

checkbox

Wireless Systems



HSv530a Guest WiFi Controller



Set Up & User Guide



CheckBox Wireless Systems™ are designed to be Easy to Install, Easier to Manage and Easiest to Afford. To make set up as easy as possible, please take a moment to completely read through these instructions before you begin.



checkbox

Wireless Systems

Welcome

We have designed CheckBox Wireless Systems™ to be easy to install, easier to manage and easiest to afford. For best results, before beginning to set up your system, please take the time to read through this booklet completely. The answer to most questions can be found in here.

We are constantly working on adding new features to CheckBox, and as these features develop they will be added to your system automatically via system updates. These updates may change the way some of your administration screens appear and how features function. To keep current on these new features you can download an updated version of this booklet at www.CheckBoxSystems.net

Thank you for purchasing a CheckBox System!

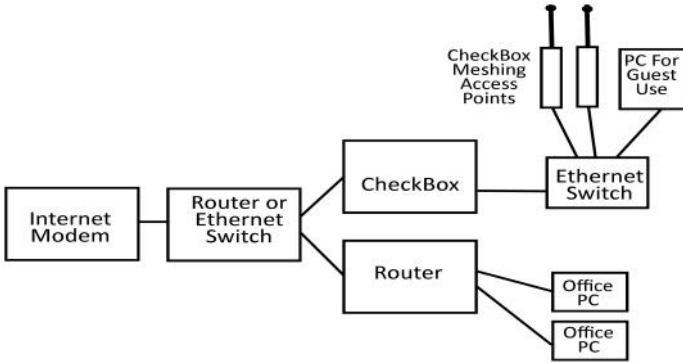


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Connecting CheckBox

The best way to connect your CheckBox System is directly to your DSL, fiber, satellite, or cable modem. It can also be connected through a switch or dedicated firewall system, which may require some configuration on your switch or firewall.



You may also use an Ethernet switch attached to your CheckBox to connect multiple CheckBox Meshing Access Points. You can also connect a wired PC for guests to use to this switch. When connecting multiple access points or guest PCs to the CheckBox be sure to use an Ethernet switch and not a router—routers plugged into the guest network after CheckBox will cause issues with guests being properly authenticated and managed.

Please note - If you are using the private administrative network then any device plugged into the CheckBox will be on the private network and not on a guest network.

An Important note on surge protection

Your CheckBox controller and access points are built to exceed industry standards to withstand power surges caused by electrical fluctuations. Large surges caused by power spikes from the power company, other devices sharing the power circuit or nearby lightning strikes can damage any electronic device, including your CheckBox controller or access points. This damage could cause immediate or delayed failure.

To reduce the risk of damage your CheckBox controller should be connected to an outlet that is not shared by devices that have high start up current demands (such as air conditioners, coolers, or any device with a large motor) and protected by a good quality surge protector. If you regularly experience power glitches or power failures you should use a UPS (Uninterruptible Power Supply) for additional protection. Your modem, switches and firewall devices should all be on the same surge protector and UPS.



Power spikes, particularly spikes from nearby lightning strikes, can also spread through your system through long runs of Ethernet cables that run outside. For long outdoor cable runs, or cable runs between building use fiber optic cables instead of Ethernet cables. Fiber optic cables will not transmit power spikes and provide an effective barrier to contain potential damage from power spikes and lightning strikes.

Installing The CheckBox HSv530a Controller

Locating the equipment

The CheckBox HSv530a must be located indoors in a dry area and should be located close to power and the Internet connection(s)

Connecting the equipment

The CheckBox HSv530a will connect to your DSL, fiber, satellite, or cable modem using an Ethernet network cable. Depending upon your particular modem the jack may be marked "Internet", "LAN", "PC", "Host" or something else.

The CheckBox HSv530a can connect up to five different Internet connections and provides automatic load balancing and automatic failover switching.

Connect your CheckBox HSv530a as follows:

- The Local Port connects to your access points or networks switches connecting your access points.
- Ports A through D are flexible can be connected to either Internet connections or to your access points or networks switches connecting your access points.
- The Internet Port connects to your first Internet connection.



Important

Ports A through D are flexible and can be used for either additional Internet connections or as local ports. However before they can be used you need to select what role they will be used in.

It is O.K. to connect the cables first, but by default the ports are deactivated and you will need to set their role before the system will recognize them.

See page 7.

Logging into your Administration screens

The administration screens are used to manage your system, create and print tickets for your users and view your system status. The administration screens also allow you to view users on the system (Active Clients), view tickets not yet used, and to delete tickets from the system. These screens are accessed through a web browser on your computer, and can be accessed from inside the system or from outside the system from anywhere on the internet. To learn how to access the system from outside the system see **Accessing Your System from the Internet** section in this guide.

To access CheckBox from inside the system make sure your computer is connected to the system, *either by a wireless connection or through a wired Ethernet port connected to the CheckBox controller*. If you are connecting wirelessly select the wireless network “system”, the default name for the CheckBox wireless network. You can change this name later.

Open your web browser and you should see a generic welcome screen.



This is the welcome screen your guests will see when they first log on to your system (you can customize this screen - see page 13). From here your guests are prompted to enter a ticket number, credit card or any of the access methods that you have enabled before they can connect to the internet. Of course you do not have tickets since you have not yet created them! To access the administration screens enter the following in the address bar (NOT your search box):

<http://192.168.17.1:3456/admin>

This will bring up a page warning you that no password has yet been set for the administration screens for your CheckBox. Create a password that is a combination of letters and numbers.

Do not use any spaces or special characters (such as **&**, *****, **@**, **!**)



Enter your chosen password twice and press **Set Password**. A box will pop up so that you can test your password. If you are asked for a user name, leave the user name box empty.

Assigning Flexible Ports

Your CheckBox HSv530a has six Gigabit capable Ethernet network ports. One port is dedicated for local connections—connecting to your access points and switches serving devices on your network. Another port is dedicated for the first Internet connection.

There are four other ports, labelled A through D that can be used for either local or Internet connections.

By default the four flexible ports are deactivated. If you plug a cable into one of these four ports they system will ignore the connection until you assign the port as Local or Internet.

Normally you will only make changes to these ports when you first set up your CheckBox or after adding or deleting an Internet connection.

To change port assignments go to Network Setup -> Port Assignment.

Select the port you want to activate and click on it to cycle through different settings:

Not Used -> Internet -> Local and then back to Not Used again.

After you have made the selections for each port press the update button below.

Port Assignment

- * Your CheckBox has multiple Ethernet ports.
- * The port on the left labeled Local is for connecting to your access points and local switches.
- * The port on the right labeled Internet is for connection to the Internet.
- * The other four ports (labeled with letters) can be set to either Internet or Local and by default are not activated.
- * In most cases you will only need to make changes here during initial setup or if you are adding or removing an internet connection.

Port Speed Color Codes

Gigabit	100mbit	10mbit	Unplugged
---------	---------	--------	-----------

Port Assignments					
Local	A	B	C	D	E
Local	Not Used	Not Used	Not Used	Not Used	Internet

Port Assignment Color Codes

Local	Internet	Not Used
-------	----------	----------

Update

- * **Please note:** Making changes to these ports in some cases will require a restart of your CheckBox.
1. To change a port function simply click on the port you wish to change and click through the 3 options - Internet, Local or Not Used.
Note: you can make changes to ports A through D, but not the two ports dedicated to Local and Internet.
 2. After you have made changes to the ports you wish to use, click on the Submit button.
 3. In some cases, depending upon the changes you have made, you may be required to restart the CheckBox for the changes to take effect.
If a restart is required you will be prompted after pressing the Submit button.

Depending upon the change made your system may require a reboot. If a reboot is required you will be prompted to confirm the reboot. Your system will then reboot, taking about 90 seconds to complete the reboot.

If you have added any Internet connections and those connections need to be assigned a static Ip address you will need to go to Network Setup -> Internet and enter your static IP information for each connection requiring static IPs. If your connection does not need static IPs you can skip this step.

If you have stopped using a port that is set up as Internet, deactivating the port will free up system resources and in some case may slightly improve system performance.

Network Setup

You probably will not need to make any changes in the network setup of your CheckBox system as most Internet Service Providers use DHCP, Dynamic Host Configuration Protocol, to tell the devices connected to their network what address and other parameters to use.

If your Internet Service Provider uses static IP addresses, or if you are connecting CheckBox to a an internal company network you may need to set some network parameters manually.

To enter Network Setup click on **Network Setup** on the top menu and then **Internet** in the drop down menu. The Network Setup page will appear.

Administration | **Access Controls** | **Customize Site** | **Network Setup** | **Mesh**

Current Network Configuration

Internet Connections

```
eth5      E4:3A:6E:0F:43:92      Ethernet: 1000Mb/s      Duplex: Full
Ip        192.168.10.202 Netmask 255.255.255.0      Gateway 192.168.10.1
Dns       192.168.10.1 8.8.8.8
Recent Data Rate 0.0 bps      Maximum Data Rate 78.5 Kbps
Recent Uplink Rate 0.0 bps      Maximum Uplink Rate 0.0 bps
```

```
eth4      E4:3A:6E:0F:43:91      UnPlugged:
Ip        0.0.0.0 Netmask 0.0.0.0 Gateway
Dns
Adapter offline -
```

```
eth3      E4:3A:6E:0F:43:90      UnPlugged:
Ip        0.0.0.0 Netmask 0.0.0.0 Gateway
Dns
Adapter offline -
```

```
eth2      E4:3A:6E:0F:43:8F      UnPlugged:
Ip        0.0.0.0 Netmask 0.0.0.0 Gateway
Dns
Adapter offline -
```

```
eth1      E4:3A:6E:0F:43:8E      UnPlugged:
Ip        0.0.0.0 Netmask 0.0.0.0 Gateway
Dns
Adapter offline -
```

In the Network Setup page you will see a summary of the Internet connections currently connected to each of the ports on your CheckBox.

This page will show you the recent data rates (speed) and maximum data rate on each link. CheckBox will use this information to determine the percentage of the data traffic that each connection will carry, and will adjust this percentage on the fly.

Only Internet ports that have been activated will be displayed here.

The port marked as Internet on the front of the H5v530a will be listed as **eth5**.

If active the port marked as D will be listed as **eth4**

If active the port marked as C will be listed as **eth3**

If active the port marked as B will be listed as **eth2**

If active the port marked as A will be listed as **eth1**

Clicking on the **eth5**, **eth4**, **eth3**, **eth2** or **eth1** will take you to an Internet Access Setup screen for that connection.

If the Internet connection is set for DHCP (automatic configuration) the IP address received via DHCP will be displayed here.

If you need to set a fixed (static or permanent IP address) click on **Fixed** and then enter the IP address, Netmask, Gateway and DNS information in the appropriate boxes. Click Update and then restart your system.

Internet Access Setup

Ip Assignment for eth5

Automatic (DHCP) Fixed Disabled

Adapter Name

Fixed Ip Settings
(required for Fixed IP)

IP Address

Netmask

Gateway

DNS

Local Address

Local Address refers to the IP addresses the CheckBox system assigns to users on the system. By default this address is in the 192.168.17.xxx range. This setting should not be changed under most circumstances. If there is a need to change this address range, select **Network Setup** on the top menu and then **Local** from the drop down menu and enter the new address range in here and press update.

NEVER SET THE LOCAL ADDRESS RANGE TO BE THE SAME AS THE ADDRESS RANGE OF THE INTERNET CONNECTION. This will cause routing errors and you will lose contact with the unit.

Setting Up & Using MultiNet

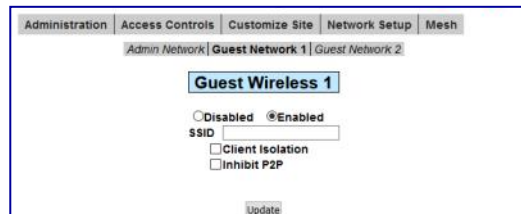
MultiNet provides up to two independent guest Wi-Fi networks and one encrypted management network all with one CheckBox System.

With MultiNet you can

- Create a basic and a premium guest network, one free and one paid, with different bandwidth limits.
- Create guest networks with different branding and different welcome pages, such as one for the entire property and one for a restaurant on the property.
- Provide a third, private network that is encrypted for property management and staff to use.

With MultiNet each access point can broadcast multiple networks simultaneously.

To Setup an additional network using MultiNet go to Network Setup -> Wireless MultiNet. Here you will see a sub menu:



The screenshot shows a web-based configuration interface. At the top, there are navigation tabs: Administration, Access Controls, Customize Site, Network Setup, and Mesh. Below these, there are sub-tabs for Admin Network, Guest Network 1, and Guest Network 2. The 'Guest Network 1' sub-tab is selected, and a blue box highlights the 'Guest Wireless 1' section. In this section, there are radio buttons for 'Disabled' and 'Enabled', with 'Enabled' being selected. Below the radio buttons is a text input field for 'SSID'. There are also checkboxes for 'Client Isolation' and 'Inhibit P2P', both of which are currently unchecked. At the bottom of the section is an 'Update' button.

By default only Guest Network 1 is enabled. Here you disable or enable the network, change the SSID (the name the network broadcasts to devices, and choose Client Isolation and P2P Inhibit options. After making changes press **Update**. Changes may take a few moments to take effect, and if you are connected to the CheckBox wirelessly your connection may be dropped.

Guest Network 2

If you would like to enable a second guest network select Guest Network 2 from the gray menu bar.

You will not be able to set the options for Guest Network 2 until you select Enabled.

After enabling the second guest network, set your SSID and choose Client Isolation and P2P Inhibiting options if appropriate.

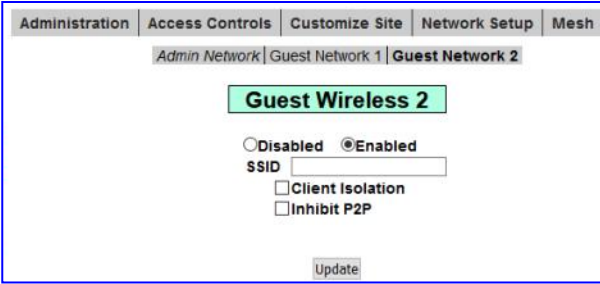
The SSID must be different than the SSID used for your first guest network or your admin network.

Select **Update**. And Wait.

Adding an additional network can take several minutes as the system has to set up the network routes, login screens and update the access points.



The screenshot shows the same web-based configuration interface as the previous one, but now the 'Guest Network 2' sub-tab is selected. A green box highlights the 'Guest Wireless 2' section. In this section, there are radio buttons for 'Disabled' and 'Enabled', with 'Disabled' being selected. Below the radio buttons is a text input field for 'SSID'. There are also checkboxes for 'Client Isolation' and 'Inhibit P2P', both of which are currently unchecked. At the bottom of the section is an 'Update' button. Below the 'Update' button, there is a small text block that reads: 'SSID will uniquely identify your Alternate: Guest Network to your guest's computers, for example: "TablesinnPremium"'. Below this, there is a warning: 'Avoid using tabs, spaces, or the special characters \$ & * ! # ; / , or the quote marks (" or ') in the SSID. These characters can cause problems with some client laptops connecting to the hotspot.'



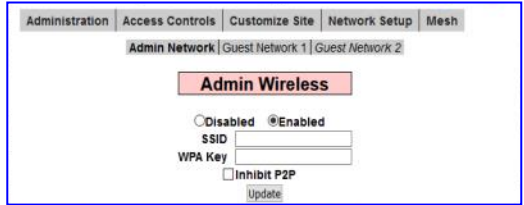
Your second guest network will have its own welcome page, separate graphics and branding and its own set of rules and tickets and PermaCodes. You can set up the welcome page and other options under **Customize Site** and **Access Controls**

Admin Network

With CheckBox MultiNet you can add a third, private network for management use. This network doesn't use tickets or PermaCodes like the guest network, instead it uses an encryption key and is secured with WPA2 encryption.

If you would like to enable the Admin Network select Admin Network from the gray menu bar.

You will not be able to set the options for the Admin Network until you select Enabled.



After enabling the Admin Network, set your SSID and WPA2 key. *The SSID must be different than the SSID used for your guest network(s) or your admin network. A WPA2 key is required to set up the Admin Network.*

The WPA key is a private key or password used by devices connecting to the admin network. This key should never be shared with guests and only shared with employees that need it to set up and manage devices on the Admin Network. The WPA key can be any string of numbers and letters you choose, but can not include spaces or symbols. It must be at least 8 characters long and can be as long as 63 characters. The longer the string the more secure the key is.

After entering your WPA2 key select **Update**. And Wait.

Adding an additional network can take several minutes as the system has to set up the network routes and update the access points. Changes make take a few moments to take effect, and if you are connected to the CheckBox wirelessly your connection may be dropped.

Wireless Access Points

The CheckBox HSv530a can host and manage CheckBox meshing access points in wired and wireless modes. At least one CheckBox meshing access point must be wired into the CheckBox operation.

The SSID is the Service Set Identification - the name of a wireless network that is broadcast to announce the networks presence.

When using CheckBox mesh node access points the ssid and channel of the access points is set and controlled from within the management screens of the CheckBox. If you are using other brands of access points you will need to manage channel changes and SSID as per their manufacturer's directions.

By default the ssid is "system". To change the ssid select **Network Setup** from the top menu and then **Wireless** from the drop down menu. Enter the new name and press update. It is important that your name contain only letters and numbers - no spaces or symbols.

Important: If you are using mesh repeaters allow 10 minutes after update for the mesh repeaters to reconfigure their SSID. During this period Do Not make any other system changes (i.e. Local Address or channel) or you run the risk of the repeaters becoming lost.

By default CheckBox is set to channel 6. Different networks can co-exist on the same channel in the same area, however if you are running another network or there are other networks in your area you may wish to change the channel. To change the channel from the **Network Setup** -> **Wireless** screen select the channel from the drop down box and press update.

Important: If you are using mesh repeaters allow 10 minutes after update for the mesh repeaters to reconfigure their channel. During this period Do Not make any other system changes (i.e. Local Address or SSID) or you run the risk of the repeaters becoming lost.



Setting up Guest Access

In order for guests to access the Internet through your CheckBox System they have to be authenticated. There are several ways your guests can authenticate, including:

Access Tickets

PermaCodes

Credit Cards and PayPal

Free Access

Third Party Systems such as reservation or point-of-sale.*

*Your CheckBox can also be tied to your company loyalty card rewards program and integrated into point-of-sale systems. For more information on integrating CheckBox with loyalty programs and point-of-sale systems please contact CheckBox Support.

The system will automatically generate the appropriate buttons and boxes on your welcome screen; If you have not printed any tickets and have enabled free access and credit cards, then the system will not display a box to enter access tickets. If you have not enabled credit card payments or free access and have created tickets then only the ticket box will be displayed on your welcome screen. If you have not enabled free access or printed tickets and have enabled credit cards then only the credit card buttons will be displayed.

Access Tickets allow you to create and distribute tickets for your guests that allow them an amount of time online that you determine. These tickets can be good for an amount of time ranging from 15 minutes to one year. You can give these tickets away or sell them.

Tickets can only be used by one device and guest can not share tickets or re-use them.



The screenshot shows the 'Generate Tickets for Guest Network 1' page. At the top, there is a navigation menu with 'Administration', 'Access Controls', 'Customize Site', 'Network Setup', and 'Mesh'. Below the menu, it says 'Guest Network 1 | Guest Network 2' and 'Guest Wireless 1'. The main heading is 'Generate Tickets for Guest Network 1' with a sub-heading 'Access time'. There is a table of radio button options for different durations:

<input type="radio"/> 15 minutes	<input type="radio"/> 30 minutes	<input type="radio"/> 60 minutes
<input type="radio"/> 2 hours	<input type="radio"/> 6 hours	<input checked="" type="radio"/> 24 hours
<input type="radio"/> 2 days	<input type="radio"/> 3 days	<input type="radio"/> 6 days
<input type="radio"/> 7 days	<input type="radio"/> 14 days	<input type="radio"/> 30 days
<input type="radio"/> 60 days	<input type="radio"/> 90 days	<input type="radio"/> 120 days
<input type="radio"/> 185 days	<input type="radio"/> 275 days	<input type="radio"/> 1 year

Below the table, there is a 'Shelf life (expiry)' field with a dropdown menu set to '30 - 90 Days' and a 'Generate Tickets' button.

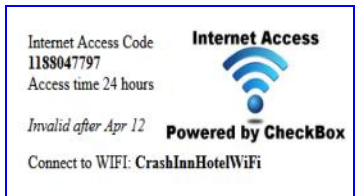
To create tickets click on **Access Controls** on the menu at the top. If you have two Guest Networks make sure you select the Guest Network you want to create tickets for. Select the duration of the tickets you wish to generate and their expiry date (shelf life) and then click on the **Generate Tickets** button.

A new window will open with a sheet of ten tickets that you can print on a standard printer. The sheet can be cut up, or you can use standard business card stock (Avery 5870 or equivalent) and the tickets will print on the cards.

If you do not see the window of tickets open after selecting **Generate Tickets** be sure that you have pop up blockers disabled or that you allow pop ups from the site.

The Graphic on the ticket can be changed under **Customize Site**.

With CheckBox you can accept credit cards automatically through the welcome page. CheckBox uses the PayPal system to clear the transactions and deposit the funds into your account, and allows you to set the pricing and duration. Using credit cards you do not need to be present to hand out tickets - great for unattended locations such as marinas and public spaces.



Using Credit Cards & PayPal

To accept credit cards and PayPal you will need a Business Account with PayPal if you do not already have one. Go to www.paypal.com to setup an account. (If you have an existing personal account you can upgrade to a business account). *Make Sure you specify a Business Account when setting up your PayPal Account*

PayPal access is only available on Guest Network 1.

After your PayPal Business account setup has been completed you will need to log in to your PayPal account and set up the following options:

On your PayPal Account Page go to Account Settings, found by clicking on your account name on the top right hand corner, then to Website Payments and then update Website Preferences. In Website Payment Preferences select the following options

Auto Return: On

Return URL: <http://192.168.17.1:3456/paypalreturn>

Payment Data Transfer (optional): On

Encrypted Website Payment: Off

PayPal Account Optional: On

Contact Telephone Number: Off

Express Checkout Settings: No

Press Save and then go back up to Payment Data Transfer (optional) and you will now have an Identity Token. ***It is very important that you copy this token carefully (using copy & paste) in the next step. We strongly suggest that you copy this token into a blank document to store for safekeeping.***

Once you have completed setting up your PayPal account and have copied your identity token, open the administration page on your CheckBox System and go to **Access Controls** on the top menu and then **PayPal Setup** in the drop down menu.

In the box marked PayPal Identity enter your PayPal ID (typically your email address).

In the PayPal Identity Token box paste your PayPal Identity Token.

Set your prices, and leave as zero's any time increments that you do not wish to offer. Press the Update button when done..

Administration | Access Controls | Customize Site | Network Setup | Mesh

Paypal Setup Page

Paypal Identity

Usually your email address at PayPal

Paypal Identity Token

Obtain from your Paypal Merchant setup

Increment	Price
1 Hour	0.00
2 Hours	0.00
1 Day	0.00
3 Days	0.00
1 Week	0.00
30 days	0.00
1 Year	0.00

Currency: US Dollar

Update

There is a known issue with PayPal that can cause third party transactions with cents (i.e. \$1.99, or \$4.95) to sometimes process incorrectly. If you find some guest transactions are not processing try using whole dollar amounts (\$1.00, 4.00 etc.)

It would be a good idea at this point to run some sample charges through the system. You can refund those charges when you are done testing by using the PayPal merchant tools

in your PayPal Account Management Screen.

The PayPal software module is provided to process credit card transactions securely through PayPal utilizing PayPal's systems. CheckBox Systems is not affiliated with PayPal and does not offer support for managing PayPal merchant accounts.

Free Access

The Free Access System allows you to give your guests free access two different ways:

You can allow free access once per period, for example 15 minutes free every day, or 1 day free per week. This is great for a coffee shop or restaurant that wants to advertise free internet access but prevent guests from taking up a table for hours upon hours. The guests will still get your welcome screen when they first log on, and if they qualify for free access (if they have not had free access already in the predefined period) then they will be invited to try the access for free. Once the free period has expired the guest will be required to enter a valid ticket number or credit card (if you have those options enabled) and the free option will not be displayed for that guest.

If you wish to allow unrestricted free access to your customers, but still have the customers view your site welcome page, you can set the Trial Time and Trial Period time to be the same. For example; by setting the Trial Time and Trial Period both to 60 minutes, your clients will see the welcome page once every hour.

To enable Free Access, select **Access Controls** in the top menu and then **Free Access Setup** on drop down. If you have two Guest Networks make sure you select the Guest Network you want to create tickets for.

Administration | Access Controls | Customize Site | Network Setup | Mesh

Guest Network | Guest Network 2

Guest Wireless 2

Guest Network 2 Free Access Setup
Enabling this option will add another selection to your customer login page.

Access Time (when Button hit)		Trial Period (hide Button until)	
<input checked="" type="radio"/> Disabled (removes Free Button)		<input type="radio"/>	30 Minutes
<input type="radio"/> 15 minutes		<input type="radio"/>	1 Hour
<input type="radio"/> 30 minutes		<input type="radio"/>	8 Hours
<input type="radio"/> 60 minutes		<input type="radio"/>	1 Day
<input type="radio"/> 2 hours		<input type="radio"/>	3 Days
<input type="radio"/> 8 hours		<input type="radio"/>	1 Week
<input type="radio"/> 1 Day		<input checked="" type="radio"/>	30 days
<input type="radio"/> 3 Days			
<input type="radio"/> 1 Week			

Bandwidth Tier for Free Clients
 100% 50% 25%

Update

Select the Trial Time, how much time you want to allow them on the system, and then select the **Trial Period**, the amount of time that must elapse before they get a new free trial.

Press **Update**.

You may also customize the message your users see by selecting **Customize Site** on the top menu and **Free Access Text** on the drop down hand menu and editing the message.

Bandwidth Tiers - You can set the amount of bandwidth that Free Access users receive relative to others (ticketed, PayPal and Permanent users). Bandwidth Tiers allow you to provide a basic level of service free to customers while providing other users a higher level of service. If you set the *Bandwidth Tier for Free Clients* to 100%, then users pushing the Free Access button will get the same amount of bandwidth as all other users. You can also select 50% or 25% bandwidth level, providing Free Access users 25% or 50% of the bandwidth other users get, as determined your setting under the Client Usage Policy setting.

PermaCode

PermaCodes are special Access Codes you can define yourself. Usage is similar to ticket numbers, but these codes are reusable by multiple guests at the same time. You may change PermaCodes at anytime, and any guest devices previously activated will still remain activated until the time set for their code has expired. PermaCodes are great for group events or special promotions and can save the need for printing and distributing large amounts of tickets for one time events.

You can have two different codes defined, with different amounts of access time assigned to each code.

To set up PermaCodes click on the **Access Controls** button on the top level menu, and then select the **PermaCode** button on the drop down menu. If you have two Guest Networks make sure you select the Guest Network you want to create tickets for.

Create your code word(s) and select the amount of time each code word is valid for and press update.

Guests now need to simply type the code into the box on the welcome page, and they will be let on-line for the amount of time assigned to each code.

PermaCodes can consist of letters and numbers, but not spaces or special characters. To make it easier for your guests PermaCodes are not case sensitive.



Room Prompt Setup

No matter if you use Free Access, Tickets or PayPal you can also require users to list their room, site or boat slip location using Room Prompt.

Selecting Room Prompt adds a second box to the welcome page that the guest must enter information into and the information entered will be listed on the Active Clients Screen next to the user.

To enable the Room Prompt, go to **Customize Site** then **Room Prompt Setup**. Select **Enabled** to turn on room prompts, and optionally you can change the text that appears above the prompt box. If you have two Guest Networks make sure you select the Guest Network you want to create tickets for.



Once Room prompts are enabled, in addition to clicking Free access, entering a ticket or PermaCode, users will be required to enter something into

a second box, and the information that they enter will be listed in the Active Clients table.

Although your CheckBox can not validate any of the information provided by guests, the guests will be required to enter information, and if your staff sees invalid information listed under Active Clients (bogus room numbers or locations) they can simply disable the user.

check box
www.CheckBoxSystems.net

Administration | Access Controls | Customize Site | Network Setup | Mesh

Activated Hotspot clients

- * To Update a Client Remaining Time, click on the link in the **Ticket** column
- * To Update a Client Usage Policy, click on the link in the **Policy** column
- * Clients with a Policy highlighted in **yellow** are currently speed restricted
- * Clients with a Policy highlighted in **red** are currently blocked by abuse policy
- * Clients with a Policy highlighted in **pink** currently have P2P applications inhibited
- * Information in the **Traffic** column is in KiloBytes

Active Client Count: 2 Total Clients: 11

Ticket	Time Left	Room	Traffic	Ip	Mac	AP	Sig	Policy
vik	Permanent	127	912865	192.168.17.208	d8.31.cf.d0.54.ae	Front Desk	51	
front	Permanent	127	2126821	192.168.17.46	D0.67.E5.2D.2B.CB		0	
samphone6	Permanent		5460216	Disconnected	48.43.7C.C0.39.65		0	
pilgrimguest	13.2 hrs	126	150129	Disconnected	6C.29.95.BC.15.A1		0	
vick	Permanent		1431659	Disconnected	7C.C7.09.01.AA.61		0	
pilgrimguest	8.2 hrs	127	79589	Disconnected	E0.06.E6.28.B2.23		0	
benphone	Permanent		758994	Disconnected	38.CA.DA.41.82.C7		0	
Pilgrimguest	Permanent	104	955123	Disconnected	DC.9B.9C.13.DD.E7		0	
Benipad	Permanent		84012517	Disconnected	34.51.C9.0E.E4.E1		0	
beniphone	Permanent		5217453	Disconnected	8C.58.77.25.39.87		0	

Customizing your Welcome Screen

As you enable access methods the system will add the appropriate buttons and boxes to your welcome screen. You can customize the look of your welcome screen by uploading a picture or logo in .JPG format.



To upload an image click on **Customize Site** in the top menu and then select **Update Site Logo** on the drop down. If you have two Guest Networks make sure you select the Guest Network you want to create tickets for.

To change the message your guests see on the welcome page select **Customize Site** and then **Edit Logon Text** from the drop down menu. In this box you will see some html tags and then the default text. You can change the text to your own message, and if you are familiar with html you can customize fonts and colors with the html tags.

After your guests successfully login they will see a Welcome Message. If their ticket number is invalid they will see a Failed Login Message. These messages can also be customized by selecting the options in the drop down menu under **Customize Site**.

Tips for Uploading Graphics

CheckBox provides the option to upload a graphic for the welcome page and a different graphic that prints out on the tickets. Your guests will be accessing your CheckBox with devices that have different screen sizes. The graphic that you upload may look great on a desktop or laptop with a large screen, but be too large for a smartphone or tablet.

For best results these graphics should not be too large, either in pixels or file size. Pixels refers to the number of dots in a picture, these dots make up the picture itself. If a picture is described as 200 x 400 pixels, the picture is 200 dots wide by 400 dots tall. If the pixel count is too big then the picture may not fit on the page or it may push other elements of the page off the screen. It is important to remember that not all screens are the same size! It may look fine on your screen but may not fit on somebody else's screen!

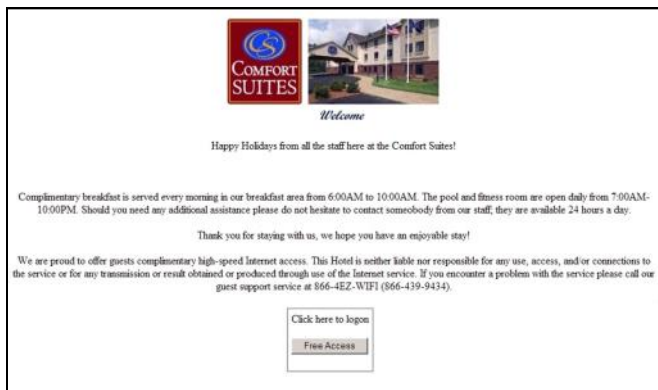
File size refers to the amount of data used to record the picture information. Too little data and the picture looks coarse, blurry or grainy. Too much information and the picture takes too much space in storage and takes too long to download.

So what is the "right" size? For the welcome screen logo generally an image that is no bigger than 320 pixels wide and 120 pixels tall works best. You can make them less wide or less tall. As for file size, somewhere between 20Kb and 60Kb is about right. CheckBox will not accept graphic larger than 100Kb in size

For the Welcome Screen CheckBox can accept files in .jpg, .bmp and .gif format. Most devices can display all three formats.

For the logo on your ticket, an image that is 110 pixels tall by 200 pixels wide is ideal, with a file size around 20 kb.

There are many tools you can use to resize your graphic, including Adobe Photoshop, and shareware tools such as Irfanview (<http://www.irfanview.com>).

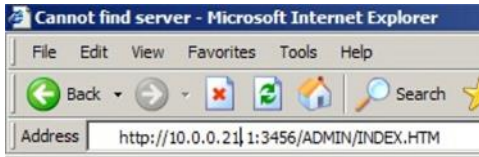


An example of a welcome screen

Accessing Your System from Outside The System But Inside Your Network

If you have your CheckBox connected to your company network you can access the System Administration Screens from any device on your network, even if these devices are not connected to the CheckBox system. In order to access your CheckBox from your office network or router you will need to know the WAN IP address assigned to the CheckBox by your network. If you have access to the System through a wireless client you can find this address in the System Administration Screen by clicking on **Network Setup**. In the section marked "Internet Connections" you will see the IP address listed immediately under eth3 for modems plugged into port 3, eth2 for modems plugged into port 2, and eth1 for modems plugged into port 1. This is the IP address assigned by your ISP or internal router to our system.

Once you have determined the IP address assigned to your CheckBox by your network you can access it by entering the IP address in the address bar of your web browser with **http://** in front of the address and **:3456/admin** after the address. For example, if the IP address assigned by your network to the CheckBox was 10.0.0.21 then you would enter **http://10.0.0.21:3456/admin**.



This will bring up a password login box just as it would if you were connected from inside the system, and all administrative functions are accessible.

Accessing Your System From Anywhere - An Easier Way

You can also access your system remotely using the Remote Access provided by the CheckBox Support Server. Accessing your system from the CheckBox Support Server does not require you to know or remember your IP address, and works no matter how often how often your IP address changes. This services is available at no charge for any system covered under the original warranty or an extended support agreement.

To access your CheckBox System remotely you will need your site ID number, user name and password. The site ID number is a four digit number assigned by CheckBox Support. Your user name is also assigned by CheckBox Support. Your remote access password is the same password that you use to access your CheckBox System when you are logging in directly to the CheckBox. If you do not have a site ID number and user name, please contact support@checkboxsystems.net to request one.

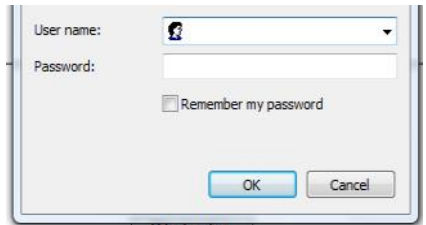
To Access your site via the Remote Access go to www.checkboxsystems.net and click on the **Login** on the top of the page.

In the Site Lookup box, enter your 4 digit site ID number then press **site lookup**.

A login box will pop up, requesting a username and password. (The actual box may look different depending upon your web browser). Enter your user name and password and press **OK**.



You will see a summary of your system status as last reported to



the CheckBox support system. You are not yet in your local CheckBox.

Hotspots

Location	Status	Version
Jims Place	0:00	2.108MCw
Ethans Room	0:00	2.108Sw
Peters House	0:00	2.108Sw
mesh 4426	120:23	2.108Sw

Typically your system status is updated every few hours. Any unit highlighted in green is working. Any item highlighted in yellow, pink or red is experiencing a malfunction. A unit highlighted in blue is currently undergoing a software update.

Click on the Name of your Site (the first item listed under **Location**) and you will be connected into your CheckBox System.

If you receive an error message after clicking on

the name of your site then your site is not accessible. Possible reasons for a site not being accessible include your CheckBox system being off-line (either the system is down or the internet connection to the system is not functioning) or the CheckBox system is behind a firewall.



Accessing Your System From The Internet

There are two ways to access your CheckBox System remotely through the internet. The first way is to log in through the CheckBox Support System at www.checkboxsystems.net. There you will find a link to log into your CheckBox system from anywhere. The second way is to log on directly to your CheckBox via the system's IP address.

In order to access your CheckBox System through the CheckBox Support web site you will need a site number and user name. Please contact support@CheckBoxSystems.net to obtain your Site number and user name. CheckBox Support will respond with your remote ID and instruction on how to use it to access your system.

You can also access the CheckBox remotely by IP address, if your CheckBox is connected to your cable or DSL modem through a router, you will need to enable static routing, DMZ, or virtual servers through your router. *Please refer to your router manufacturer's instructions for details on how to enable static routing or virtual servers. Due to variations between different router models CheckBox support can not assist with making changes to your office router.*

In order to access your CheckBox from the internet, you need to know the IP address assigned to you by your internet service provider. An IP address is a unique number much like a telephone number that identifies a unique machine on the internet. No two IP addresses can be the same on the internet. Most ISP's use dynamic IP addresses which may change periodically, in order to conserve the pool of available IP addresses. Some ISP's will provide a static (non-changing) IP address upon request, and may charge for this service.

To access CheckBox through the internet you will enter the IP address assigned by your ISP in the address bar of your web browser with **http://** in front of the address and **:3456/admin** after the address. For example, if the static IP address for the CheckBox was 66.23.124.9 then you would enter **http:// 66.23.124.9:3456/admin**

This will then bring up a password login box just it would if you were connected from inside the system, and all administrative functions are accessible.



Administering Client Devices

Under normal circumstances guests will get online, use their time and then automatically be logged off the system without any intervention from you or your staff. However there are options to manually adjust a guest's time remaining, delete a guest from the system, and manually authorize a guest device.

Activated Hotspot clients

- To Update a Client Remaining Time, click on the link in the Ticket column
- To Update a Client Usage Policy, click on the link in the Policy column
- Clients with a Policy highlighted in yellow are currently spaced restricted
- Clients with a Policy highlighted in red are currently blocked by abuse policy
- Information in the Traffic column is in KiloBytes

Ticket	Time Left	Traffic	IP	Mac	AP/SSID	Policy
101788	Permanent	183922	Disconnected	01:11:02:51:75:27	10000000 LAN	
Free	10.5 hrs	21708	Disconnected	00:20:21:58:07:01	10	
Free	10.5 hrs	12390	Disconnected	10:05:00:17:44:26	10	
Permanent	Permanent	205832	Disconnected	10:39:38:20:08:50	10000000 LAN	
By phone	Permanent	27258	Disconnected	00:7c:7a:7c:ea:f1	10000000 LAN	
Gateway	Permanent	11292600	Disconnected	74:00:43:1b:ed:c3	10000000 LAN	

Selecting **Administration** in the top menu and then **Active Clients** on the drop down menu will see a list of all clients currently ticketed. Client devices are listed by their MAC address and IP address. You can see their time remaining and by clicking on their ticket number or time

Update Client Status

Set or Update the remaining time for client 10000000:30:00:00:00

Set remaining client access time

Identify Synchronize

Time	Disable Client	Permanent Client
<input type="checkbox"/> Unchanged	<input type="checkbox"/> 30 minutes	<input type="checkbox"/> 60 minutes
<input type="checkbox"/> 2 hours	<input type="checkbox"/> 6 hours	<input type="checkbox"/> 24 hours
<input type="checkbox"/> 2 days	<input type="checkbox"/> 3 days	<input type="checkbox"/> 5 days
<input type="checkbox"/> 7 days	<input type="checkbox"/> 14 days	<input type="checkbox"/> 30 days
<input type="checkbox"/> 60 days	<input type="checkbox"/> 90 days	<input type="checkbox"/> 120 days
<input type="checkbox"/> 185 days	<input type="checkbox"/> 270 days	<input type="checkbox"/> 1 year

left you can manually add time or delete the client from the system. You can also rename the ticket to identify users or devices.

The third column for each client lists how much data traffic they have put through the system. This information is in kilobytes, and is counted from the time they activate their ticket.

The last two columns list the access point that the client is connected to and the strength of the signal that the system is receiving from the client. In most cases, signals greater than 15 should result in a good connection. These signals are 5 minute averages, and it is normal for these to fluctuate.

By selecting **Administration** in the top menu and then **Offline Clients** on the drop down menu you will see a list of all clients that have been authorized on the system and still have time remaining but are currently not online. These devices can just rejoin the network without going through the welcome screen until their time remaining expires.

By selecting **Administration** in the top menu and then **Clients not Authorized** on the drop down menu you will see a list of all devices that have found the network but are currently not allowed to go onto the Internet. It is not unusual to see several devices in this list, as most WiFi devices will automatically search for available networks.

Client List									
Clients not authorized: 13									
Ticket#	Room	Network	DhcpName	IP	Mac	AP	Signal		Size
None	Guest			192.168.17.218	60:3e:c5:89:3e:71	Both House (AXI3)	23		
None	Guest	amazon	52b-052648	192.168.17.208	6e:54:00:00:80:2d	AV14 Office West	25		
None	Guest	80201413708P	8P 78	192.168.17.191	54:13:79:0f:0f:79	Site 9 (AXI2)	34		
None	Guest			192.168.17.188	3e:80:a5:02:42:b0	Both House (AXI3)	17		
None	Guest	James-Phone		192.168.17.181	68:ca:03:28:ca:03	Site 9 (AXI2)	15		
None	Guest			192.168.17.174	68:0e:a0:13:2a:05	Both House (AXI3)	45		
None	Guest			192.168.17.171	c0:02:01:8e:08:ea	Site 9 (AXI2)	36		
None	Guest	NOVO		192.168.17.147	fc:1c:0a:0d:65:21	AV14 Office East	35		
None	Guest	amazon	133809509	192.168.17.130	fc:a6:67:c1:0b:c1	AV14 Office West	28		
None	Guest	Apple-TV		192.168.17.128	50:32:37:96:0e:01	Site 9 (AXI2)	42		
None	Guest	8P0201396031F		192.168.17.101	64:00:0e:78:9e:11	AV14 Office West	13		
None	Guest	3_GambCOSTV		192.168.17.100	64:0a:80:76:20	AC5Site 3E (AXI2)	23		
None	Guest			192.168.17.44	40:77:14:47:1e:01	Both House (AXI3)	5		

Manually Authorizing Devices

If you want to manually authorize a device for Internet access (for example a device that does not have a web browser like a credit card terminal or a game console) you can authorize it by going to **Clients not authorized** and then selecting that client from the list, clicking in it's ticket column (which will in dictate a ticket of none) and selecting an amount of time for it to be allowed to access the Internet.

If there are multiple devices in the list you may be able to identify the device you want by it's name, MAC address or IP address. However if you can not determine which is the item you want to authorize try these steps:

1. Power off the device you want to authorize.
2. Press the Clear List button on the Clients not Authorized screen.
3. Power up the device and make sure it connects to the CheckBox WiFi.
4. Refresh the Clients not Authorized screen and that device should not be the only device shown.

Labeling Users

For easy identification, you can change the label name for a user in the system. For example, if you have several computers in the office that are permanent clients, and some users that are employees with long term tickets, you can label them by their name.

To change the label of a user, simply click on their ticket number in the ticket column (If they used PayPal, Free Access or if you enabled them manually click on the PayPal transaction number, "Free", or "Manual" label in the ticket column). Enter the new label or name in the box marked "Identity" and press **update**. When entering a name or label, do not use spaces or special characters.

Client Usage Policy

With the Client Usage Policy function, you can set how much network bandwidth a guest can use. While most guests will never reach their bandwidth limits some guests may attempt to use the system for downloading or streaming large files, including video. This can negatively impact all of your guests. If you use satellite Internet or if your ISP has a daily or monthly download limit, one guest could consume your entire data allotment.

The last column in the Activated System Clients table shows the Client Usage Policy status of each individual active user. If the policy box is green, the user has full access to available bandwidth. If the policy box is yellow, the user is approaching the bandwidth limit set by the system and their speed has been reduced. The reduced speed will be displayed in the yellow box.

Ticket	Time Left	Traffic	IP	Mac	AP	Policy
331-Admin	11:17 (0)	111320 (100%)	10.168.17.203	84:41:7A:28:3E:35	815-127a	Green
330-Admin	11:17 (0)	138414 (100%)	10.168.17.133	10:40:15:20:07:14	102-4313	Green
329-Admin	11:17 (0)	2213 (4)	10.168.17.104	84:41:7A:28:3E:35	815-127a	Green
328-Admin	11:17 (0)	344528 (100%)	10.168.17.104	10C:7A:32:40:84:20	102-4313	Yellow
327-Admin	20:11 (0)	102024 (100%)	10.168.17.133	40:12:03:40:04:01	815-127a	Yellow
326-Admin	11:17 (0)	102024 (100%)	10.168.17.133	84:41:7A:28:3E:35	815-127a	Yellow
325-Admin	11:17 (0)	102024 (100%)	10.168.17.133	84:41:7A:28:3E:35	815-127a	Yellow
324-Admin	11:17 (0)	102024 (100%)	10.168.17.133	84:41:7A:28:3E:35	815-127a	Yellow
323-Admin	11:17 (0)	102024 (100%)	10.168.17.133	84:41:7A:28:3E:35	815-127a	Yellow
322-Admin	11:17 (0)	102024 (100%)	10.168.17.133	84:41:7A:28:3E:35	815-127a	Yellow
321-Admin	11:17 (0)	102024 (100%)	10.168.17.133	84:41:7A:28:3E:35	815-127a	Yellow
320-Admin	11:17 (0)	102024 (100%)	10.168.17.133	84:41:7A:28:3E:35	815-127a	Yellow
319-Admin	11:17 (0)	102024 (100%)	10.168.17.133	84:41:7A:28:3E:35	815-127a	Yellow
318-Admin	11:17 (0)	102024 (100%)	10.168.17.133	84:41:7A:28:3E:35	815-127a	Yellow
317-Admin	11:17 (0)	102024 (100%)	10.168.17.133	84:41:7A:28:3E:35	815-127a	Yellow
316-Admin	11:17 (0)	102024 (100%)	10.168.17.133	84:41:7A:28:3E:35	815-127a	Yellow
315-Admin	11:17 (0)	102024 (100%)	10.168.17.133	84:41:7A:28:3E:35	815-127a	Yellow
314-Admin	11:17 (0)	102024 (100%)	10.168.17.133	84:41:7A:28:3E:35	815-127a	Yellow
313-Admin	11:17 (0)	102024 (100%)	10.168.17.133	84:41:7A:28:3E:35	815-127a	Yellow
312-Admin	11:17 (0)	102024 (100%)	10.168.17.133	84:41:7A:28:3E:35	815-127a	Yellow
311-Admin	11:17 (0)	102024 (100%)	10.168.17.133	84:41:7A:28:3E:35	815-127a	Yellow
310-Admin	11:17 (0)	102024 (100%)	10.168.17.133	84:41:7A:28:3E:35	815-127a	Yellow
309-Admin	11:17 (0)	102024 (100%)	10.168.17.133	84:41:7A:28:3E:35	815-127a	Yellow
308-Admin	11:17 (0)	102024 (100%)	10.168.17.133	84:41:7A:28:3E:35	815-127a	Yellow
307-Admin	11:17 (0)	102024 (100%)	10.168.17.133	84:41:7A:28:3E:35	815-127a	Yellow
306-Admin	11:17 (0)	102024 (100%)	10.168.17.133	84:41:7A:28:3E:35	815-127a	Yellow
305-Admin	11:17 (0)	102024 (100%)	10.168.17.133	84:41:7A:28:3E:35	815-127a	Yellow
304-Admin	11:17 (0)	102024 (100%)	10.168.17.133	84:41:7A:28:3E:35	815-127a	Yellow
303-Admin	11:17 (0)	102024 (100%)	10.168.17.133	84:41:7A:28:3E:35	815-127a	Yellow
302-Admin	11:17 (0)	102024 (100%)	10.168.17.133	84:41:7A:28:3E:35	815-127a	Yellow
301-Admin	11:17 (0)	102024 (100%)	10.168.17.133	84:41:7A:28:3E:35	815-127a	Yellow
300-Admin	11:17 (0)	102024 (100%)	10.168.17.133	84:41:7A:28:3E:35	815-127a	Yellow

Usage status for:
 Identity/Code: Free
 Client Adapter: 0c:30:21:56:87:1a
 Recent download: 0% of Policy
 Recent upload: 0% of Policy
 Bandwidth Limiting: None
 Active Connections: Disconnected
 Reset Usage Counters
 Automatically Managed
 Unrestricted Usage

You can allow exceptions to the usage policy for certain users to allow them unrestricted bandwidth - this is handy for office computers and devices. To set a device for unrestricted bandwidth click on the green or yellow policy box and a screen will open that allows you to select unrestricted usage. You only need to set unrestricted usage once per ticket, and the user will remain unrestricted until their ticket expires. If this is for an office computer consider setting a Permanent ticket by clicking on the ticket number and setting it to Permanent.

Setting the Client Usage Policy

By default the Client Usage Policy is not turned on - the system will allow each guest to download as much data as possible on a first come first served basis, and that may cause some users to be negatively impacted by other more intensive users.

Network Bandwidth Management Settings

Guest Network
 Bandwidth Management
 Bandwidth Management
 Min Max
 Customized Bandwidth Limits

Admin Network
 Bandwidth Management
 Customized Bandwidth Limits
 MB per hour per client

To turn on the Client Usage Policy go to **Administration** and then **Client Usage Policy**. You will see the option to turn on the Client Usage Policy for each active network. To turn on the Client usage policy check the box next to Bandwidth Management.

Once Bandwidth Management has been selected a slider will appear to allow you to set the amount of bandwidth given from Min to Max, or you can set customized bandwidth amounts by checking the Customized Bandwidth Limits box and entering a number next to MB per hour per Client.

Using the Min to Max sliders sets a *relative* limit; the system limits users based on the total bandwidth coming in from your ISP and the total number of active users relative to the other networks. This allows users on a network set to Max several multiples of the bandwidth given to users on a network set to Min. The actual amount of data provided each user will vary depending on how busy the system is and how much bandwidth the ISP is providing.

Users on a network set to a customized Bandwidth Limit will be allowed up to that much data per hour.

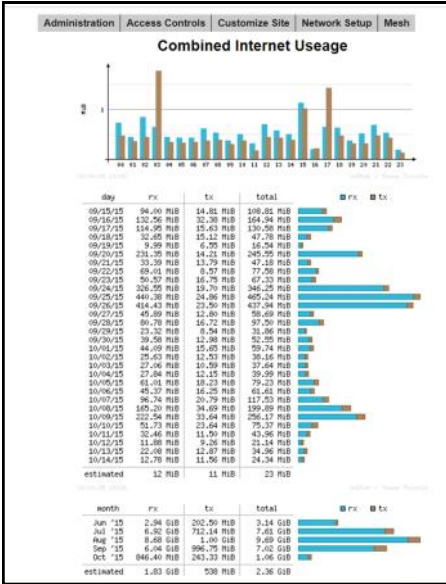
Users are never fully cut off, instead as they approach the limit the system will begin to progressively throttle their speed to prevent them from going over the limit. Some applications (for example video streaming) will stop if the connection gets too slow. Users that are throttled are highlighted in Yellow in the Active Clients display. A few minutes after the user backs off on their consumption the system will begin to automatically reduce the throttling.

Network Statistics

You can track total data amounts consumed by your CheckBox System under Network Setup -> Statistics .

Here you can track both inbound and outbound data usage for your system for the past 30 days, and also see historical usage over the past twelve months.

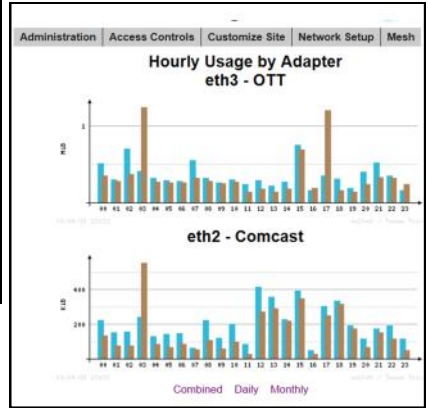
Data highlighted in blue and marked **rx** is data that was downloaded from the Internet. Data highlighted in brown and marked **tx** is data that was uploaded to the Internet.



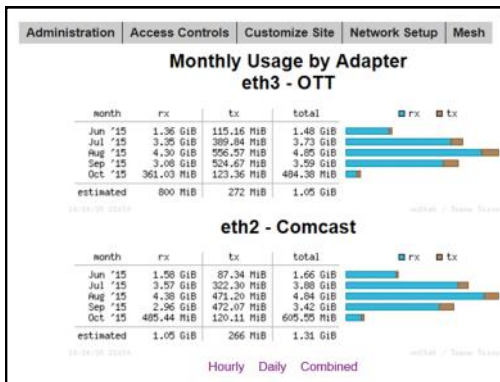
how your different Internet connections perform throughout the day.

By selecting the Hourly link at the bottom of the page you can view the total system usage for all of your modem connections combined.

You can also view usage for each Internet connection ("Adapter") on an hourly basis. This can help you see



By selecting the Monthly link at the bottom of the page you can see a summary of the last thirty days of total system data usage.



Signal Strength, Power Levels & Antennas

Communication between your guest's devices and the CheckBox is a two-way transaction, not a one-way transaction like a radio or TV broadcast is. For a successful connection not only does a signal need to get from the CheckBox to the user's device, but they need to get a signal back to the CheckBox. Portable WiFi devices are not all created equal and few have an external antenna. It is not unusual for a guest to "see" a signal of a few bars, or "good" but have a difficult time maintaining a connection. This is usually a case of the WiFi device seeing the signal from the CheckBox but the WiFi device does not have the strength to call back to the CheckBox.

Speaking of signals - signal strength displays are an approximation of the signal strength averaged over a period of time and do not take into account signal noise, the interference inherent in every radio transmission. Users may see a strong signal displayed, but due to noise and interference still not be able to establish a connection. The opposite can also occur; sometimes users will see a weak signal and still have a solid connection. Regardless of what the signal strength display reads the bottom line for the user is always this: Can they connect and is the connection fast enough?

One way to improve the range of the signal is by adding a long range antenna to your access point (the access point in this case is the CheckBox system). Long range antennas can sometimes help and sometimes can make the situation worse. While a standard antenna sends out radio waves equally in all directions like a balloon, long range antennas achieve greater range by changing the shape of the signal, flattening out the balloon into more of a donut, sending less of the signal straight up into the sky and more out towards the edges. These antennas can generally extend the usable range from 10% to 30%. However they can introduce two new problems; the case of the WiFi device seeing the CheckBox but the CheckBox not being able to WiFi device mentioned above, or a case where the "donut" is so flat that it shoots over the heads of the users.

A second type of antenna re-shapes the signal even more, sending it in a pinpoint beam. These antennas can increase range ten-fold or more, however if the user is not in the direct path of the signal they will not be able to see it. Even if they are in the direct path if they are usually not able to send a signal back the full distance and they will not be able to establish a connection. These high-gain point-to-point antennas are best used in pairs, one on each end of the path, and while not practical for guest WiFi devices they are good for connecting buildings in remote locations or repeaters in areas not contiguous to other units.

Another way to improve range is to increase transmit power. Since we do not have control over the quality of the user's devices we cannot affect their transmit power, but we could boost ours. CheckBox already uses the maximum legal power for unlicensed operation in the frequencies (channels) it occupies. There are WiFi "amplifiers" that can boost power, but these are not legal. Unlicensed operation at higher power can result in the property owner being fined.

When you boost the transmit power on one end of the connection but not the other you also run into the problem of one side being able to see the signal from the other side but not being able to send a signal back.

Since consumer WiFi devices do not have good antennas and do not generally use the maximum output power they really benefit from having a high density signal. The best way to have a high density signal is by using multiple access points.

Determining the proper number of access points requires taking into consideration several factors:

How much area do you need to cover? What are the surroundings? Are there walls or open spaces? Is the building made of wood, rebar reinforced concrete, or steel? Is there any

interference in the area?

On a flat open field with no interference a signal can travel up to 1000'. When we start adding walls, other devices and users, that distance will begin to shrink.

For example, a hotel with two wings each 200 feet long and three floors per wing, made of rebar reinforced concrete, might need 16 or more meshing access points to provide solid coverage. Another hotel, constructed of wood but with similar dimensions, may only need 8 meshing access points to provide coverage.

Another example would be a campground that is on an open flat field. To provide complete coverage however you need to penetrate the aluminum skin of the RVs coaches which might require meshing access points spaced every 200 feet, so that no RV is more than 100 feet from a unit.

If that hotel happens to be at the end of an airport runway with a radar system nearby or that campground has a cell tower in the middle of the property then interference from those devices may require additional units to overcome the interference.



Mesh Repeaters & Mesh Node Status Display

CheckBox meshing access points are self-configuring. As long as they can receive a signal from one of their peers or the controller they will establish a connection among themselves and actively determine the best route back to the controller unit.


These meshing access points can run as wired access points, connecting back to your CheckBox Controller with a wired connections, or as wireless meshing access points, connecting automatically back to the controller wirelessly. When run in a wireless mesh configuration the access points do need to be connected to a nearby power source. Performance in wireless meshing mode will depend upon the signal strength of the wireless signal received from the system as well as noise and wireless interference. Generally overall throughput will not be as good as if the access points were wired; wireless meshing works best in applications where running a connection back to the controller is not possible.



IMPORTANT: The first time a mesh repeater is added to the network it will show up highlighted in **blue** in the mesh status display. Until you click on this repeater to accept it into the system it can not service clients or pass traffic. You must click on blue units to allow them to join the system. This only needs to be done once, and after a unit has joined the system it will be remembered by the system, even after power failures or prolonged storage. Labeling the repeaters here makes it easier to remember where they are located.

Once your Mesh Repeaters are in place you can monitor their status by selecting **Mesh** on the top menu. You can check the status of your repeaters by clicking on the Mesh button on the top menu.

The first column identifies the repeater unit by it's MAC address, the electronic serial number used to identify network devices.



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Administration
Access Controls
Customize Site
Network Setup
Mesh

Mesh Node Status

Unit	Location	Connection	IP	Signal	Link	Chan	Clients
000024D10298	Master		192.168.17.1		1	6	0
68725105E725	BATH HOUSE	STORE	192.168.17.86	21	42	6	0
68725105E66A	C10	STORE	192.168.17.200	50	81	6	0
68725105E72E	C14	PAVILION	192.168.17.95	39	74	6	0
68725105E7D5	D Area	C14	192.168.17.41	36	65	6	1
68725105E64E	D-E Area	D Area	192.168.17.164	28	58	6	0
68725105E60D	E11	D Area	192.168.17.103	33	62	6	0

The second column shows the units name or location; you can change this label by clicking in this box and entering a name or location. By default it is a row of "*****" You also will click on the row of "*****" the first time a repeater is added to a system to allow it into the mesh.

The third column shows the name or location of the unit from which this unit gets its connection, this may be the CheckBox controller or another repeater if the units have daisy chained themselves. Mesh repeaters are constantly evaluating their connections and "talking" to other repeaters and the controller to determine the best route back to the controller and the internet. You may see this change occasionally as the system reconfigures itself to deal with changing conditions.

The fourth column shows the IP (network) address of the unit.

The fifth column shows the current signal strength of this unit to its upstream connection. The signal strength is a 5 minute average, and it is normal for this to fluctuate. Any unit with a low signal strength will be highlighted in Yellow or Red.

Units highlighted in yellow will have slower connections that will be unreliable. Units in Red are not able to support traffic or users as they have a very low or no connection (often as the result of issues with power or wiring at the unit). The signal is only displayed for access points running in wireless mode (access points without a wired Ethernet connection to the CheckBox), any wired units will display "wired" in this column.

The sixth column shows the Link speed, the maximum speed data can travel over this link. Other factors may cause actual throughput to be lower.

The seventh column indicates what channel the access point is operating on. Systems with multiple wired access points can change the channel of each wired access point by clicking on the unit name and adjusting the preferred channel accordingly.

The last column shows how many clients are using this access point.



And now a moment of Zen...
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Final Installation Checklist

After you have completed installing your system use this checklist to make sure everything is ready for your guests.

Physical Installation - CheckBox

- CheckBox controller unit is connected to power.
- CheckBox controller unit is connected to internet connection.
- Network connection cables are not stapled to walls or cable tied to AC wiring or power lines.

Physical Installation - Mesh Repeaters

- Access points are connected to power.
- [Outdoor units only] Access points are mounted at least 20 feet off of the ground.
- Access points are mounted at least 4 feet away from other antennas.
- Serial number of each repeater is noted for labeling by location in mesh display.

System Setup - CheckBox controller

- Set administrative password.
- Accept access points into network on the Mesh page.
- Upload your graphic for Welcome Screen and Tickets.
- Set up your Welcome Message.
- Change SSID in Network Setup.
- Print out user tickets [for systems using tickets].
- Set up Free Access [for systems using free access].
- Set up PayPal credit card system [for systems using PayPal].

CheckBox S/A/F/E - Survey and Feedback Engine

CheckBox includes the S/A/F/E Survey and Feedback Engine, a system to provide direct and ongoing communications with your guests to increase guest satisfaction.

With CheckBox S/A/F/E - The CheckBox Survey and Feedback Engine - your WiFi does more than just connect your guests to the Internet. S/A/F/E lets you reach your guests - and your guests reach you - instantly and easily via any connected device to increase customer service and guest satisfaction.

With the CheckBox Survey and Feedback Engine as soon as your guests log onto your WiFi your CheckBox automatically sends a welcome message via email or text. This welcome message includes any information that you want your guests to know and they can reply to the message to ask you or your staff questions, make requests or to let you know about any issues that need to be addressed.

The CheckBox Survey and Feedback Engine routes messages between you and your guests to any desktop or portable devices you designate, allowing easy and quick follow up - a great way to save time while increasing guest satisfaction and engagement.

Guests can get their questions answered quickly without trekking to the office or hunting for a staff member, and staff can handle guests issues quicker with less interruption of other tasks.

CheckBox S/A/F/E is available to all CheckBox Customers at no additional cost.

CheckBox S/A/F/E is another feature included at no additional charge to all CheckBox customers on a current support plan or under their original warranty.

The conversation doesn't stop when your guests disconnect from your WiFi or leave your property.

CheckBox detects when your guest has left the property, and after a predetermined interval can automatically send a follow up message you design thanking them for their stay and inviting them back. With the built in survey tools you can send a follow up survey to gather feedback and send follow up messages to invite them to return.



Setting up CheckBox S/A/F/E

To set up your S/A/F/E you will need to have your Remote Site Login ID number, your username and password. If you do not have these or have forgotten your them please contact Support@CheckBoxSystems.net to set these up.

Login to your CheckBox management screens and navigate to Customize Site then Survey and Feedback Setup.



In the area labelled Entry Field for Survey Contact Info click on the button marked Enabled to turn on the S/A/F/E feature.

The CheckBox Welcome page will now have a field where guests can enter either their email address or mobile phone number for texting. You can make it either optional or mandatory to enter the address or mobile number.

In the field header prompt you can customize the message the guest sees when asked for their email or mobile number.



Your guest log in screen will have this area added where your guest then share their email address or mobile number.

Your actual login screen will look different depending upon the graphics you have added and other options you have enabled.



Next we need to setup the welcome messages and optionally the surveys.

Click on the Setup Survey Parameters button.



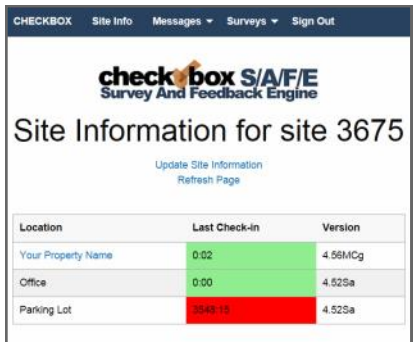
Login here with your Site number, Username and password.

This portal can also be used to remotely log in from anywhere to manage both your CheckBox Guest WiFi and your S/A/F/E Systems and can be reached directly by going to

<https://portal.checkboxsystems.net>



Once logged in you will first see a summary of your system status. You will see the name of your property, the names of your access points, and the status of your system. Any device highlighted in red is having issues and is not online.



Navigate to Surveys and then Survey and Message Settings .

Here you will put in an address where messages from guests will be sent to. This should be an address that is monitored by staff or management to provide timely responses to guest issues.

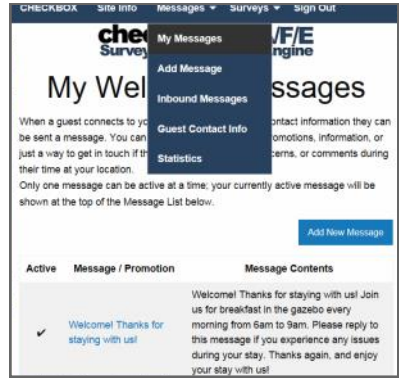
The Send Survey After drop down setting is where you set a delay for when the system no longer detects the guest on property after which time a survey can be sent to the guest for follow up.



Next navigate to Messages and then My Messages. Here you will set up the welcome message that is emailed or texted to every user.

Here you can add new messages to be sent and see a summary of all messages that you have already created and are available to choose from.

Click on the Add New Message button.



On this page you will create the welcome messages emailed or texted to your guests when the first connect to your CheckBox.

You can create multiple messages and save them, but only one message at a time can be active.

Since guests have the option of supplying an email address or a text address we have to format the message two different ways to accommodate the different formatting of the two types of messages we may be sending.



The Welcome Message Title / Email Subject box is the subject line of emails sent.

The Text Message Content box is where you enter the text message that will be sent. Text messages are limited to 140 characters total, including spaces, so messages must be short and sweet.

The Email Message Content is where you enter the message sent to email users. You have more room here and can add more information as appropriate.

To the right of the Welcome Message Title line is a box you can toggle to make the message active or not. You can create and save multiple messages, however only one can be active at a time. You can also choose to have none active and no message sent.

At this point your welcome message has been set up, and your guests can reply to your welcome message to ask questions or notify you of issues, and you can reply to those message - providing a convenient two-way messaging platform for you and your guests.

Receiving & Responding to Messages w/ S/A/F/E

If a guest replies to their welcome message that reply will be sent to the management email address you entered in the Survey & Message Settings screen and will be forwarded to your email inbox. Regardless of whether or not the guest is using texting or email, all messages will be automatically consolidated and sent to your email box.

From your email box you can reply to guest emails directly.

How late is the fitness center open?



If the message from the guest originated as a text messaging there will be a link in your email to click on to reply to the guest message. This link will take you directly to the guest's message in the CheckBox Portal.

You can also read and reply to text messages from your portal page. The most recent messages will be listed at the top of the list, and just click respond to reply.

Is there any pizza delivery nearby?

The screenshot shows the CheckBox S/A/F/E Survey And Feedback Engine interface. At the top, there is a navigation bar with 'Site Info', 'Messages', 'Surveys', and 'Sign Out'. Below this is the logo for 'check box S/A/F/E Survey And Feedback Engine'. The main heading is 'SMS Messages Received'. Below the heading is a table with the following columns: Message From, Received, Mobile Registered in, Message, Last Visited, and Action.

Message From	Received	Mobile Registered in	Message	Last Visited	Action
3	11 Apr at 04:24	CA US	Is there any pizza delivery nearby?	8 Apr at 04:20 - Sunbeam Lake RV Resort x86	Respond
2	11 Mar at 16:03	BC CA	How late is the fitness center open?	10 Mar at 15:38 - Sunbeam Lake RV Resort x86	Respond
6	8 Mar at 03:08	CA US	What time does the fitness center open?	7 Mar at 22:12 - Sunbeam Lake RV Resort x86	Respond
9	7 Mar at 17:56	BC CA	How late is the fitness center open?	7 Mar at 17:51 - Sunbeam Lake RV Resort x86	Respond
1	3 Feb at 22:32	CA US	Thank you for your message.	2 Feb at 20:59 - Sunbeam Lake RV Resort x86	Respond

Creating Guest Surveys with S/A/F/E

You can use S/A/F/E to automatically send out a survey to your guests after they have left your property. CheckBox will monitor the guest's connection, and when they have disconnected from the network after a waiting pre-determined interval the survey can be automatically sent. This interval is set under Surveys -> Survey & Message Settings.

After the system has determined the guest has been off of the network for the predetermined time an email or text message will be sent inviting the guest to click a link to take your survey.



To create a survey navigate to Surveys -> Add Survey.

You can create and save multiple surveys, but only one survey can be active at a time.

Give your survey a title and create a message to go above your survey.

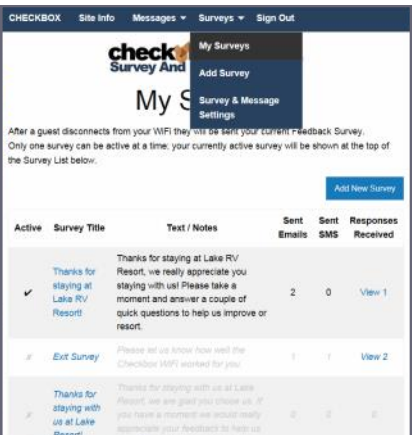
Survey questions can either be formatted so the responses are either a rating (1 through 5) or a comment field. Create your survey questions. Here you can also choose if this survey is currently active or not.

After you save the survey you can return to edit the questions if needed.



To see a list of the surveys you have created and to review the responses you have received navigate to Surveys -> My Surveys.

There you will see a list of all of your surveys and which one is active, and you can view the responses received by clicking on the View links on the right hand side.

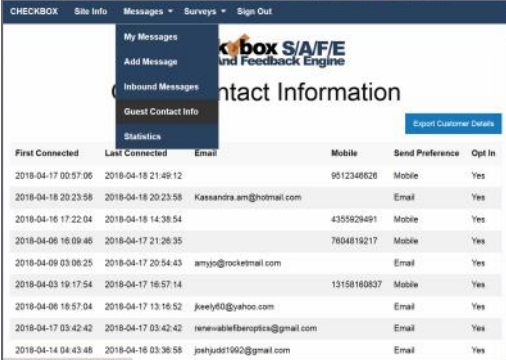


S/A/F/E Guest Contact Information

You can view and download the contact information for your guest by going to Messages -> Guest Contact Info.

Here you find a list of when the guest first and last connected to your CheckBox and their email or mobile number.

You can download this information to use in a spreadsheet or marketing program by clicking on the Export Customer Details button. The information will be downloaded as a .CSV file.



First Connected	Last Connected	Email	Mobile	Send Preference	Opt In
2018-04-17 00:57:06	2018-04-18 21:49:12		9512346626	Mobile	Yes
2018-04-18 20:23:58	2018-04-18 20:23:58	Kassandra.am@hotmail.com		Email	Yes
2018-04-16 17:22:04	2018-04-18 14:38:54		4355829491	Mobile	Yes
2018-04-06 16:09:46	2018-04-17 21:26:35		7604819217	Mobile	Yes
2018-04-09 03:06:25	2018-04-17 20:54:43	amyjo@rocketmail.com		Email	Yes
2018-04-03 19:17:54	2018-04-17 16:57:14		13158160837	Mobile	Yes
2018-04-06 16:57:04	2018-04-17 13:16:52	jweely6@yahoo.com		Email	Yes
2018-04-17 03:42:42	2018-04-17 03:42:42	rene@ablefiberoptics@gmail.com		Email	Yes
2018-04-14 04:43:48	2018-04-16 03:36:58	jshjudd1992@gmail.com		Email	Yes

System Alerts

You can receive an email or text message if your CheckBox controller unit, one of your repeaters, or your internet connection goes off-line. These System Alerts are issued by the CheckBox Support Server, which monitors your system. This monitoring service is included in the first year warranty that comes with every CheckBox System, and is also included in the Extended Warranty Program.



Before you can set up alerts you will need a Remote Site log-in. If you do not have a remote site log-in you can request one from CheckBox by sending an email to support@checkboxsystems.net.

To set up alerts for your CheckBox;

1. Log in to the CheckBox support portal.
2. After logging into the support site click on "Site Info" and then the "Update Site Information" link in the middle of the screen.
3. Set your Alerts to either Aggressive, Normal or Relaxed (or you can disable alerts).
4. Enter the email address you want the alerts sent to.
5. Click the "Update Site Information" button.

The first time you activate the alerts for your CheckBox system, the support system will need to download some configuration updates to your CheckBox units, which may take up to 4 hours to complete.

Setting alerts to Aggressive will generate an alert if a CheckBox mesh node or a controller unit is late for any of it's scheduled check in cycles. This may cause an excessive amount of alerts to be generated if your system is on a slow or unreliable Internet connection (such as satellite or older DSL). It is not uncommon for a unit to be late or to miss a check in cycle due to network congestion or high traffic.

Setting alerts to Normal will generate an alert if a CheckBox mesh node or a controller unit two check in cycles. This is the setting most users will want.

Setting alerts to Relaxed will generate an email if a CheckBox mesh node or a controller unit fails to check in with the support server after four scheduled check in cycles. This setting is suitable for users with frequent power issues or issues with their internet service provider.

Many cell phone providers allow you to receive emails as text messages. If you wish to have the alerts sent to your cell phone as a text message, check with your cell phone provider as to the address format to use (often it looks something like yourphonenumber@cellphoneprovider.net) Some cell phone providers charge for incoming text messages. You may be charged by your cell phone provider to receive these messages.

Location	Last Check-in	Version
Live Demo	0:03	4.56MCG
Office	0:01	4.52Sa
Parking Lot	0:00	4.52Sa

Site Name: LIVE DEMO User Name: EVAL

Password: Email Alert Frequency: Disabled Aggressive/Normal Relaxed

Alert Email Address:

Included and Optional Services

Included Warranty and Extended Warranty Support

Your CheckBox System includes a one year warranty from the date of purchase. This warranty includes:

- A hardware warranty with advanced exchange replacement
- Phone and email support for property management and staff
- Automatic software updates
- Access to the remote management portal
- Automatic email/text alerts of system outages
- S/A/F/E - the Survey and Feedback system

This warranty can be extended and renewed each year to provide ongoing coverage. Approximately two months before the end of your initial warranty and support period you will receive information on extending your warranty and support.

Guest Support

- ✓ 24/7 live support for guests and end users
- ✓ Dedicated toll free number
- ✓ Tracking of support incidents and escalation
- ✓ Can be used seasonally - no long term contract required.

Guest support is provided 24/7 by professional support staff at a dedicated support number. Support staff are available to assist guests connecting to the wireless service, configuring their wireless settings and logging on. Support staff have instant, real-time access to systems, can perform diagnostics, and when appropriate restart networks and alert property owners to issues, as well as escalating critical system issues to advanced technical support.

Guest support is priced on a per-room/per-campsite/per-boat-slip basis per month. *For more information or to order these services please contact CheckBox Support or your reseller.*

Support Options	Hardware Warranty & Standard Support	Guest Support
Support for Staff & Management	Yes	Yes
Support for Guests	No	Yes
Hours of Availability (Eastern)	9am to 7pm, Eastern Mon—Fri	24/7/365
Cost	First year included free. Can be extended after the first year, annual fee applies, varies by system	\$1.50 per guest unit (requires Hardware Warranty & Support if not under original warranty)

Your Suggestions are Welcome

Many of the added features, improvements and refinements have been made at the suggestion of our users. We absolutely welcome your feedback and suggestions.

Warranties and Service

We have worked hard to design the best possible system for you and your guests. We want you be completely satisfied with your system. If you are not completely satisfied please let us know and we will try to make it right. If you are still not satisfied you may return the system in it's original condition within 30 days from the date of purchase for a full refund, less shipping and installation.

This system includes a one year warranty from the date of purchase and one year of standard support. This warranty covers repair or replacement of the components of the system as we determine necessary. The warranty does not cover damage due to improper installation, use of unauthorized accessories (including, but not limited to external antennas and power amplifiers) lightning, vandalism or physical abuse. Standard support is for use by the site management and employees and is provided via telephone or email at our option delivered during standard business hours. Standard support does not include guest support, on-site visits, after hours calls, or assistance with other network issues and items not related to this system. In no event shall CheckBox Systems be responsible for consequential damages due to the failure of this system or any of it's components. We reserve the right to terminate support in the unlikely event of excessive, or abusive calls. Under no circumstances will CheckBox Systems LLC liabilities exceed the original purchase price of the product. This is a network access device, and the end user is ultimately responsible for network and data security.

System builds 4.98 & higher

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