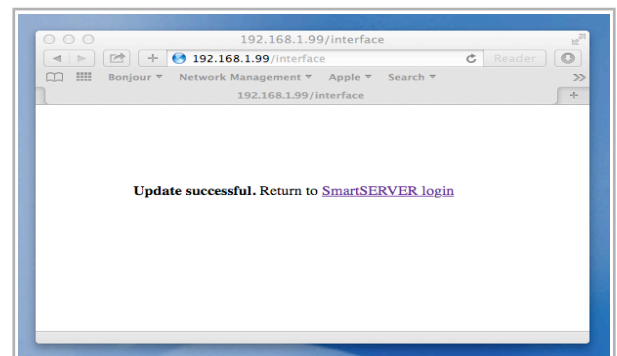


Illustration 2.15: Successful interface update

8. Select the [SmartSERVER login](#) link to return to the SmartSERVER login.

Firmware

The SmartSERVER product suite has been developed to support the remote update of firmware without need for any special programming hardware or cables.

Firmware updates are usually released to address a performance issue, security concern or software bug. New firmware may alter existing functionality.

To carry out a firmware update you will first require the following:

1. The firmware update file to be installed (".cry" file type extension).
2. A network enabled computer with the free Software Updater Utility installed. Initially the Software Updater Utility is only compatible with the Microsoft Windows PC operating systems. Please check our website for new releases of this utility.

HINT: If you are uncomfortable performing these actions, the remote capability means that your Installation Professional may be able to do this for you, more often than not without need for a site visit.

Our website also contains up to date detailed information on how to use the most current version of the Software Updater Utility. Only an overview is present here.

The utilities standard configuration is set to perform an update over the local network. The Software Updater Utility documentation contains information on how to complete an update over the internet.

Step

1. Verify that the Firmware version to be installed is also compatible with the User Interface version which will be used.

NOTE: If you are unsure about version compatibility, the simplest approach is to install both elements which came in the software release package.

2. Activate the Software Updater utility and select connect. From here the program will continuously look for any SmartSERVER which is in, or enters, update mode.

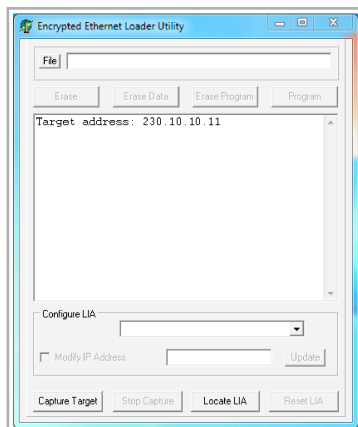


Illustration 2.16: Software Updater Utility

3. Place the SmartSERVER into update listen mode through ONE of the following methods:
 - Press the restart button on the front panel, or
 - Re-power the unit, or
 - Perform a remote restart (Steps 5 to 7)

Update listen mode is entered for approximately 8 seconds during start-up. If the SmartSERVER is not contacted by the Updater Utility within that window, normal operational will automatically commence.

4. If not performing a remote restart move directly forward to Step 8.
5. From the left menu select **Support** > **Software update**

6. In you are not already logged in with an Administrator or Installer account you will be prompted to enter an **Account Name** and **Password**.
7. Press and release the **Listen for Update** button. This will take you to the re-start screen.
8. The Software Updater Utility will confirm that a connection with the SmartSERVER has been made.

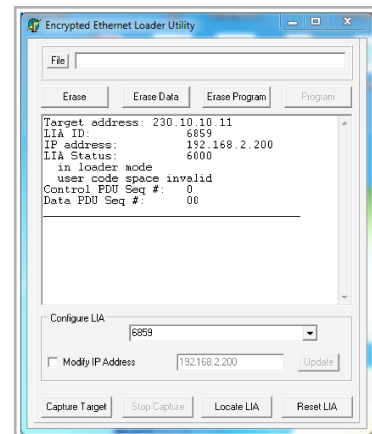


Illustration 2.17: SmartSERVER captured

9. Navigate to the firmware cry update file from the File menu.

WARNING: Other programs on you computing device may also use files with the extension ".cry". Do not attempt to install any file other than those designed specifically for the SmartSERVER.

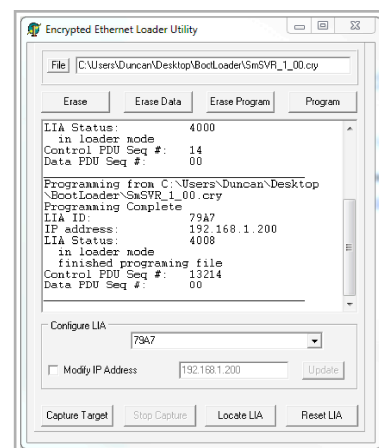


Illustration 2.18: Update Complete

10. Select Program and wait for the programming completed confirmation to appear. This may take a couple of minutes depending on your connection speed.

Disregard any packet error warnings that may appear in the Software Updater Utility window. It is usual for UDP data packets to be lost or received out of order on any

network (especially over the Internet)– the Software Updater Utility and SmartSERVER will automatically resend this data.

11. Select Reset LIA in the Software Updater Utility to release the connection with the SmartSERVER, and allow it to restart.

PART 3 - INSTALLER MANUAL

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3.1 Introduction

The following instructions apply to someone who is responsible for the physical installation of a **SmartSERVER** and its integration with a C-Bus system. In the context of this manual you are considered the Installer.

NOTE: If you are a User you will not be interested in this part of the manual, and as the Administrator you may on rare occasions have need to access some of the features discussed.

3.2 Physical Installation

3.2.1 Before you start

Prior to commencing a SmartSERVER installation ensure that your intended approach will satisfy all of the following considerations detailed in this section:

- C-Bus connection
- Ethernet Connection
- Power Source
- Location, Access and Security

C-Bus connection

The SmartSERVER requires access to a wired C-Bus system in a manner similar to that required by a Clipsal C-Bus wall switch – two terminations are required at a pluggable connection provided at the rear.

Ethernet Connection

A connection to a local wired ethernet or fast ethernet network is required. This is provided at the front of the unit by a standard RJ style connector (as is typically present on Cat 5e and Cat 6 patch cables).

SmartSERVER includes an auto MDIX feature so cross over cables are never required (but can be used at any time).

Power Source

SmartSERVER requires a 5V DC input for operation. This can be provided to the front facing barrel style connector by:

- Suitably rated 5V plug pack or similar supply
- USB to barrel connector cable. USB3 sources will, and most USB2.0 interfaces, can provide sufficient current (The later meaning it may be possible to power SmartSERVER off an unused router USB port)

Consider the total current draw of other devices (if present) from a USB router or powered hub to confirm sufficient capacity remains.

Correlate carries a range of accessories that can help you professionally complete any installation. Please visit our website www.correlate.com.au for further details.

IMPORTANT: Is is likely a general power outlet (GPO) will also need to be provided in the vicinity of the SmartSERVER to provide input to a DC plug pack/supply and for other customer IT equipment.

Location, Access and Security

SmartSERVER is designed for indoor use only. It does not in itself generate any appreciable heat nor require convection for cooling.

The selected location must afford occasional front panel access by either an Installer or Administrator.

Common suitable locations include:

- wall mounting near a wired ethernet connection and GPO
- within a communications cabinet

Unsuitable locations include:

- areas of high electromagnetic radiation
- corrosive, explosive or highly dusty environments

- close proximity to medical apparatus or similarly sensitive equipment
- anywhere where the **SmartSERVERs** rated parameters (Section 4.2.3 on page 38) will be exceeded

WARNING: Always select a location which complies with local building codes and regulations, and ensure cabling separation requirements are met. Typically equipment of this type, as well as other IT equipment should not be installed within a mains switchboard.

3.2.2 Mounting Preparation (Step 1)

The method of fixing the **SmartSERVER** is via two mounting screws spaced at 84mm centres (template at **TDB!!!**). This is compatible with the standard spacing used by Australian and New Zealand switch plates and other mounting accessories.

Orientation of the **SmartSERVER** can be determined to best suit the installation position, however note that front panel artwork runs horizontally.

The two screws provided have sufficient reach for a mounting bracket present at the rear of a gyprock cavity wall (Illustration 3.1).

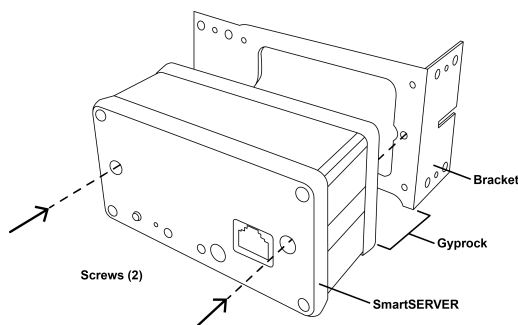


Illustration 3.1: Example cavity installation

C-Bus cable entry is from the rear, meaning that on solid walls a suitable wall box cavity must be present, or a mounting block affixed to the wall. Non-standard configurations will need to be addressed by the installation professional on a case by base basis.

3.2.3 C-Bus Cable Termination (Step 2)

It is recommended the C-Bus cable termination and fitting of the connector be completed immediately prior to installation of the **SmartSERVER**, and after application of all finishes to the mounting surface.

Untwist the 2 cable pairs identified in Table 3.1. The other twisted pairs present are not used for the **SmartSERVER** installation and should remain unterminated.

C-Bus Connection	Colour
C-Bus positive (+)	blue
C-Bus negative (-)	blue & white
C-Bus positive (+)	orange
C-Bus negative (-)	orange & white

Table 3.1: C-Bus cable colour code

Now strip approximately 7mm of insulation off each of the four wires of interest being careful not to nick the centre conductor. Combine the positive and negative C-Bus cables are shown in Illustration 3.2. A crimp ferule as used by other C-Bus products can be optionally applied to the cable ends, but is not required.

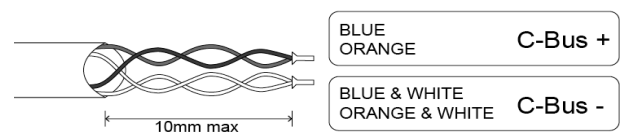


Illustration 3.2: C-Bus cable connection

WARNING: Cable outer jacket not to be stripped back further than shown in Illustration 3.2 (required for SELV compliance).

Sufficiently loosen the two connector screws to allow the cable (with or without crimp ferule) to be inserted. Insert the cables maintaining the polarity as shown in Illustration 3.3 and securely tighten.

IMPORTANT: Ensure the C-Bus wires are correctly paired together and terminated to the correct locations on the provided connector.

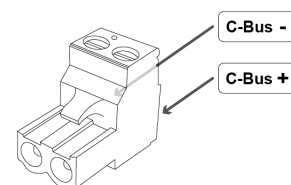


Illustration 3.3: C-Bus connector termination

Optionally, electrical insulating tape can be applied over the connectors screw terminals and onto the cable to provide additional mechanical support.

3.2.4 Physical Installation (Step 3)

Plug the connector into the mating socket on the rear of **SmartSERVER**. The connector is keyed and will easily engage when inserted with the correct orientation.

NOTE: Fully engage the connector with correct orientation – Do not force.

Carefully move the **SmartSERVER** back against the mounting surface ensuring the C-Bus cable generally feeds away from the unit at right angles, and does not kink or sharply bend any of the individual conductors.

Loosely inserting both of the provided retention screws prior to final tightening may assist in initially aligning the unit.

Do not over tighten the screws, also taking care to avoid cosmetic damage to both the screw head and **SmartSERVER** front panel.

3.3 Setting up & C-Bus Integration

The C-Bus system does not need to be operational to configure the SmartSERVER to C-Bus database, meaning this can be done offsite prior to physical installation.

Please remember though, just like any other C-Bus device you need to allocate an address using Clipsal's C-Bus Toolkit software.

NOTE: Do not forget to configure the SmartSERVER C-Bus interface using the Clipsal Toolkit software available from Schneider Electric.

3.3.1 Login as the Installer

To proceed you need to know:

- the **SmartSERVER** network address,
- a login account name, and
- an account password.

If this is an initial installation SmartSERVER default values will apply. Default values can be found in Section 5.1.1 (page 41).

For existing installations which are being updated the procedure is the same as for an Administrator and is given at Section 2.2.1 (page 15).

HINT: Correlate provides a network discovery tool which can be useful when trying to identify the current IP address of SmartSERVERs on the local network. It is provided free of charge as an installation aid and can be downloaded from our website (www.correlate.com.au)

The SmartSERVER includes an Auto MDIX feature it is possible to connect to a laptop or PC LAN port directly without the need for a crossover Cat5e/6 cable. If using this method remember to ensure that LAN port is configured for operation without a DHCP server.

3.3.2 Location & Time

Location and time settings will ordinarily be configured once during initial installation. These settings relate to the actual site location, and the parameters are not ordinarily subject to change. They are stored in non volatile memory within the SmartSERVER and will be retained in the event of a power loss.

The screenshot shows the 'Daylight Saving Time (DST) Rules' section with a toggle for 'Observe DST' set to 'On'. Below this, the 'Start' date is set to '1st Sunday of November' and the 'End' date is set to '1st Sunday of March'. The 'Local Date and Time' section shows the 'Local Time Estimate' as '(00:00 to 23:59)', the 'Current Local' time as '21:05 Tue 09 Jun, 2015', the 'Time Zone (UTC) Offset' as '10 hrs ahead of UTC', and the 'DST Offset' as 'inactive'. It also lists the 'Next Start' as '02:00 Sun 01 Nov, 2015' and the 'Next End' as '03:00 Sun 06 Mar, 2016 (DST)'. The 'C-Bus time Maintenance' section has a toggle for 'Sync C-Bus Time' set to 'On'.

Illustration 3.4: Location & Time

For the customer to make use of this feature the connected network must provide access to the internet for the purpose of retrieving data and time information (Refer to Section 2.3.2). If the network is completely stand alone the C-Bus time sync feature cannot be used.

During commissioning of the **SmartSERVER** internet access will also be needed to establish the applicable time zone. If internet access is unavailable at that time, complete other parameter settings and advise the Administrator of the need to complete that entry at a future opportunity.

Daylight Saving Time (DST) Rules

SmartSERVER automatically calculates Daylight Saving Time (DST) start and stop dates based on a set of rules. These rules will only need to be updated after initial setting, if the local authority makes changes regarding the ongoing observance of DST in your region.

Step

1. From the left menu select:
Installation > **Location & Time**
2. In you are not already logged in with an Administrator or Installer account you will be prompted to enter an **Account Name** and **Password**.
3. If DST is observed in your region set **Observe DST – ON**; otherwise set **Observe DST – Off** and proceed to the last step.
4. Local authorities do not usually specify a fixed numerical date (e.g. 12/05/2015) for DST start and end events. Rather the adopted norm is the nth occurrence of a certain day within a month (e.g. 2nd Sunday of May). SmartSERVER allows you to enter start and end dates in this format and will then automatically calculate the numerical dates each year for you. Enter the rules that apply in your region into the **Start** and **End** fields (3 items for each).

- If you wish to discard all newly entered unsaved data and start over select **Revert** otherwise select **Submit** to save and implement the data entered.

Local Date and Time

Your local time zone needs to be determined so that SmartSERVER can synchronise its clock with Internet (UTC) time.

Before proceeding it is first necessary to:

- Connect the SmartSERVER to a local network with Internet access, and
- Ensure the Internet Time Service is enabled (Refer to Section 2.3.2).

Step

- From the left menu select:
Installation > **Location & Time**
- In you are not already logged in with an Administrator or Installer account you will be prompted to enter an **Account Name** and **Password**.
- In the **Local Time Estimate** fields enter the hours (0..23) then minutes (0..59) of the approximate current local time.

The approximate time needs to be within +/- 15 minutes of actual for the SmartSERVER to accurately calculate your time zone offset.

After midday in 24 hour format the hour continues to increment beyond 12 and no pm indicator is required (e.g. 1:05 pm is equivalent to 13:05).

NOTE: If you are entering a local time which includes a DST, offset you should also setup the DST rules from the preceding section.

- If you wish to discard all newly entered unsaved data and start over select **Revert** otherwise select **Submit** to save and implement the data entered.
- Check that the **Current Local** field is displaying the correct time and date. If DST observance was set the **Next Start** and **Next End** event dates will also be shown.

As applicable, SmartSERVER will always apply DST start at 2am in the morning and end DST by turning the clock back 1 hour at 3am.

C-Bus time Maintenance

The C-Bus network time can drift unless it has access to an accurate time master device. This drift will affect automatic features such as scheduled events, and user time display.

SmartSERVER can be activated to manage the C-Bus time, and also ensure time and date information is correctly restored after an extended power outage.

Internet data access is required to support this feature.

Step

- From the left menu select
Installation > **Location & Time**
- In you are not already logged in with an Administrator or Installer account you will be prompted to enter an **Account Name** and **Password**.
- If you require SmartSERVER to maintain the C-Bus network time set **Sync C-Bus Time - ON**; otherwise set **Sync C-Bus Time - Off**.
- If you wish to discard all newly entered unsaved data and start over select **Revert** otherwise select **Submit** to save and implement the data entered.

3.3.3 C-Bus Circuit Definition

The C-Bus professional will need to determine which C-Bus circuits the end user will likely need to access, and enter the data for those accordingly.

Primarily this information mirrors the configuration parameters already entered into the Clipsal C-Bus Toolkit and includes:

- Network (local if C-Bus bridges are not present)
- C-Bus Application
- Group ID
- Channel No. (Measurement application only)

High and Low state values for a particular group can also be tailored to the C-Bus Application in use. In a lighting application using a relay, 100% and 0% are the respective states. In a Trigger or Enable Application they define an action selector value associated with each state (e.g. Scene 1 Lo "002" & Hi "025"). In applications which report values they set a high and low alarm level for the quantity.

High and Low values are also used to establish the criteria for optional notification emails which on a per circuit basis (Section 2.2.4, page 18) can be sent:

- never (default)
- transition to On/High
- transition to Off/Low

Note, it is also possible to optionally define a controllable circuit as "Monitor" which means that the **SmartSERVER** User will be able to see the current status value but not be able to control it.

C-Bus Circuits

A "Circuit" for the purpose of this manual is anything that can be controlled and/or monitored within the C-Bus installation.

The parameters presented here are essentially the same as those used within the Clipsal C-Bus Toolkit software. As such you are probably already familiar with their meaning, making it a relatively simply process to transpose a subset of that data into the **SmartSERVER**.

C-Bus Circuits (Page: 1)

Reference to C-Bus installation data will be required to complete these definitions.

Label	Description	Network	App	Grp	Ch	Type	Lo	Hi
BBQ	FAMILY deck bbq	Local	56	27	--	Relay	Off	On
DCK	LOUNGE deck	Local	56	34	--	Relay	Off	On
BED2	BED2 main	Local	56	24	--	Level (%)	0	1
BED3	BED3 main	Local	56	37	--	Level (%)	0	1
BATH Main	BATH main	Local	56	41	--	Level (%)	0	1
BATH Van	BATH vanity	Local	56	42	--	Level (%)	0	1
BED4	BED4 main	Local	56	44	--	Level (%)	0	1
FAM Fan	FAMILY sweep fan	Local	56	72	--	Relay	Off	On
DINING	DINING uplights combined	Local	56	85	--	Level (%)	0	1
FAMILY	FAMILY uplights combined	Local	56	88	--	Level (%)	0	1

Lighting (48, 95), Trigger (202), Enable (203) Vent(112), Irrigate(113) and Pool(114) applications may use all of the available "Types", with Lo/Hi values:

- Monitor [0..255]
- Relay OFF or ON
- Level(0..100%)
- Action Selector/Network variable [0..255]

Entries for specialised application requirements are also supported (requires Monitor Type selection):

- Temperature (25) application as a positive integer e.g. 0, 21, 106
- Metering application (209) supports 10 digit positive values.
- Measurement application (228) accepts values of form [sign][number nnnnn][e][sign][number] e.g. 1234e-23

NOTE: When using "Monitor type" with a lighting application to disable control functionality, values of 0..255 proportionally correspond to intensity levels 0 through to 100%.

Illustration 3.5: Circuit Definitions

Multiple entries for the same net+app+grp combination can be made. This can be useful, for example, to define additional scene trigger or schedule enable values, or perhaps adding additional alert notification levels on a monitored circuit.

Step

- From the left menu select **Installation** > **Circuit Definition**
- If you are not already logged in with an Administrator or Installer account you will be prompted to enter an **Account Name** and **Password**.
- The current page shows 10 of the available C-Bus Circuits at a time.

Navigate to the page where you wish to enter or modify data by using the **<** (backward) and **>** (forward) button under the left side menu. To help you keep track of where you are the current page number is displayed between the two.

Note: The **<** or **>** navigation button will be disabled (turn grey) when the lower or upper page respectively is reached.

- A complete C-Bus "circuit" is defined within a single row of the table.

IMPORTANT: To complete the data entry it is necessary to have access to the C-Bus installation data produced by the Clipsal C-Bus Toolkit software.

- Each row defines a single C-bus Circuit which can then be made available by the Administrator to a user on via a Keypad, and/or produce notification e-mail messages. Each field should be populated with relevant data as follows:

- Label** text will be visible by the User via a Keypad. It should be concise and meaningful, and can be modified by an Administrator at any time.

- Description** text should uniquely identify a C-Bus circuit for management and Key assignment purposes. It is not visible to the User and can be modified by an Installer only.
- Network** Most installations will be comprised of a local network only. Where multiple C-Bus networks are connected by bridges one of the paths defined in Section 3.3.4 below can be selected.
- App** should have the C-Bus application number entered in decimal form (i.e. 0 to 256).

NOTE: Not all App values are valid or supported by C-Bus and/or SmartSERVER (see Table 4.2: Software Specification on page 37).

- Grp** should have the C-Bus group entered in decimal form (i.e. 0 to 254).
 - Ch** is applicable only to the C-Bus Measurement Application. It allows each group addressed device to have one or more reporting channels. Enter the channel number for the particular data you are interested in (i.e. 0 to 255).
 - Type** C-Bus circuit type is determined by the circuits application type (App) and the installed supporting hardware (refer to Table 3.2).
 - Lo** Allow the notional low value to specified for alarm notification and action selector purposes¹ (refer to Table 3.3).
 - Hi** Allow the notional high value to specified for alarm notification and action selector purposes² (refer to Table 3.3).
- If you wish to discard all newly entered unsaved data and start over select **Revert** otherwise select **Submit** to save and implement the data entered.
 - Navigate to any additional page where Circuit data is to be entered or modified by using the **<** (backward) and **>** (forward) button under the left side menu. Repeat steps as above.

- The value entered here will also be treated as the "Off" value for Action Selector switching purposes.
- The value entered here will also be treated as the "On" value for Action Selector switching purposes.

Type	Description
Disabled	Disabled.
Monitor	The circuit can provide a value but cannot be controlled. Always used by Measurement, Metering and Temperature Broadcast Applications (e.g. <i>outdoor temperature, total energy consumption</i>). When applied to other applications such as Lighting the control capability to is artificially inhibited.
Relay	The installed hardware for this circuit can switch On/Off (e.g. <i>a voltage free relay</i>)
Level %	The installed hardware can adjusted to provide an out level from 0 to 100% (e.g. <i>a lighting dimmer</i>)
Act Sel	Use this with applications where an Action Selector is used to specify a state value from 0 to 254 (rather than a percentage level). Always used with Trigger (Scene) and Enable (Schedule) applications. (e.g. <i>Scene 34, Trigger set to 56</i>)

Table 3.2: Definition of SmartSERVER C-Bus Circuit types

Application	Range	Valid Format	Examples
Lighting, Switch & Load (48..95)	0 to 100%	0 .. 100	"0" "12" "34" "99" "100"
Temperature Broadcast (25)	0 to 63°C	0 .. 255 ³	"84" (for 21°C) "85" (for 21.25°C) "102" (for 25.5°C)
Metering (209)	0 to (2 ³² -1)	0 .. 4294967295	"65278" "5" "998"
Measurement (228)	<i>n</i> : -2 ¹⁵ to (2 ¹⁵ -1) <i>m</i> : -128 to 127	+/-ne+/-m ⁴	"+1234e-56" "1e1" "10" "-59e+67"
Trigger (202) Enable (203)	0 to (2 ⁸ -1)	0 .. 255	"0" "1" "125" "255"
All others	0 to (2 ⁸ -1)	0 .. 255	"0" "1" "125" "255"

Table 3.3: Lo and Hi Monitor value entry

3.3.4 Networks & Bridges

Individual C-Bus networks can be linked together using C-Bus Bridge units. Most C-Bus networks do not need or use Bridge units. When present though, two basic implementation topologies exist:

- In some cases Bridges are used to extend physical range and may be configured to simply pass data traffic between individual networks. When configured in this way all traffic appears as if it is on the local network. The presence of bridge units is completely transparent to other C-Bus equipment, including the **SmartSERVER**.

NOTE: Configure C-Bus circuits specified in Section 3.3.3 to use the "local" network with this topology.

- Bridges may also be used to provide a path for selected data traffic across two or more serially linked networks. In this configuration the bulk of data traffic is constrained to each of the respective local networks.

The C-Bus protocol allows for a maximum of 6 bridges in depth serially connecting up to 7 networks.

- Temperature = (value / 4) °C, where value is 0 to 255.
- Values in exponential form do not include a decimal point in either the significand (*n*) or exponent (*m*) part e.g. Do not enter 1.23e5, enter 123e7 instead. Inclusion of exponent e(m) part is optional.

C-Bus Network Routing

Commencing at the closest bridge (br1), enter complete C-Bus [near,far] data pairs until the required destination network is reached.
To specify a bridge as not present enter "-" into the address location.

		Addresses for Each Bridge [near,far]											
		br1		br2		br3		br4		br5		br6	
C-Bus (A)		253	222	-	-	-	-	-	-	-	-	-	-
C-Bus (B)		-	-	-	-	-	-	-	-	-	-	-	-
C-Bus (C)		-	-	-	-	-	-	-	-	-	-	-	-
C-Bus (D)		-	-	-	-	-	-	-	-	-	-	-	-
C-Bus (E)		-	-	-	-	-	-	-	-	-	-	-	-

NOTE: Orphan address data after the last complete [near,far] address pair on any route will be automatically cleared on submit.

Illustration 3.6: Networks & Bridges

SmartSERVER has provision for the configuration of 5 such individual network paths, each one up to this maximum allowable depth. Where an application supports status polling, the **SmartSERVER** will routinely seek synchronisation updates for circuits that exist at the end of a network route. The C-Bus Circuits specified in Section 3.3.3 above each include a Network specification as well as a group and application. When other than "local" is selected the corresponding path defined here will be applied.

Both the afore mentioned topologies can be present in a C-Bus system.

C-Bus Network Routing

Step

- From the left menu select **Installation > Networks & Bridges**
- In you are not already logged in with an Administrator or Installer account you will be prompted to enter an **Account Name** and **Password**.
- Each row defines a single C-bus Network path which will be available for use when you define a C-Bus Circuit (3.3.3). Each field should be populated with relevant data as follows:
 - Near** The bridges near side address.
 - Far** The bridges address in the far (next) network.

By convention the bridge units address within each C-Bus network is typically set to the adjacency Networks ID (Illustration 3.7).

- Any numerical entry can be cleared by entering a double negative "--" for before saving. Be aware:
 - that both a near and far address must be entered for an individual bridges entry to be accepted
 - a path must be continuous commencing at br1 and progressing through to the last bridge required. Missing entries within the route are not permitted.

5. If you wish to discard all newly entered unsaved data and start over select **Revert** otherwise select **Submit** to save and implement the data entered.

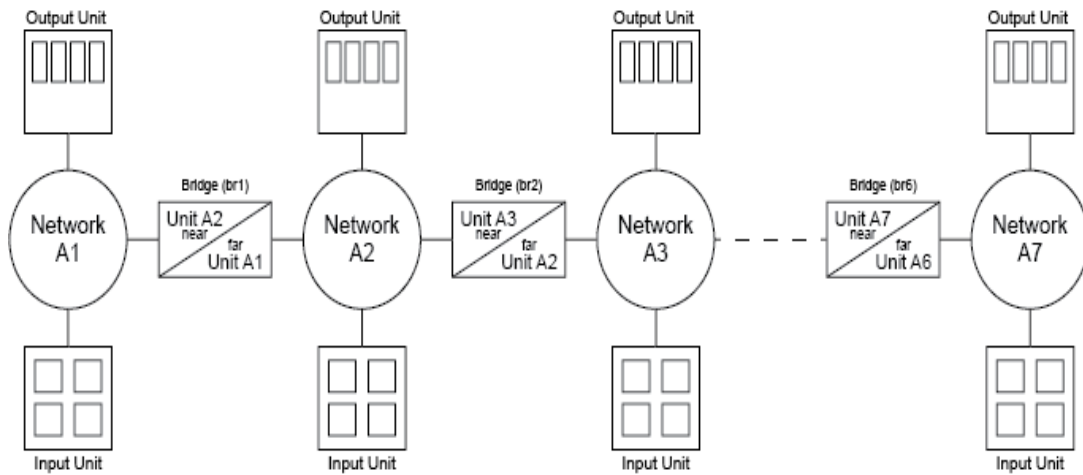


Illustration 3.7: C-Bus Network bridges and addressing

3.4 Handover Checklist

Before handover of the installed system please check the items in both Table 3.4: Installation checklist and Table 3.5: Installation Specific Data for Client have been fully completed (if you intend to provide a printed version of this manual to your client).

NOTE: A standalone A4 form version of this checklist is also available for download from Correlate website.

Description – All installations		Completed
R1	Physical installation completed in accordance with local regulations and product specific requirements	<input type="checkbox"/>
R2	All C-Bus Circuits for interface with SmartSERVER fully defined and tested (including network routing)	<input type="checkbox"/>
R3	Description field for each circuit allows unique identification of purpose	<input type="checkbox"/>
R4	Notification levels set for all Circuits	<input type="checkbox"/>
R5	Installer login changed from default and recorded below.	<input type="checkbox"/>
R6	Administrator login changed from default and recorded below	<input type="checkbox"/>
R7	Any User login accounts created for test and commissioning removed	<input type="checkbox"/>
R8	Installation configuration saved – retained copy	<input type="checkbox"/>
R9	Installation configuration saved – client copy	<input type="checkbox"/>
R10	Copy of this documentation (electronic and/or printed) given to client	<input type="checkbox"/>
The following are optionally applicable to specific installations only		
O1	Time zone offset has been established (if applicable to installation)	<input type="checkbox"/>
O2	DST setting and rules (if applicable) set for locations requirements	<input type="checkbox"/>

Table 3.4: Installation checklist

R5	Installer	Name:		Pwd:	
R6	Administrator	Name:		Pwd:	
R11	IP Address:	DHCP	<input type="checkbox"/>	or	____.____.____.____
R12	Name on Net:				
R8/9	Config File:				
	By:				
	Signature:				
	Company:				

Table 3.5: Installation Specific Data for Client

PART 4 - PRODUCT INFORMATION

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4.1 Limitations of Usage

The **products offered by Correlate are not endorsed for life or safety critical applications**. They should never be used as the primary, principle or only means to achieve a purpose, where failure to operate could have unacceptable consequences.

Unless specifically identified within the product specification all of Correlate's products are intended for indoor use only and are **not developed for use in explosive or otherwise dangerous environments**.

Correlate does not recommend or endorse use of its products in any of the applications mentioned above.

Other situation may exist where the use of Correlate's products are not appropriate. Installation of equipment should only be carried out by personnel able to adequately assess the suitability and safety of any particular potential installation.

4.2 Technical Specifications

4.2.1 Electrical

Parameter	Value				Note
	min	nom	max	units	
DC Supply IN	4.5	5	7.5	V	Reverse, under, over voltage protected.
		200		mA	
C-Bus supply IN	15		36	V DC	Does not supply current to the C-Bus network.
		32		mA	
Ethernet					Fast Ethernet with auto MDIX (crossover).
C-Bus system clock		none	yes		Software selectable via C-Bus toolkit.
C-Bus network burden		none	yes		Software selectable via C-Bus toolkit.
Operating Temperature	0	21	45	C	
Operating Humidity	0		95	% RH	Non-condensing.

Table 4.1: Electrical Specifications

4.2.2 Software

Parameter	Value	Note
C-Bus Applications	Lighting, Switching & Load Control	Supports multiple and all available IDs (48 to 95).
	Trigger Control	Typically used to trigger scenes
	Enable Control	Typically used to support schedules
	Clock & Timekeeping	Broadcast of date and time as Master Time Device.
	Measurement	Reporting of measured values, most with automatic unit inclusion.
	Metering	Reporting of utility consumption (electricity, gas, water, oil) with units of measurement.
	Temperature Broadcast	Reporting of current temperature.
C-Bus Networks	Routes 5 defined + local	Defined message route through remote networks.
	Bridge depth	Maximum depth supported by C-Bus.
C-Bus Groups	0-40	May exist on any of the supported networks and applications.
	Self synchronisation	Will process MMI broadcasts and periodically seek level data (as applicable) on local and remote networks.
SmartSERVER login	User/Group accounts (4)	Accounts can be assigned to a single user or groups of individuals.
	Admin account (1)	Access to all menus except those defining integration with C-Bus.
	Installer account (1)	Access to all menus available.
	Access control by login	Username and password required.
NTP support	Yes	NTP is an internet protocol used for transferring current date and time information.
DDNS support	Yes	DDNS (Internet domain) services currently supported: DynDNS, No-IP & DNS-o-Matic.
E-mail	smtp	Outgoing email for system and C-Bus notifications ("To: ", "cc:" and "bcc") on definable events.
Internet Protocols	TCP, UDP, HTTP, HTTPS	HTTPS uses TLS(1.2) with session resumption.
Browser Requirement	XHTML 1.0 / HTML4 and later.	Javascript must be enabled.
UI Update Rate	Local network - every 200ms	
	Remote network - dynamic	Rate automatically reduces to conserve data usage.
Number of Keypads	6	
Number of Key location per keypad	5	
Navigation	Mouse	Mouse devices are supported
	Touch	Touch screen input including swipe action supported for equipped devices.
UI Themes	Select from predefined	Can be assigned on a per Keypad basis.

Table 4.2: Software Specification

4.2.3 Physical

Parameter	Value	Units	Note
Controls	Restart		Front panel. Momentary press will restart SmartSERVER reloading currently saved parameters.
	Reset		Recessed – operation requires insertion of fine blunt instrument. Press and hold with Restart for 5 seconds then release to restore factory default settings.
Indicators	Power		On when supply IN is within protection limits.
	Run		Flash every 1s (typ) during operation.
	Ethernet Link		On when Ethernet network present.
	Ethernet Activity		On during any data activity on connected Ethernet network.
Connections	DC-Power		Centre pin positive. 5.5mm/2.0mm barrel connector
	Ethernet (RJ45)		Auto MDIX crossover if required.
	C-Bus (2 pin plug)		TE Connectivity 5.08mm pitch Termini Blok
Weight	198	g	Nominal, SmartSERVER only including mounting screws (2).
Dimensions (WxHxD)	106.5 x 56.5 x 47	mm	Nominal, not including rear C-Bus connector.

Table 4.3: Physical Specifications

4.3 Regulatory Conformance

Independent testing of the SmartSERVER design has been used to confirm compliance with the standards specified within this section.

4.3.1 Australia and New Zealand

The SmartSERVER product complies with the AS/NZS listed within Table 4.4.


	Regulation	Standard	Title
	EMC (C-Tick)	AS/NZS CISPR 22	IT Equipment Emissions Standard
		AS/NZS CISPR 24	IT Equipment Immunity Standard

Table 4.4: AS/NZS Standards compliance

4.3.2 Europe

The SmartSERVER product complies with the EN standards listed within Table 4.5.

	Regulation	Standard	Title
	European Council Directive	EN 55022	IT Equipment Emissions Standard
	89/336/EEC	EN 55024	IT Equipment Immunity Standard

Table 4.5: European Union Standards Compliance

4.3.3 International

The SmartSERVER product complies with the Internationally recognised standards listed within Table 4.6.


	Regulation	Standard	Title
	EMC	CISPR 22	IT Equipment Emissions Standard
		CISPR 24	IT Equipment Immunity Standard
	SELV	IEC 60950-1 (Class 3)	IT Equipment Safety Standard

Table 4.6: International EMC Standards

4.3.4 United States of America

Table 4.7 is applicable to SmartSERVER product sold inside of the United States of America.


Regulation	Standard	Title
 <p>Tested to Comply With FCC Standards</p>	FOR HOME OR OFFICE USE	Part 15 of the FCC Rules

Table 4.7: FCC Requirements, USA

FOR HOME OR OFFICE USE

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Class B Product:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instructions, may cause interference harmful to radio communications. There is no guarantee, however, that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or TV technician for help.

Warning: Any changes or modifications to this unit not expressly approved by Correlate Pty Ltd could void the user's authority to operate this equipment.

4.3.5 Export Restrictions

Where product(s) are being considered for re-export please contact Correlate directly to determine if the item(s) are affected by an export control restriction.

A number of Correlate's products contain sensitive digital and software features, including in some instances encryption algorithms. Products which include component affected by U.S. export/re-export regulations may not be shipped to U.S. prohibited countries and destinations which includes (but are not necessary limited to) Cuba, Iran, North Korea, Sudan, Syria.

4.4 Maintenance

4.4.1 Product Care

The **SmartSERVER** has no specific routine maintenance requirements.

To keep the unit clean dry dust or wipe with a soft cloth as and when required.

Marks should be removed using a soft damp cloth and light wiping action. Never use chemical cleaners on the **SmartSERVER** as these may have adverse effects on plastic trim and printing.

4.4.2 Backing up SmartSERVER Configuration Data

The **SmartSERVER** configuration file enables an existing or previous configuration to be uploaded back into the unit (or repaired/replacement unit). Without such a file it may be necessary for you to call out your C-Bus installation profession to redo that part of the installation.

IMPORTANT: Always keep at least one copy of the current SmartSERVER configuration in an accessible and safe location.

Instructions for creating a configuration file are given in Section 2.5.1, page 23. Do not wait until you have a problem, create a uniquely named backup of the configuration now.

4.4.3 Software and Firmware Updates

Check the Correlate website from time to time for updates to the operating firmware and user interface. These may include important security enhancements, bug fixes and/or product enhancements. Please always use the latest version releases compatible with your **SmartSERVER** product.

4.4.4 Warranty and Repair

This warranty is transferable from the initial purchaser to the current and any subsequent owner of the premises in which the SmartSERVER is installed. Please note:

1. Warranty and/or repair services exclude any and all aspects relating to the removal, installation or configuration of the **SmartSERVER** product.
2. As part of the repair process configuration data loaded into a **SmartSERVER** may be lost.
3. A replacement unit provided under warranty will have factory default settings applied.

You are responsible for ensuring that a copy of the current configuration is available for reloading into the **SmartSERVER** (Section 2.5.1).

Warranty Terms

Correlate provides a TWO (2) YEAR WARRANTY that the SmartSERVER will be free from defects in materials and workmanship.

Correlate makes no other warranty, express or implied, and any implied warranty of merchantability or fitness for a particular purpose which exceeds the foregoing warranty is hereby disclaimed.

Please note it is the consumers responsibility to organise and provide the safe return of any product to the provided address (including any packaging and shipping costs).

Correlate reserves the right at its discretion to either, repair free of parts and labour charges, replace or offer refund in respect to any article found to be faulty due to materials or workmanship. The return of any goods will be at Correlate's expense using its standard shipping methods.

Australian Customers: Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Return and Repair

Should you believe a product is faulty or has been damaged please firstly use one of the contact methods below to provide us with details of the problem, including the circumstances, if any, under which it occurred. If we are unable to satisfactorily resolve the issue, and the product needs to be returned we will provide to you:

- a unique Return Material Advice (RMA) reference number to identify your claim,
- return shipping address details,
- any other information (as required on case by case basis) to facilitate the products return.

Contact us

For warranty and servicing requests we suggest completing our online web form at www.correlate.com.au/servicing.

For all other enquiries, or if you do not wish to use the online service form, please feel free to make contact using one of the following methods.

Function	Email address
Technical Support:	support@correlate.com.au
Sales:	sales@correlate.com.au
Enquires of a general nature:	contact@correlate.com.au

Table 4.8: Correlate e-mail contact addresses

We welcome your feedback and suggestions. If there is something about this product operations which you feel could be improved, or perhaps have discovered a software bug, or a new feature that could be added, please let us know either by email at contact@correlate.com.au or via our website at www.correlate.com.au/feedback.

All written correspondence should be sent to (do not send items for repair):

Correlate Pty. Ltd.
P.O. Box 580
Church Point NSW 2105
Australia

PART 5 - REFERENCE

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5.1 Configuration Settings

5.1.1 Factory Default

Factory default settings apply to a **SmartSERVER** which has not been configured by an Administrator or Installer, or has had an ERASE operation performed.

It is important that both Administrator and Installer passwords are changed from the factory default values to help restrict unauthorised access. This is particularly important if the **SmartSERVER** has been installed such that is is accessible over the internet.

Account	Name	Password	Note
User A	UserA		Account cannot be used until a password is entered.
User B	UserB		Account cannot be used until a password is entered.
User C	UserC		Account cannot be used until a password is entered.
User D	UserD		Account cannot be used until a password is entered.
Admin	admin	cbus4Net	Should be updated to your own unique selection as soon as possible.
C-Bus Installer	instl	cbus2Config	Should be updated to your own unique selection as soon as possible.

Table 5.1: Default login account details

Account	Keypad 0	Keypad 1	Keypad 2	Keypad 3	Keypad 4	Keypad 5	Note
User A, B, C, D	No	No	No	No	No	No	No access by default.
Admin	Yes	Yes	Yes	Yes	Yes	Yes	Cannot be changed.
C-Bus Installer	Yes	Yes	Yes	Yes	Yes	Yes	Cannot be changed.

Table 5.2: Default keypad access permissions

Parameter	Value	Note
Host Name	cbus	Default name advertised onto the local network.
Enable DHCP	On	Account cannot be used until a password is entered.
IP Address	192.168.2.200	This address will only be used if a DHCP server cannot be found.
SmartSERVER Control	On	Control functionality is enabled but C-Bus circuits are not defined.
DDNS Service	None	Use of this function requires a provider account.
NTP Service	None	Server region set to none disables the Internet Time Service.

Table 5.3: Default Connectivity Settings

5.1.2 Current Setting Summary (About)

The About page provides a summary of the **SmartSERVERs** current operational configuration and status. It can be accessed as described in Section 1.3.2, page 10.

Heading	Field	Description
Local Network	NetBIOS Name	This is the name the SmartSERVER will identify itself with on the local network.
	IP Address	IP address currently being used by the SmartSERVER.
	MAC Address	All ethernet interfaces have a unique identity code permanently assigned to them.
C-Bus	Address	Address on the C-Bus network as assigned by the Clipsal C-Bus toolkit during installation.
	Connection	Status of C-Bus network communication.
	Maintain C-Bus time	Whether the SmartSERVER will broadcast time updates onto the C-Bus network.
Notifications	Last email	Email server response to the last email sent by the SmartSERVER.
	System Message	Whether System messages will be sent to e-mail recipients.
	C-Bus Event	Whether defined C-Bus changes will be sent to e-mail recipients.
Security	Passwords Enabled	Password login is always required and cannot be disabled.
	Email use SSL	Emails are sent using standard smtp. This current software release does not support SSL(TLS) encryption of the outgoing notification messages. Always "disabled".
	Password use https	All screen access requiring a login also will require a connection secured using https.
Time & Date	Current Local	Local time and date, if known.
	DST	Daylight saving (summer time) current status
	Time Zone Offset	Local time zone offset from international time
Server Details	Model	Specific model name
	Serial Number	SmartSERVER unique hardware serial number.
	SW Version	Currently installed firmware version
Internet Time Sync	NTP Status	Communication status with the selected Internet time server.
	UTC/GMT	International time and date, if known
	Server	Internet time server selected for use.
Internet DDNS	DDNS Status	Connection status with selected DDNS provider
	External IP Address	SmartSERVERs IP address on the Internet (Only if provided by SmartSERVER DDNS feature ¹). This information is dynamically updated by your internet provider – use the URL for access over the Internet.
	URL	SmartSERVERs internet URL (Only if provided by SmartSERVER DDNS feature ¹).
	Server	DDNS provider selected for use by the SmartSERVER..

Table 5.4: About Screen Explanation

Note 1: IP address and URL will only be correct if the SmartSERVER is responsible for maintaining the DDNS information. If another device on your network is providing that service the information here will not be current.

5.2 Frequently asked Questions (FAQ)

5.2.1 Make your interface behave like a custom application on your Smart phone

Save to the desktop for easy access and a full screen experience

5.2.2 Stop continual Login prompts

The **SmartSERVER** will always ask for an account name and password. If access to your computer or phone already has password or another form of access control in place it may be handy to get rid of this requirement for duplicate authentication.

Most devices provide a method to have your name and password remembered for automatic submission. All devices are a little different but in general look for something like the following:

- (a) The login prompt may have a checkbox for "Remember Login". Click that if available
- (b) In the device settings for the browser select enable "Remember Login".

With these methods you are relying on the device manufacturers software to keep your details secure.

NOTE: If your device supports the above methods they are generally the preferred and most secure way to implement automatic login.

Another method is to embed the account name and password in the address URL. So for example say you normally access your **SmartSERVER**:

- address: <http://192.168.2.200>
- account name: *Hannah*
- password: *CantGuess45*

Manually include the account name and password separated by a colon and followed by a "@" in the link. Using the preceding example data, this would look like: <http://Hannah:CantGuess45@192.168.2.200>

Entering this data each time in the link will obviously not save you any effort, but if you save the page as a link onto you desktop then that data will be retained for you. Please be aware though this later method has a number of potential drawbacks which you should be aware of:

- If your device is shared with others it may be possible for them to extract your saved account name and password from the link,
- A "man-in-the-middle" attack where someone breaks into you communications link will expose your account details, whether or not you are using a https secured connection or otherwise, and
- Not all devices and browsers support the entry of account names and passwords into the URL.

5.2.3 I saved my application as a Home screen link but my login details are no longer remembered

Some models of Smart phones cannot access stored login details when the a web page is saved to the Home Screen (In particular certain more recent versions of Apples iOS mail fail in this regard). If you have updated your phones operating system you may have introduced this problem. If you already have this problem see if an update is available as this may fix it. Two simple options are available if you require automatic login:

- Access the page from a browser window or favourites list
- Save to the home screen employing the URL method described in Section 5.2.2.

5.2.4 My web browser warns me my Certificate is potentially invalid when using https: to connect

Using https: (TLS/SSL) requires the **SmartSERVER** to provide information to your device in order to establish an encrypted connection. This and other information is included within what is called a "Security Certificate".

To use a fully validated certificate it would be necessary to:

- Ensure a unique and fixed **SmartSERVER** web address (you may need to purchase a domain name),
- Have a third party certificate provider issue an electronic certificate (these certificates will expire within 3 years and cost approx \$300) be present it would be necessary to install a unique one into each **SmartSERVER** first,
- Upload the certificate file into the **SmartSERVER**.

The reason for including the web address within the certificate is an attempt to help stop a site pretending to be one it isn't.

SmartSERVER uses a self-signed certificate which includes all the necessary encryption information. Most browsers include a method to added a certificate to the "trusted root certificate folder" if you wish to get rid of this warning message:

1. Make sure you are connected to the required **SmartSERVER** address (and hence not someone pretending to be your **SmartSERVER**)

2. Follow the steps applicable to your device to add this certificate to the trusted root certificate folder.

5.2.5 I have an older computing device and the screens look different, is everything going to work ok?

SmartSERVER has been successfully tested on a large number of different platforms, including PCs, laptops, tablets and smart phones.

We have gone back a number of versions of the leading browsers without any real problems. If your device is running old software check that it supports and has enabled these minimum requirements:

- XHTML1.0 /HTML4 (or later)
- Javascript
- CSS3

See if any software updates are available and install them.

The SmartSERVER software has a number of fall back provisions so don't be alarmed if some visual aspects are just a little different, this is quite normal as an older device will not support all the latest graphic features.

5.2.6 Must I use my devices pre-installed web browser?

For many of the main stream products there are a variety of third party browsers available for installation. You are free to use any compliant web browser with the **SmartSERVER**.

5.2.7 I have forgotten my passwords but have saved my current SmartSERVER configuration. Can I use a text editor to recover them from the file?

No. The SmartSERVER account passwords are securely "hashed" for storage. This is a one way function to stop anyone easily extracting those details from the configuration file and later using them to gain access.

WARNING: The password used for accessing your email server (if entered) is saved within the configuration file in plain text.

5.2.8 The SmartSERVER About page contains a lot of information and I want to know what it means

The meaning of each parameter is described in Section 5.1.2 (page 42).

5.2.9 Internet Access to the SmartSERVER

Internet access to a local network device provides an interesting set of challenges including addressing and security.

The majority of local internet connections today do not have a fixed IP address but one that is assigned to them by their internet provider during initial connection, and which is updated from time to time over the lifetime of that connection. This is just like your telephone company regularly changing your home or mobile phone number.

An inbuilt feature allows the **SmartSERVER** to determine your current address and regularly publish that to one of a number of organisations on the web providing directory services. By accessing the directory service you are always redirected to the SmartSERVER no matter if your service provider has changed your address. The common name for this process is "**Dynamic DNS**" or "**DDNS**".

{NOTE} Some Internet Modems provide a similar feature. If this feature is available in yours, you are free to use it instead of the one provided by the SmartSERVER. Either can be used, just don't activate both as the directory providers do not like having twice the required number of update requests.

DDNS providers sometimes provide a free feature limited service, others require a small nominal monthly payment. SmartSERVER supports connection to a selection of the leading providers (see Section 2.3.2).

Your service provider can advise you if you are provided with a fixed IP address. If this is the case you do not need to worry about DDNS and the feature should be switched off.

5.2.10 As an Installer I disabled a C-Bus circuit so it can no longer be assigned to a key. What happens if it was already assigned before I did that?

Disabled circuits are prevented from being assigned to new Keys, however disabling a Key does not remove an existing assignment. Whilst a circuit is disabled however, any existing assignment will have its status update and control functionality suspended.

5.3 Troubleshooting

5.3.1 I cannot connect to the SmartSERVER from my computing device (both on local network)

Please try the following, the order is not critical although this listing here represents a logical sequence:

- (a) Check the **SmartSERVERs** power source has not been interrupted. The PWR indicator on the front panel will be illuminated if power is present.

- (b) Operation of the **SmartSERVERs** internal processor is indicated by the RUN heartbeat indicator (it should be toggling on/off approximately once per second. If not and PWR is present, momentarily press and release the RESTART button. **SmartSERVER** will ordinarily completely reboot within a second.
- (c) Verify that the local Ethernet network connection is present. The LNK ("Link") indicator on the front panel will illuminate when a network is present. Additionally the ACT ("Activity") indicator shows the presence of network data traffic. If both these conditions do not exist then there is a network issue:
 - Check the cabling all the way back to you router or switch for a disconnected (or damaged) cable.
 - Is the problem isolated to **SmartSERVER** connectivity or are other networks devices also having problems? This may help you isolate the cause.
 - Reboot your router, hubs and switches and see if that remedies the problem.
- (d) Can other users still access the **SmartSERVER**? If so then a configuration setting within your device may have been inadvertently changed. Verify data connectivity (e.g. Internet connectivity to another site).
- (e) If you normally connect using WiFi how is you device currently accessing the internet? If it is using a 3/4G mobile network connection then the URL in your bowser may not work.
- (f) The IP address of the **SmartSERVER** used for the last connection may have been re-allocated by your DHCP server. You will need to determine the new address, help in resolving this problem can be found at 5.3.3. To avoid this problem recurring it is recommended you configure your router's DHCP server to always allocate a fixed known IP address to your **SmartSERVER**.

5.3.2 I cannot connect to the SmartSERVER from my computing device over the Internet

It is probably best to first confirm that it is possible to access the **SmartSERVER** from your local network, to isolate the problem as an Internet Connectivity issue.

- (a) Confirm you have configured DDNS on either (but not both) your **SmartSERVER** or router (Section 2.3.2). As part of the setup you will normally be given feedback on the connectivity status with the DDNS service provider.
- (b) You will need to have port forwarding activated in your modem to open up a connection from the internet through your firewall to the **SmartSERVER**. For http connections this will be port 80, and for https connections 443. Enable both or either as required. An example router port forwarding configuration is shown at Illustration 5.1, but all routers are slightly different so you may need to refer to the instruction manual that came with yours. In this example both http and https connections are enabled for the device at IP address 192.168.1.99, which is a **SmartSERVER**.
- (a) If port forwarding is enabled it may specify the **SmartSERVER** destination as an IP address. If you do not have a fixed IP address allocated by your DHCP server (typically in your router) the **SmartSERVER** may no longer be at that address.

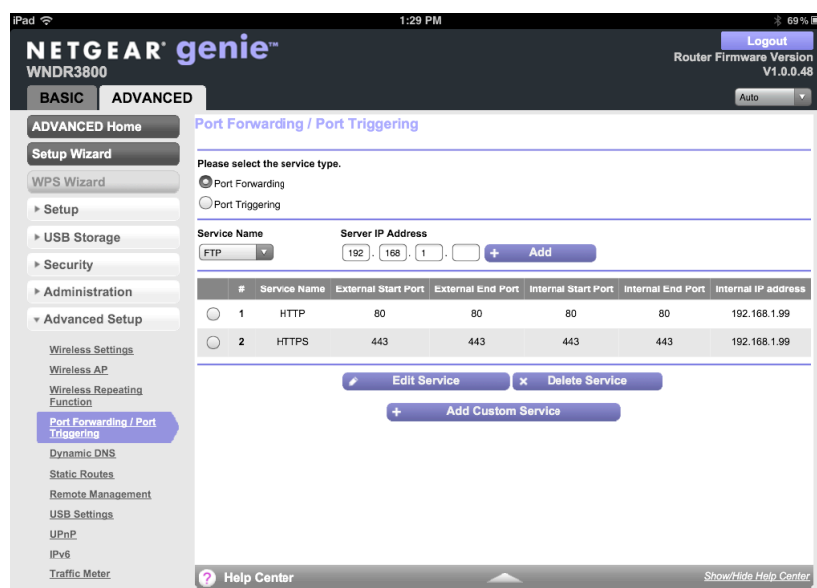


Illustration 5.1: Router Port Forwarding Example

5.3.3 I am unable to connect the SmartSERVER on the local network as I don't know its IP address

1. Does your network have an DHCP server which is allocating IP addresses to network devices? Most modem routers perform this function:
 - (a) **NO**: Try to connect at the default IP address specified in Table 5.3, page 42.
 - (b) **YES**: Log in to your DHCP server (modem/router). Under its DHCP menu it should contain a list of client devices. One may be identified with the default SmartSERVER name "CBUS" (or another name if you have previously changed it). Otherwise try sequentially to connect using each of the listed IP but unnamed addresses
2. Check that your network does not have two active DHCP servers – only one is allowed.
3. Try the "SmartSERVER discovery" application available for download from the Correlate website.
4. Momentarily press the RESTART button on the SmartSERVER front panel and repeat the above over again

5.3.4 When I attempt to connect I get a "Denied 401 message"

The login details, either the account name and/or password are not currently valid or do not have sufficient permission for the feature you are attempting to access.

5.3.5 When I attempt to connect I get a "Forbidden 403 message"

The SmartSERVER has been set to require https: for its connections by the administrator and you are attempting to connect using an unsecured connection.

In the URL change the *http://* part to *https://*.

5.3.6 Sometimes when I leave a screen I am not prompted to save changes, and they are subsequently lost what is going on?

Changes made to SmartSERVER settings are highlighted to indicate they are not yet current and need to be saved. You can choose to either save or revert changes back to their original values. Should you try to navigate away from a screen with unsaved changes generally a prompt will be presented giving you an opportunity to save, or continue.

At present a long term bug within Apple's Safari Browser (mobile version only) fails to allow this prompt to be displayed, meaning newly entered data will unfortunately be lost. So if you are moving between different device types you may experience inconsistent behaviour and need to take care to first save data.

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