

IPBRICK - 6.0 Version
Installation Manual



IPBRICK SA

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Contents

1	Purpose of this document	5
2	Before Getting Started	7
3	IPBRICK installation	9
3.1	Requirements	9
3.2	Installation Procedure	9
3.3	Installer Boot menu	10
3.3.1	Install	10
3.3.2	Upgrade/ReInstall	10
3.3.3	Advanced Install	11
3.3.4	Create Bootable Pendrive	15
3.3.5	Manual	17
3.4	Regular Installation	17
3.4.1	Graphical mode	17
3.4.2	Text Mode	18
3.4.3	Auto Detection of Previous Installations	20
3.5	Error Messages	21
3.6	Customized Installation	22
3.6.1	Custom Partitioning	22
3.6.2	Software RAID installation	22
3.6.3	RAID by hardware - LSI Megaraid Driver Installation	23
4	Managing the IPBRICK	25
4.1	Network configuration	25
4.2	Connecting to IPBRICK	25
4.2.1	Direct connection	26
4.2.2	Connecting through a hub or a switch	28
4.2.3	Network Connectivity Test	29
4.3	Logins and Passwords	30
4.3.1	IPBRICK - Web Interface (GUI)	30
4.3.2	IPBRICK - Console	30
4.3.3	IPBRICK - Email copy	30
4.3.4	IPBRICK - IPBRICK.SEC AntiSpam	31
4.3.5	IPBRICK - Contacts	31
4.3.6	PostgreSQL - DataBase Server	31
4.3.7	Anti-Spam	32

4.3.8	IPBRICKCAFE	32
4.3.9	Groupware	33
4.3.10	IPBrick - Instant Messaging	33
4.3.11	IPBrick - Callmanager	33
4.3.12	VOIP CDR	33
5	More information	35
5.1	Technical Support	35
5.2	Useful Links	35
6	Appendix A - Appliance IPBrick.GT	37
6.1	IPBBrick.GT connections	37
6.2	Analog communications	38
6.3	Digital communications	38
6.3.1	BRI	39
6.3.2	PRI	40
7	Appendix B - Disaster Recovery	45
7.1	USB recovery	45
7.1.1	USB renaming	45
7.1.2	USB pen formatting	47
8	Appendix C - Important Procedures	49
8.1	Administrator user credentials	51
8.2	System users credentials	52
8.3	System administrator credentials	53
8.4	CAFE and PostGRES SQL credentials	54
8.5	Email alerts definition	54
8.6	Email for sending system settings	56
8.7	Email for sending the databases backups notification	57
8.8	Services you want to provide on this server	58

Chapter 1

Purpose of this document

This manual contains important and useful instructions about IPBRICK installation procedure and endeavors to guide you through all the necessary steps to its completion.

Chapter 2

Before Getting Started

Please note:

- When booting from the IPBRICK DVD, the software installation begins immediately.
- There will be an active DHCP server after the IPBRICK installation.
- IPBrick v6.0 comes with a native browser (for more info, please consult section - 4.2 of this document).

Chapter 3

IPBRICK installation

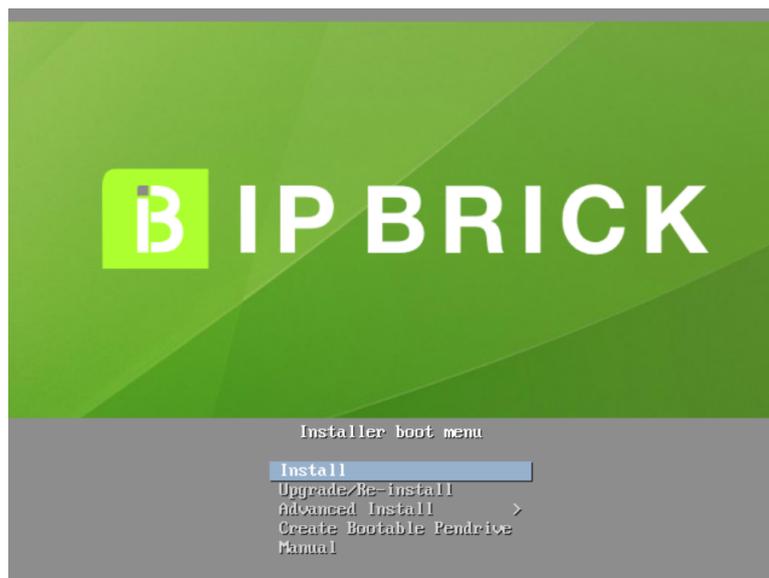
The installation of an IPBRICK server is made using a single DVD.

3.1 Requirements

- IPBRICK installation DVD (Bootable DVD);
- PC x86-64;
- Minimum 2GB of RAM;
- HDD: a minimum of 20GB of disk space (total size of the hard disk drive);
- BIOS Bootable via DVD support;
- Network interface card (Ethernet 100Base-TX).

3.2 Installation Procedure

1. Insert the IPBRICK bootable DVD into the machine's DVD-Rom drive;
2. Enable booting from DVD on the machine BIOS;
3. Boot the machine using the IPBRICK auto install DVD;
4. The IPBRICK logo will appear and also a Installer Boot Menu.



5. Ten seconds later the automatic installation process starts.

Note: *If you want to stop the auto-install timer, please press any key.*

3.3 Installer Boot menu

The boot menu is a very simple and intuitive way to custom manage your IPBRICK installation. Just navigate with the **Up** and **Down** cursor buttons and click on **Enter** to select the highlighted option.

3.3.1 Install

This option is the default option is equivalent to initiating the automatic installation procedure. This process is described in Section 3.4 - Regular Installation Procedure. IPBRICK auto-detects any previous OS (please check Section - 3.4.3 of this document) prompts you to proceed first with data and application backup. This option also offers a high degree of data loss prevention.

3.3.2 Upgrade/ReInstall

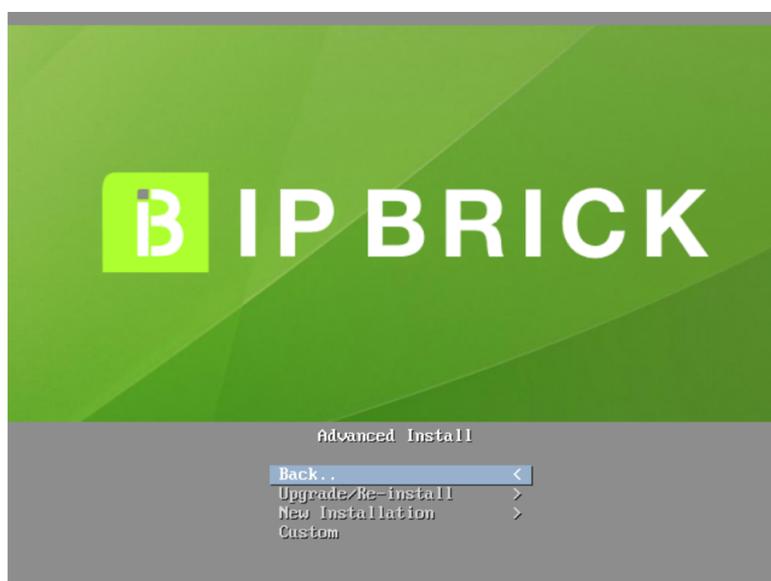
This installation option only applies to scenarios with a previous IPBRICK installation. As a matter of fact, IPBRICK auto-detects (please check Section - 3.4.3 of this document) any previous version and prompts you to proceed first with data and application backup. This option also offers a

high degree of data loss prevention.

IMPORTANT NOTE: *This option uses the IPBrick v6.0 default file system (EXT4), but previous installations may have different file systems, such as, XFS or EXT3. In these cases, the previous data partitions will be kept while the system partitions will be formatted in EXT4.*

3.3.3 Advanced Install

As the name suggests, this option gives you the ability to customize IPBRICK's installation. It offers you new options, that are described in the following sections of this document.



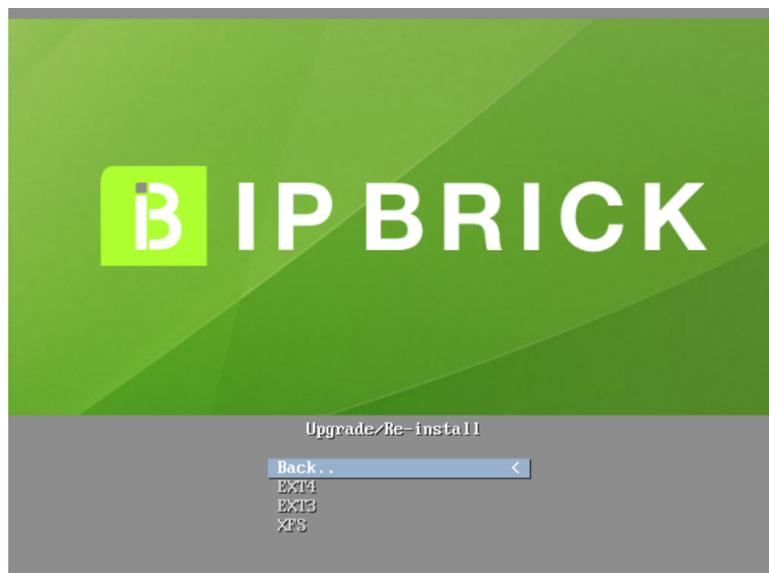
Upgrade/ReInstall

This other Upgrade/ReInstall option also enables you to keep a previous installation data. The installation will keep data from `home1` and `home2` partitions, as well as data from databases.

The difference is in that you will have the possibility to select the file system type:

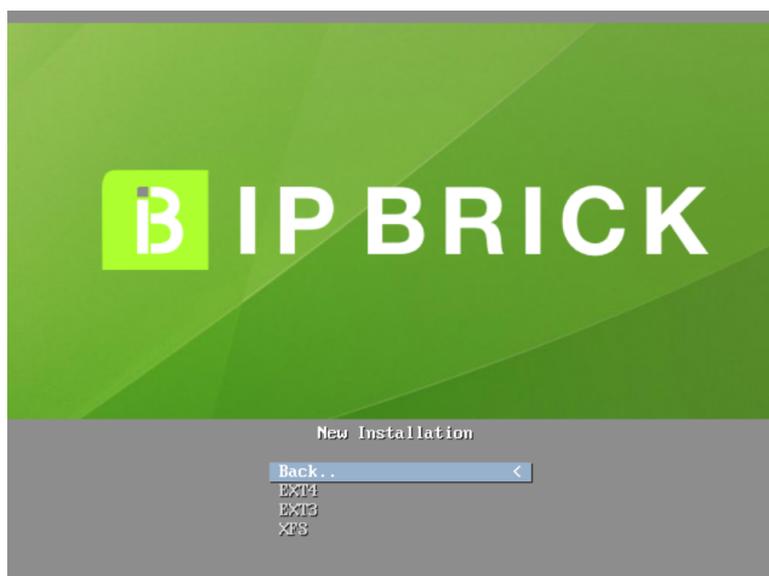
- EXT3 - In order to maintain coherence with previous default file systems, EXT3 is included;
- EXT4 - This is the default setting. EXT4 is the natural evolution from the EXT3, offering you more features: Resize capability as well as the possibility to use greater capacity discs, something that EXT3 didn't;

- XFS - This file system was mainly used in big disks, offering also a greater format speed. XFS also permits disk resize, something that EXT3 didn't.



New Installation

The **New Installation** option erases all the data in your machine, even if you had a previous IPBRICK installation. Please, always remember that you will loose all data on your server!



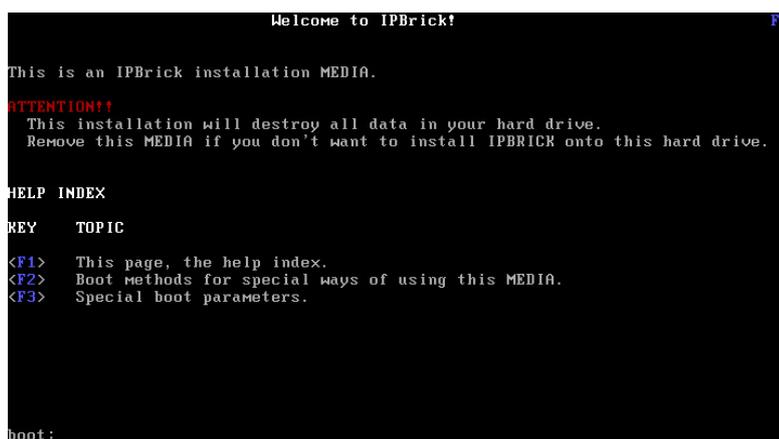
After selecting the **New Installation** option, you will be able to select the file system as in the **Upgrade Reinstall** option:

- EXT3 - In order to maintain coherence with previous default file systems, EXT3 is included;
- EXT4 - This is the default setting. EXT4 is the natural evolution from the EXT3, offering you more features: Resize capability as well as the possibility to use greater capacity discs, something that EXT3 didn't;
- XFS - This file system was mainly used in big disks, offering also a greater format speed. XFS also permits disk resize, something that EXT3 didn't.

Custom

If you select the **Custom** option, additional information about boot options and parameters will be displayed. Data integrity of the installation media will also be checked.

- Pressing F1 will display the interface shown at Figure 3.1;

The image shows a terminal window titled "Welcome to IPBrick!". The text inside the window reads: "This is an IPBrick installation MEDIA." followed by a red "ATTENTION!" warning: "This installation will destroy all data in your hard drive. Remove this MEDIA if you don't want to install IPBRICK onto this hard drive." Below this is a "HELP INDEX" section with a table of key shortcuts: <F1> for the help index, <F2> for boot methods, and <F3> for special boot parameters. At the bottom, there is a "boot: _" prompt.

```
Welcome to IPBrick! F1
This is an IPBrick installation MEDIA.
ATTENTION!
This installation will destroy all data in your hard drive.
Remove this MEDIA if you don't want to install IPBRICK onto this hard drive.
HELP INDEX
KEY    TOPIC
<F1>  This page, the help index.
<F2>  Boot methods for special ways of using this MEDIA.
<F3>  Special boot parameters.
boot: _
```

Figure 3.1: IPBRICK Installation - Help Index

- By pressing F2 you will get an interface with options on boot methods (Figure 3.2);

```

ATTENTION!!
This installation will destroy all data in your hard drive.
Remove this MEDIA if you don't want to install IPBRICK onto this hard drive.

Available boot methods:

ipbrick
  Start the installation -- this is the default MEDIA install.
manual
  Boot from MEDIA into a command shell
pendrive
  Create a bootable pendrive for installing IPBrick.
partitions=root,usr,var,opt,home1,home2
  Start the installation -- this is used to specify the partitions' size (in GB)

To use one of these boot methods, type it at the prompt, optionally
followed by any boot parameters. For example:

  boot: ipbrick verbose

If unsure, you should use the default boot method, with no special
parameters, by simply pressing enter at the boot prompt.
boot: _

```

Figure 3.2: IPBRICK Installation - Boot methods

Partitions boot option

The `partitions` boot option. This feature enables you to allocate a custom size (in GB) to each of the following partitions:

```

1 root   - equal or more than 2 GB
2 usr    - equal or more than 4 GB
3 var    - equal or more than 4 GB
4 opt    - equal or more than 2 GB
5 home1  - equal or more than 1 GB
6 home2  - equal or more than 1 GB

```

Example:

If you have an 60GB HDD and want that each partition to have a size of 10GB, all you need to do is type:

```
ipbrick eraseall partitions=10,10,10,10,10
```

Each number separated by commas will be the partition size in GB. The order is as the one presented:

```

1 root
2 usr
3 var
4 opt
5 home1
6 home2

```

NOTE: If your disk capacity is 80GB and you type the exact same command of 10GB, the remaining 20GB will be divided equally by `home1` and `home2`

If you have committed a mistake a warning page will be displayed (Figure 3.3).

```

IPBrick Recover Media                                IPBRICK (2014)
AUTO

Starting system log daemon
Starting device manager
Loading modules
Search for alternative modules from PENDRIVE
Setting up keyboard
Searching for installation MEDIA
Installation MEDIA found in: scd0
MOUNTING MEDIA
Loading manual partitions
ERROR on partitions. Must specify 6 partitions with the minimum values (in GB):
USAGE: ipbrick partition=partition, usr partition,usr partition,opt partit
ion,home1 partition,home2 partition
For example:
ipbrick partitions=10,10,10,10,10,10
ABORTING INSTALLATION...
-

```

Figure 3.3: IPBrick Installation - Partitions Error Warning

- By pressing F3 you will get an interface with special boot parameters (Figure 3.4).

```

IPBrick SPECIAL BOOT PARAMETERS                      F3

You can use the following boot parameters at the boot: prompt,
in combination with the boot method (see <F2>).

Available boot parameters:

verbose      Boot in verbose mode
nodialog     Boot without dialog
quiet        Boot in quiet mode
nofakeraid   Disable fakeraid detection
nobackupsys  Disable system data backup
ext3 or xfs  Format using ext3 or xfs filesystem
pae or nopae Install with or without pae support
nochecksum   Install without checking data integrity

For example:

boot: ipbrick verbose nofakeraid

If unsure, you should use the default boot method, with no special
parameters, by simply pressing enter at the boot prompt.
boot: _

```

Figure 3.4: IPBRICK Installation - Special boot parameters

3.3.4 Create Bootable Pendrive

It's possible to create a portable version of IPBRICK by creating an image of the boot DVD-Rom in a USB pen, this way you can install IPBRICK's software without having to depend exclusively on the DVD.

Requirements

- The pendrive needs to have at least 2GB;

- A machine with a USB slot.

Note: *If you have in the pen any data you wish to keep, please save a copy elsewhere, because in order to mount the image the pen will be formatted and you will lose all of its contents.*

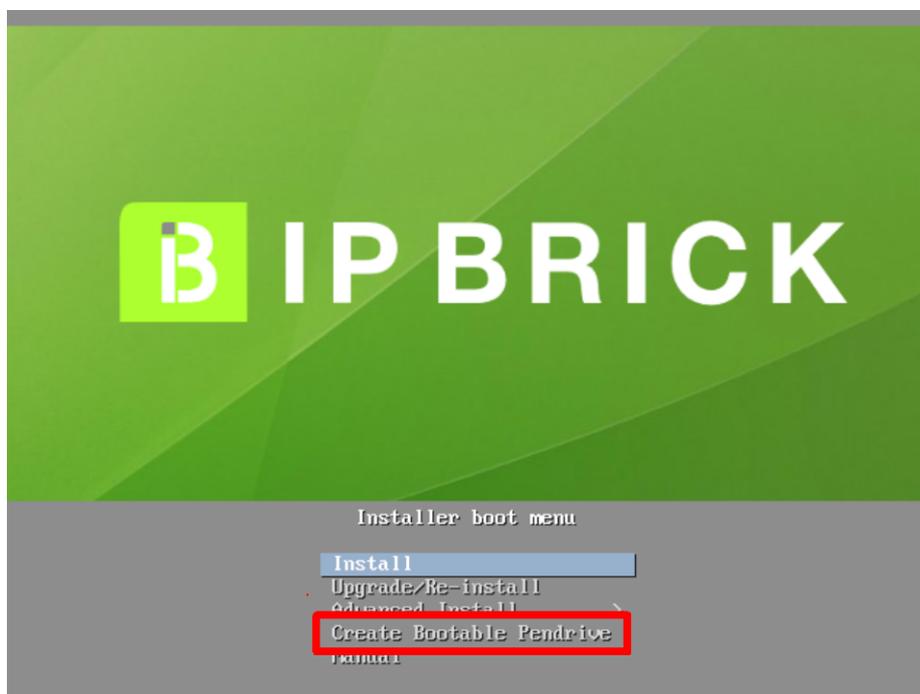
Procedure

To create the portable version of IPBRICK's software, please follow these steps:

- (a) Insert IPBRICK's boot DVD in the machine's DVD-ROM Drive
- (b) Restart the machine
- (c) The IPBRICK logo will appear.

! Attention !: Click on any key to stop the automatic count-down, if not, IPBRICK boot DVD will automatically start Installation procedures!

- (d) Insert the pen.
- (e) Click on the cursor buttons (up or down) to navigate to:
Create Bootable Pendrive



- (f) Please wait for the procedure to end.
- (g) The system will unmount the pen and you can remove it.
- (h) Remove the DVD

- (i) Press any key to reboot the machine

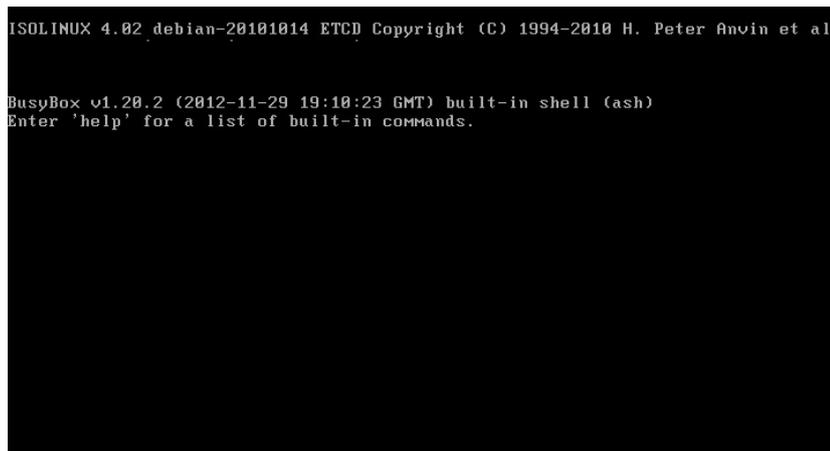
You'll now be able to use the pen to install IPBRICK in another machine, simply configure the BIOS of that machine to boot correctly from the USB port.

3.3.5 Manual

At the Manual option you will be able to boot from the DVD to a console where you will be able to execute commands.

This can act as a debug tool, helpful if your installation isn't successful or you have persistent problems after installing IPBRICK.

NOTE: *This option should only be accessed by experienced system administrators!*



```
ISOLINUX 4.02 debian-20101014 ETCD Copyright (C) 1994-2010 H. Peter Anvin et al
BusyBox v1.20.2 (2012-11-29 19:10:23 GMT) built-in shell (ash)
Enter 'help' for a list of built-in commands.
```

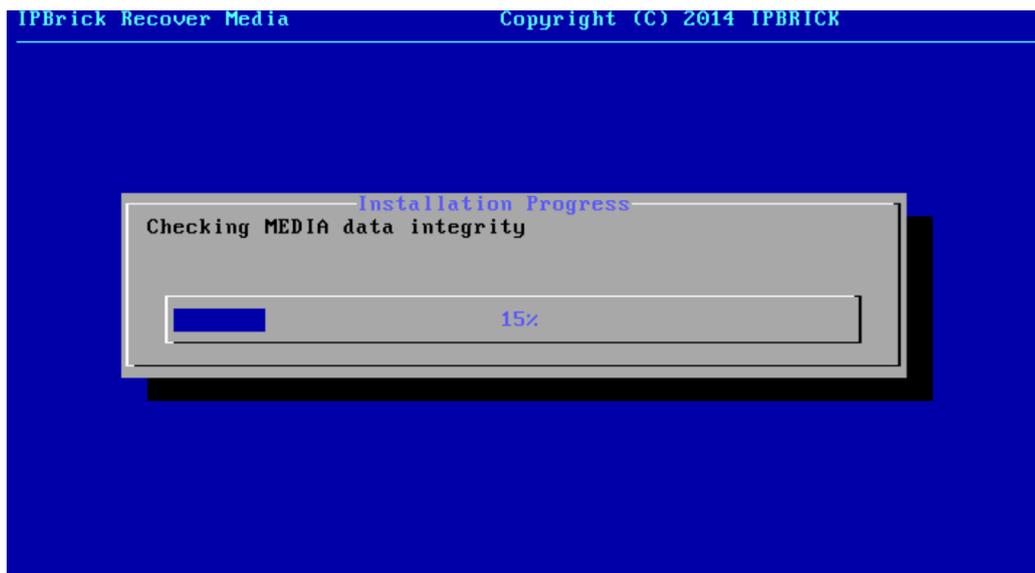
3.4 Regular Installation

This regular installation is equivalent to the `Install`. As stated previously, When the timer reaches zero or when you choose the `Install` option at the boot menu, the regular installation procedure takes place.

By default, the installation runs in graphical mode with a progress bar, but there is another mode, more textual, where every step is described.

3.4.1 Graphical mode

The graphical mode (Dialog) presents a progress bar and this is the default presentation.



3.4.2 Text Mode

To select the text mode, you must choose the Custom option and type `ipbrick no dialog` as a special boot parameter (please check Subsection 3.3.3 of this document for more info).

In text mode (no Dialog) the regular installation procedure performs these actions:

- Warning regarding the beginning of the installation process.
- Kernel image loading.
- After startup, the auto-installation's script will attempt to detect the computer's hardware configuration where the IPBRICK is being installed.

```
Starting system log daemon
Loading modules
Creating devices
Setting up keyboard
Searching MEDIA
MEDIA Found in: ___
MOUNTING MEDIA
```

6. After detecting all the hardware devices, a partition table will be created on the hard drive.

```
STARTING HARD DISK DRIVE...
HDD FOUND
USING: ___
CHECKING DISK SIZE...
```

```
RESIZING HOMEs to FULL disk size
WRITING PARTITION TABLE TO HDD...
```

7. The auto install process starts once more, detecting that the partition table has already been applied to the disk.

```
HDD PARTITIONED
PROCEEDING WITH INSTALLATION
```

8. The partition preparation takes place.

```
FORMATTING HDD...
This step can take some time please wait...
FORMATTING PARTITION /dev/___1
FORMATTING PARTITION /dev/___3
FORMATTING PARTITION /dev/___5
FORMATTING PARTITION /dev/___6
FORMATTING PARTITION /dev/___7
FORMATTING PARTITION /dev/___8
FORMATTING SWAP
MOUNTING NEW FILESYSTEM...
```

9. The software installation:

```
INSTALLING...
This step can take some time please wait...
INSTALLING DRIVE /media/data/drive1.dat
...
INSTALLING DRIVE /media/data/drive6.dat
CHECKING physical address extension support...
INSTALLING boot loader...
...
Boot loader installed.
...
System is now installed.
```

10. The installation process ends with the DVD-ROM's ejection. Before ejection, the following message will be displayed:

```
UMOUNTING MEDIA
REMOVE MEDIA BEFORE REBOOTING YOUR SYSTEM
DO NOT RESTART SYSTEM WITH IPBRICK RECOVER MEDIA
UMOUNTING ALL
Installation scripts ENDED.
..
```

11. Remove the installation MEDIA and reboot the computer;

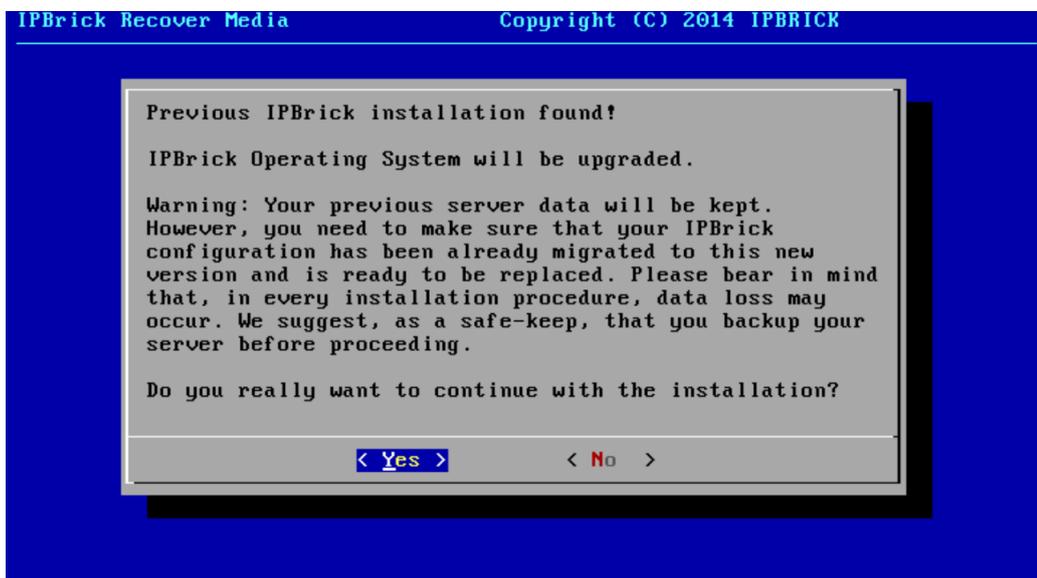
12. During the system boot make sure that the BIOS is configured to boot from the hard disk drive (HDD);
13. After the BIOS boot up sequence, it will display the boot loader (*Grub*);
14. Next, the kernel startup messages will appear. The kernel startup sequence should end with the following lines:

```
Debian GNU/Linux 4.0 ipbrick tty1
```

```
ipbrick login:
```

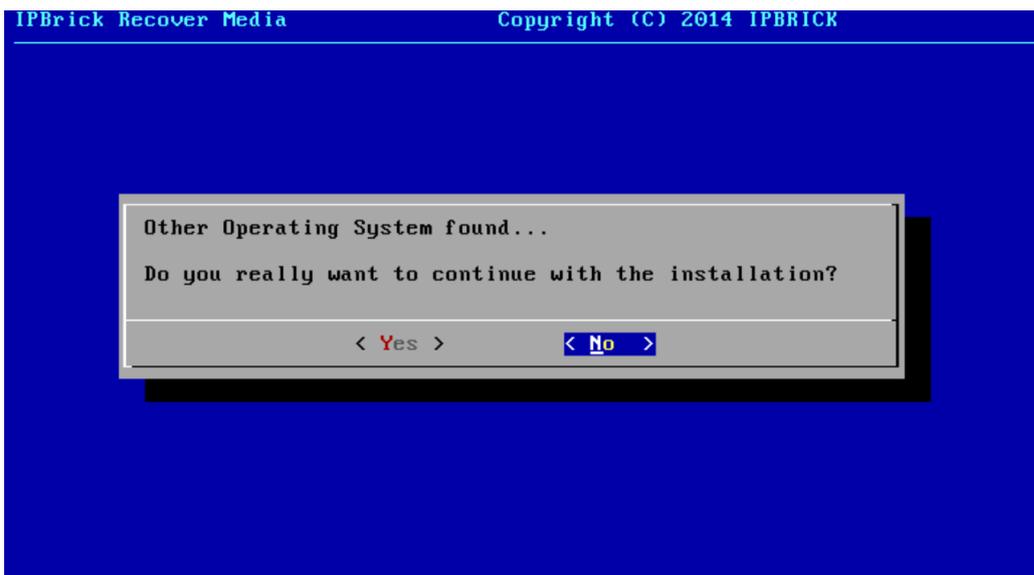
3.4.3 Auto Detection of Previous Installations

New in IPBRICK 6.0 is the ability to detect previous installations and perform the installation procedure while keeping the old server's data. If there is a previous IPBRICK installation you will visualize a warning prompt as the one present in the following picture. The default option is NO.



NOTE: *Obviously, this auto-detection only occurs if you select any installation option other than New Installation.*

IPBRICK 6.0 also detects other operating systems and it will present you with another warning, alerting you of the fact and asking you if you want to proceed with the installation.



3.5 Error Messages

During the installation process some messages may be shown.

The critical warnings are:

- The installation scripts do not detect the MEDIA drive:

```
MEDIA NOT FOUND : Aborting INSTALL Scripts (NOT OK)
```

- The installation scripts do not detect the hard disk drive (HDD):

```
NO HARD DISK FOUND... (NOT OK)  
ABORTING INSTALLATION... (NO HDD)
```

- The hard disk drive does not have the minimum size required:

```
NOT ENOUGH SPACE ON HDD  
DISK SIZE: XXXX MegaBytes  
NEEDED CAPACITY: YYYY MegaBytes  
NOT ENOUGH SPACE ON HDD
```

NOTE: In old controllers the installation procedure may be interrupted. In these cases, there's the possibility to run this command:

```
ipbrick eraseall smalldisk
```

This procedure uses the `fdisk` utility for disks with no more than 2TB of maximum space.

Critical errors are due to:

- Physical hardware failure: the disk does not exist or it has a wrong configuration (e.g: IDE bus, check for MASTER and/or SLAVE).
- Wrong BIOS configuration: Please check that the hardware is correctly configured (HDD, RAID controllers).
- If all of the above is correct, then the IPBRICK CD that you have shouldn't support your specific hardware configuration. Please send your hardware description and configuration by mail to *support@ipbrick.com*. You will be contacted by the IPBRICK Technical Department.

3.6 Customized Installation

If you insert a Pendrive into the server before installation, it's possible to make a customized installation of IPBrick.

3.6.1 Custom Partitioning

Before the installation process, you need to create a file called *parts.dat* in the pendrive root path, with the needed partition table structure (available for Download in the Documentation section). Next, the structure is presented in MB along with the explanation:

```
2000 -> Represents the /root partition.
1024 -> Represents the /swap partition.
4500 -> Represents the /usr partition.
2048 -> Do not change!
4000 -> Represents the /var partition.
2000 -> Represents the /opt partition.
100  -> Represents the /home1 partition. Minimum size
100  -> Represents the /home2 partition. Minimum size
7    -> Do not change!
```

The remaining disk space will be allocated in partitions */home1* and */home2*.

3.6.2 Software RAID installation

You can have RAID1 configuration done by software. Before the installation process, you should create another file called *ipbrick.cfg* in the pendrive root path. Next, the structure is presented along with the explanation:

```
CONFIGSOFTRAID=1      -> Activates the software RAID
SOFTRAIDHDD[0]="sda"  -> It's the disk 1 device
SOFTRAIDHDD[1]="sdb"  -> It's the disk 2 device
SOFTRAIDPARTSUF="p"   -> Do not change!
RAIDTYPE=1           -> It's the RAID type. Only this raid type is supported!
```

You should know specifically the correct designation of hard drives devices before the file creation, which depends of the used technology: IDE, SCSI, SATA etc.

NOTE: The RAID installation requires a file that it is available at our eshop

Error messages

The typical error messages that can be presented are:

- Message 1: The system cannot find hard disks and proceed with installation. This is a critical error because no disks were detected, so it's impossible to install the system.

```
NO HARD DISK FOUND... (NOT OK)
ABORTING INSTALLATION... (NO HDD)
```

- Message 2: The installation is in the second boot, the RAID was created in the first boot but it can't initialize. It's a critical error because the system knows that a RAID is configured but it can't be initialized.

```
Failed to assemble software raid
ABORTING INSTALLATION...
```

- Message 3: The installation is in the first boot and it unsuccessfully tries to create the RAID. The system detects the RAID configurations in the pen but cannot create the raid:

```
Failed to config software raid
ABORTING INSTALLATION...
```

- Message 4: Here the installation is almost done and the Boot Loader is being configured but the Boot Loader is not installed properly. So it can be critical - the machine could not boot because the Boot Loader was unsuccessfully installed.

```
ERROR installing boot loader.
ABORTING INSTALLATION...
```

Note: The files must be saved in ASCII format. If you want to test that they are, you can do `file <filename>` in Linux console.

3.6.3 RAID by hardware - LSI Megaraid Driver Installation

When implementing RAID by hardware, using LSI's Megaraid cards, it is necessary to install the controller drivers.

To do so, you will need a PEN drive and the `lsi_megaraid_module` file, containing the software drivers.

NOTE: The file is available in our eshop at both these locations:

Downloads » Software » IPBrick Related Software » IPBrick 5.3

Downloads » Documentation » Installation Manuals

Extract the `lsi_megaraid_module`.

File contents:

- `system.cfg`
- `system.sh`
- `modules.tgz`

Move or copy these three files to the root of your USB pendrive.

Before initiating the installation process, insert the USB pen in your server's USB slot. When the installation begins the IPBrick will detect the PEN and the drivers will be uploaded to the system's kernel.

Chapter 4

Managing the IPBRICK

4.1 Network configuration

The IPBRICK default network configurations are as follows:

- Private network interface card (eth0)
 - IP: 192.168.69.199
 - Network: 192.168.69.0/24

- Public network interface card (eth1)
 - IP: 10.0.0.253
 - Network: 10.0.0.252/30

- Gateway: 10.0.0.254 (eth1)

- Hostname: ipbrick.domain.com

4.2 Connecting to IPBRICK

IPBRICK comes with a native browser so you can access it without having to bring a laptop or use another machine to access it. Very useful in virtual environments. All it takes is a monitor, a mouse and a keyboard to implement the always important first settings (Please consult Sections 4.3 - Logins and Passwords and 8 - Important Procedures).



Figure 4.1: IPBRICK Login

After logging in, you will find the always helpful Debug-Console icon, located at the top right hand corner of the screen. Note that, this icon only appears the first time you install IPBRICK, in the following accesses to the interface, this icon will not be displayed. This icon also appears when the browser is open in the console. You may also click on it to close it.



Figure 4.2: Debug-Console icon

NOTE: This interface is presented every time you access it locally, but if you wish to access it from the console you may type the following command:
`gui-console start`

4.2.1 Direct connection

In physical environments, you may wish to connect a crossover network cable to the NIC of the management station (e.g. a laptop PC) and to the NIC on the IPBRICK computer. (Figure8.33).

In this scenario, the network configuration of the management station may be set to receive automatic IP address and DNS configuration - DHCP client.

In the following configuration example we will be using a laptop computer installed with the MS Windows 7 operating system.

The configuration received from the DHCP is:

- IP Address: 192.168.69.64 to 192.168.69.95;
- Subnet Mask: 255.255.255.0;
- Default Gateway: 192.168.69.199;
- DNS Server: 192.168.69.199.

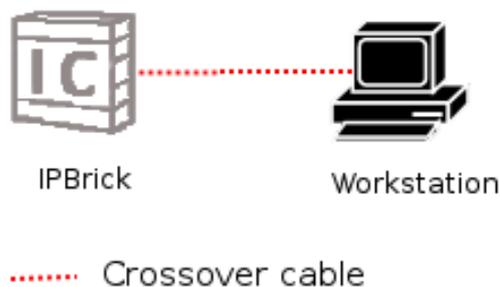


Figure 4.3: Direct connection between an IPBRICK and a PC

Procedure to set the dynamic IP configuration (DHCP)

NOTE: *The following procedures are valid for Windows 7!*

1. Press the [windows] key
2. Choose *Control Panel*
3. Choose *Network and Sharing Center*
4. Click on *Network and Internet*
5. Click on the *Local Area Connection* link
6. Click on *Properties*
7. In the next dialog window, select *TCP/IPv4* and click on *Properties* again
8. In the next dialog window, select "Obtain automatic IP configuration" and "Obtain DNS servers address automatically"
9. Close the "TCP/IP Properties" and the "Network Properties" windows to save the configuration changes.

If the management station was already configured, with the settings described above, then you should proceed as follows:

Procedure to renew the IP address

1. Press keys [windows]+[R] (both at the same time)
2. Type *cmd* and press [ENTER] (or push the OK button)
3. Type *ipconfig /release* and press [ENTER]
4. Type *ipconfig /renew* and press [ENTER]

5. Type *ipconfig /all* and press [ENTER]
6. To close this window, type *exit* and press [ENTER]

To check your IP address, please proceed as follows:

How to check the IP address

1. Press keys [windows]+[R] (both at the same time)
2. Type *cmd* and press [ENTER]
3. Type *ipconfig /all* and press [ENTER]
4. To close this window, type *exit* and press [ENTER]

If at the end of this procedure you still don't have an IP address like the one described above:

1. Check for network connection (*link*, green light on) at the management station's network interface card. If you don't have a link, please check if your network cable is in good shape and if it really is a crossover network cable.
2. If IPBRICK computer has two network interface cards, please connect your network cable to the other network interface card. Repeat the **Procedure to renew the IP address**.

4.2.2 Connecting through a hub or a switch

Connect IPBRICK network interface card to a hub or to a switch (Figure4.4). The management station must be connected to the same hub or switch (alternatively one must assure connectivity from the management station to that hub or switch).

In the following example we will use a management station running MS Windows 7 operating system:

Procedure to configure static IP address

1. Press the [windows] key
2. Select *Control Panel*
3. Choose *Network and Sharing Center*
4. Click on *Network and Internet*
5. Click on the *Local Area Connection* link

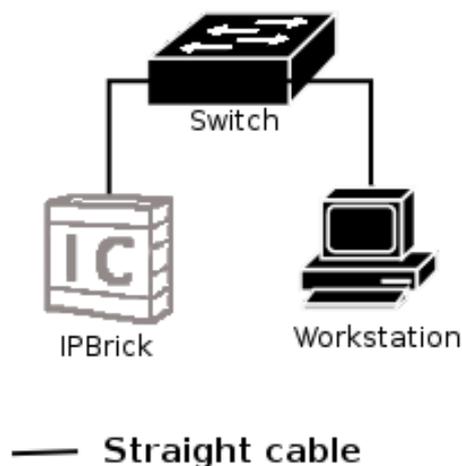


Figure 4.4: Connecting IPBRICK to a PC with a switch

6. Click on *Properties*
7. In the dialog window select IPV4 and push the Properties button.
8. In the dialog window, fill the following fields:
 - IP Address: 192.168.69.1
 - Network Mask: 255.255.255.0
 - Gateway: 192.168.69.199
 - Primary DNS Server: 192.168.69.199
 - Close this window pushing the Ok button
9. Close the Network Properties Window pushing the Ok button to save the changes.

4.2.3 Network Connectivity Test

To test the connection between the management station (in this example a MS Windows OS running computer) and the IPBRICK's server, please proceed as follows:

Procedure to test network connectivity

1. Press keys [windows]+[R] (both at the same time)
2. Type *cmd* and press [ENTER]
3. Type *ping 192.168.69.199* and press [ENTER]
4. You should get the following lines from the ping utility:

```
Answer from 192.168.69.199: bytes=32 time<1ms TTL=64
```

```
Ping statistics for 192.168.69.199:
    Packets: Sent = 4, Received = 4, Lost = 0
```

5. To close this window, type *exit* and press [ENTER]

With the connection set, the IPBRICK server may be accessed using any web browser (e.g.: MS Internet Explorer (10 or later versions), Firefox, Chrome). The URL address is : <https://ipbrick.domain.com> or <https://192.168.69.199>.

4.3 Logins and Passwords

IMPORTANT NOTE: The authentication credentials presented next are the system's default logins and passwords. Needless to say that, after the installation procedure, you must alter them. Not complying with this directive opens a breach on your system's security!!!

For information on this and other crucial after-installation first measures please consult section 8 Appendix C - Important Procedures.

4.3.1 IPBRICK - Web Interface (GUI)

- URL
<https://192.168.69.199>
<https://ipbrick.domain.com>
- Name: admin
- Password: 123456

4.3.2 IPBRICK - Console

- root : R01aBill
- operator: L1opardo

4.3.3 IPBRICK - Email copy

There are two email accounts destined to the IPBrick received and sent messages storage. Initially the query (POP or IMAP) of this messages is done by:

Sent Email

- Login: sentmail

- Password: L1opardo

Received Email

- Login: receivedmail
- Password: L1opardo

Note: After the IPBrick installation this service is not active, but it can be activated later through the web interface in IPBrick.C- >> E-Mail >> Mail Copy.

4.3.4 IPBRICK - IPBRICK.SEC AntiSpam

IPBrick has a system email account named `spam`, that is used at IPBRICK.SEC Antispam. The idea is to get all the filtered spam in that specific account. Initially the query (POP or IMAP) of this messages is done by:

- Login: spam
- Password: L1opardo

Note: These notifications only exist if IPBrick has the IPBRICK.SEC Anti-Spam licence.

4.3.5 IPBRICK - Contacts

- URL
`http://contacts.domain.com`
- Login and administration password:
`administrator : 123`

The access to this service is initially limited to the "administrator" user. This user will grant access and permissions to the other IPBRICK users. Each user should use its own login and password to authenticate.

4.3.6 PostgreSQL - DataBase Server

- URL
`http://pgsqladmin.domain.com`
- Login and administration password:
`sqlserver : sqlserver`

To change the the default passwords on PgSQLAdmin, please access the interface:

`pgsqladmin.domain.com` - On the left side of the screen, click on PostgreSQL (use the default login: `sqlserver` and the default password: `sqlserver`).

Click on the **Roles** tab and then on the **Alter** to change the password for postgres and sqlserver



Figure 4.5: Altering the administrator credentials

4.3.7 IPBRICK.SEC Anti-Spam

To access the IPBRICK.SEC Anti-Spam access the IPBRICK web interface at:

IPBrick.C
E-Mail
Anti-Spam

Or:

IPBrick.SEC
E-Mail
Anti-Spam

The configuration interface is available only for "administrator" user. It is required an initial authentication, the login and password are the same ones used to access the IPBRICK web interface (GUI).

4.3.8 IPBRICKCAFE

- URL
<https://cafe.domain.com>

The access to this service is granted to all IPBRICK users. Each one must use its own login and password.

IMPORTANT NOTE: The IPBRICK CAFE service replaces the MyIPBRICK portal. You will find all the same features and more. For more information please consult the IPBRICK reference Manual - Appendix F.

To change the default administrative password on CAFE, please access the interface:

cafe.domain.com

- Default login: admin
- Default password: 123456

To change the administrator password access the admin options.

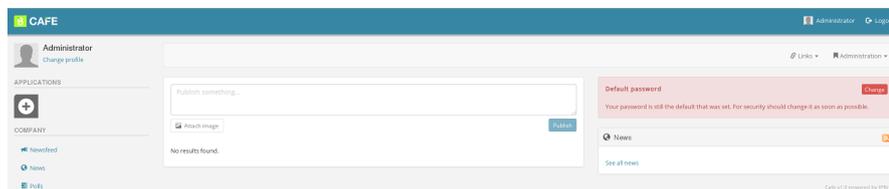


Figure 4.6: Altering the administrator credentials

4.3.9 Groupware

- URL
`http://groupware.domain.com`

The access to this service is granted to all IPBRICK users. Each one must use its own login and password.

4.3.10 IPBrick - Instant Messaging

- URL
`http://ipbrick.domain.com:5280/admin/`
- Login and administration password:
`administrator@ipbrick.domain.com: 123`

This application allows specific configurations to the Instant Messaging service.

4.3.11 IPBrick - Callmanager

- URL
`http://callmanager.domain.com`
- Login and administration password:
`administrator:123`

This application allows the access to the Asterisk Call Manager.

4.3.12 VOIP CDR

You can access via FTP to a .CSV file that stores statistics regarding calls

- Name: VoIPCDR
- Login: L1opardo

Chapter 5

More information

5.1 Technical Support

To contact IPBRICK technical support, please send an e-mail to:
support@ipbrick.com.

5.2 Useful Links

- www.ipbrick.com
- www.ipportaldoc.com

Chapter 6

Appendix A - Appliance IPBrick.GT

This chapter contains the necessary instructions for a correct IPBrick.GT (Figure 6.1) interconnection to the existant costumer network and telephony access.



Figure 6.1: IPBRICK appliance

6.1 IPBrick.GT connections

At the front of an IPBrick.GT appliance we find these inputs and outputs:

- 4 - RJ-45 ports (4x Gigabit-Ethernet): The left port is `eth0`, following to right side for `eth1`, `eth2`, `eth3`;
- 2 - USB 2.0 ports;
- Console port: To connect using the RJ-45 serial extension cable included with the appliance. Windows HyperTerminal can be used with these settings: baud rate 19200, parity none, data bits 8 and stop bits 1;

- Display: A .deb package can be installed at IPBrick to show the ethernet/telephony cards port status;

At the back of an IPBrick.GT appliance we have:

- 2 PCI slots for telephony cards;
- A power switch;

6.2 Analog communications

In case of analog telephony accesses/lines, IPBrick.GT can have a card as the one visible at Figure 6.2. This card can have different modules inserted:

- FXS: Foreign eXchange Subscriber interface, to connect to telephones, modems, FAX's etc (GREEN MODULES);
- FXO: Foreign eXchange Office interface, to connect to PSTN (RED MODULES);

At Figure 6.2 example, the two first interfaces are FXS and the last two are FXO. It's possible to see the connection between the module and the specific port. If you want to connect phones to the FXS ports, those ports should be powered on using the **PW** interface showed at Figure 6.2.

Note: The card *jumper*s should not be changed. The physical link is RJ-11.

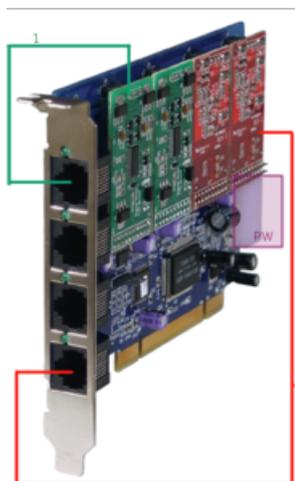


Figure 6.2: Analog telephony card

6.3 Digital communications

In case of digital lines, IPBrick.GT cards can be ISDN BRI or ISDN PRI.

6.3.1 BRI

The ISDN BRI¹ card showed at Figure 6.3 has 4 ports (the telephony cards have 1BRI, 2BRI and 8BRI configurations too). To each port a group of 5 jumpers is associated and depending of the jumpers' configuration, the port can stay as NT² (acting as operator) or TE³ (acting as PBX). For example, at Beronet cards if jumpers are connected to the two right side pins (default configuration), port is configured as TE. If jumpers are connected to the two left side pins, the port is acting as NT. It's important always to check and configure all the port jumpers. Normally the telephony cards have the TE/NT configuration schema but you can always consult the card's instruction manual.

A 8BRI card complete schema is present at <http://www.ipbrick.com/files/8BRISchema.png>.

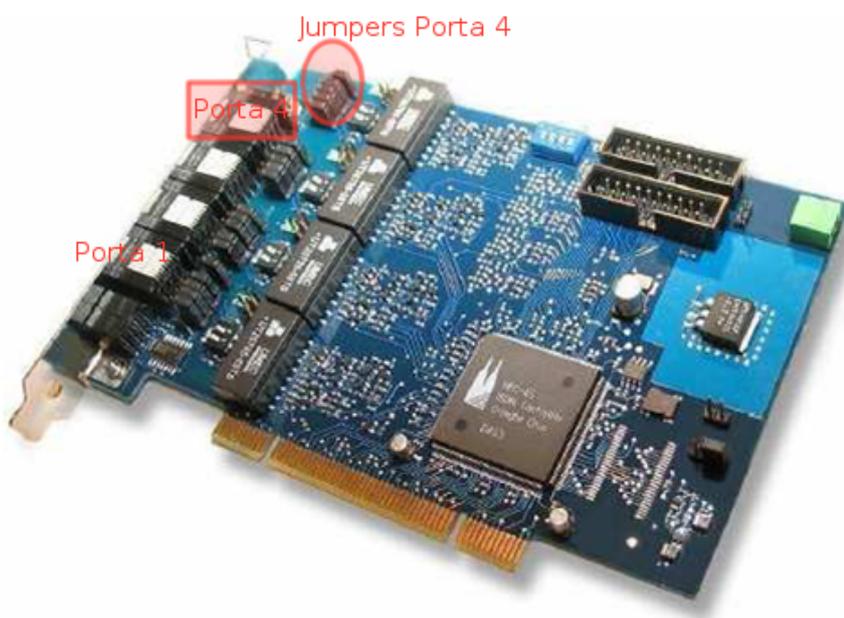


Figure 6.3: BRI card

The correct port configuration (NT,TE) between all the company interfaces, is present at Figure 6.4.

Leds

- Fixed Red: With *link*;
- Blinking Red: Without *link*;
- Fixed Green: Current call using that port.

¹Basic Rate Interface

²Network Termination

³Terminal Equipment

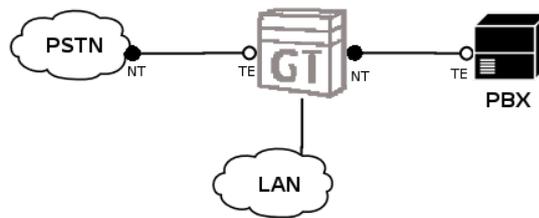


Figure 6.4: Interconnection between IPBRICK, PSTN e PBX

Pinout

The correct cable pinout between PSTN, IPBrick.GT and PBX can be seen at Figure 6.5 and Figure 6.6.

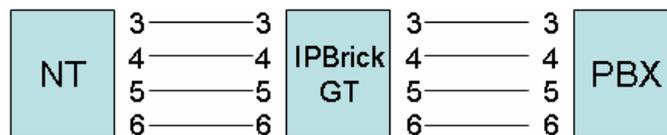


Figure 6.5: Straight RJ-45 cable pinout

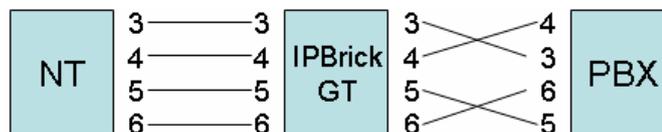


Figure 6.6: Crossover RJ-45 cable pinout between IPBrick.GT and PBX

6.3.2 PRI

For PRI⁴ lines (E1 in Europe or T1 at USA) there are telephony cards with 1, 2 or 4 ports. At Figure 6.7 a PRI card is showed with 2 ports. Depending of the card manufacturer, port 1 can be designated as 1 (Digium) or A (Sangoma), and port 2 as 2 or B.

Leds

- Fixed Red: With *link*;
- Fixed Green: Without *link*.

⁴Primary Rate Interface

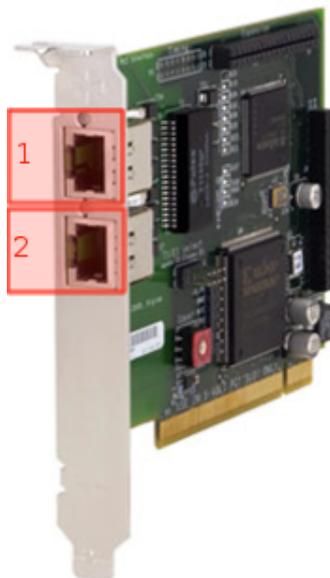


Figure 6.7: PRI card

Pinout

The correct cable pinout between PSTN, IPBrick.GT and PBX can be seen at Figure 6.8.

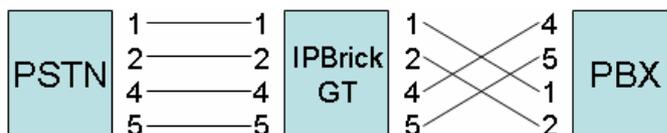


Figure 6.8: Crossover RJ-45 cable pinout between IPBrick.GT and PBX

The connection between the PRI modem and the existant PBX can use:

- Coaxial cables: Two coaxial cables (send and receive) are connected between the PRI modem and the PBX (Figure 6.10). The connector is usually BNC but different types of BNC connectors are used, depending of the operator.
- UTP cables: One PRI UTP cable connected between the PRI modem and the PBX using RJ-45 connectors (Figure 6.11)

Depending of that connection type, IPBrick can intercept that PBX/PSTN connection using:

- **balun** (Figure 6.9) is a converter that can be plugged into by 2 coaxial cables at one side (2 BNC's), and at the other side a single RJ-45 cable can plug into an IPBrick telephony card port. The connection schema can be viewed at Figure 6.13;

- RJ-45: The connection between PBX, IPBrick.GT and PSTN is made by UTP cables using RJ-45 connectors (Figure 6.12);



Figure 6.9: BNC/RJ45 Balun

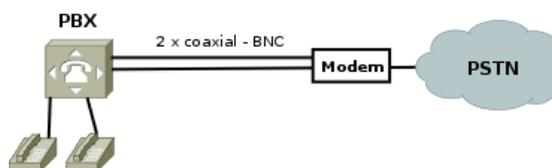


Figure 6.10: PRI modem and PBX connection by coaxial

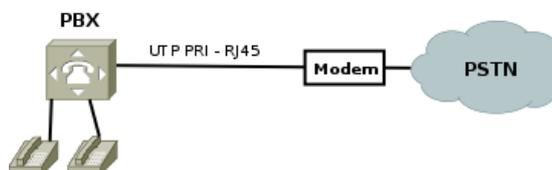


Figure 6.11: PRI modem and PBX connection by UTP

NOTE: For BRI/PRI straight connections using UDP, normal ethernet network cables can be used (4 pairs). No need to use specific BRI/PRI UDP cables (2 pairs).

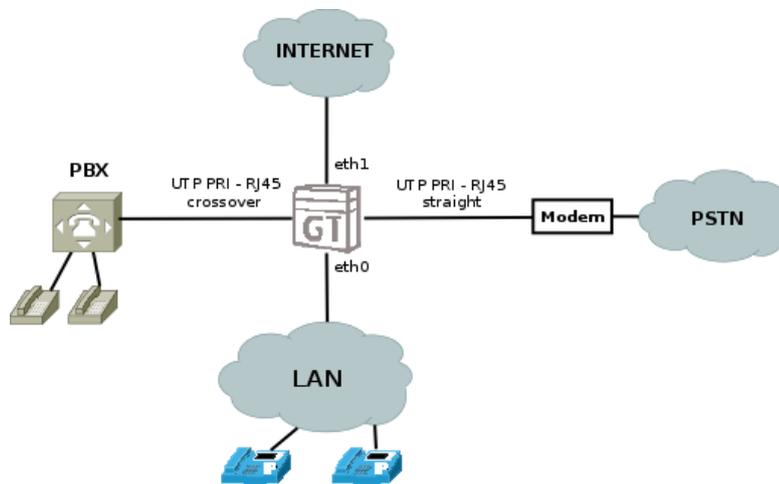


Figure 6.12: IPBrick intercepting PRI line and PBX using UTP cables only

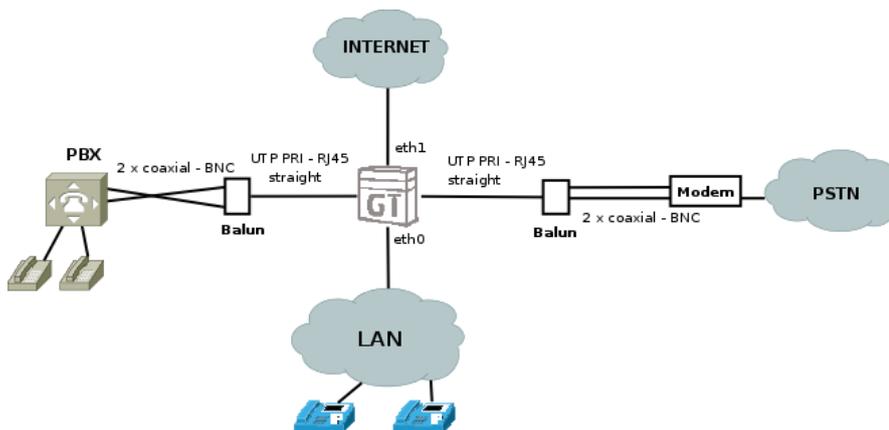


Figure 6.13: IPBrick intercepting PRI line and PBX using baluns

Chapter 7

Appendix B - Disaster Recovery

7.1 USB recovery

Immediately after installation IPBRICK will have a configuration called `default` which is the IPBRICK's base configuration.

All subsequent configurations done in IPBRICK through the web interface are saved in a Postgres database. This way any changes done will only be effective in the system after clicking on `Apply Configurations`.

IPBRICK allows the time tracking of all configurations, because when you modify something in the web interface and `Apply Configurations`, a new configuration is locally saved. It is possible to store these configuration files in an USB pen and additionally send them to a configurable email address. In the filename we have the date and the exact hour when a configuration was created. In short, this configuration management allows a fast disaster recovery, in case of hardware problems.

! Attention !: After the IPBRICK installation you should always insert a USB pen connected to server. The pen must be labeled with the name `IPBRICK-D` and must be FAT32 formatted.

7.1.1 USB renaming

To rename your USB pen to `IPBRICK-D` simply do a right click on its icon in `My Computer` and select `Rename`

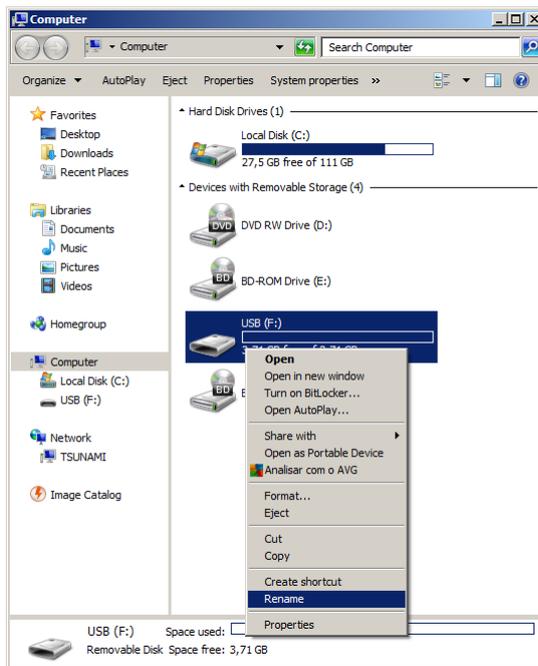


Figure 7.1: Rename USB pen

Type IPBRICK-D

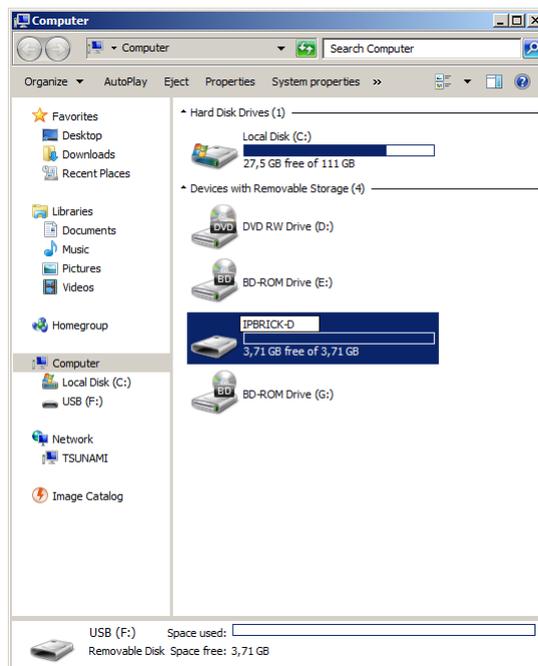


Figure 7.2: Rename USB pen with 'IPBRICK-D'

7.1.2 USB pen formatting

To check if a pen is formatted in NTFS or FAT32 simply do a right click over the pen's icon and select Properties

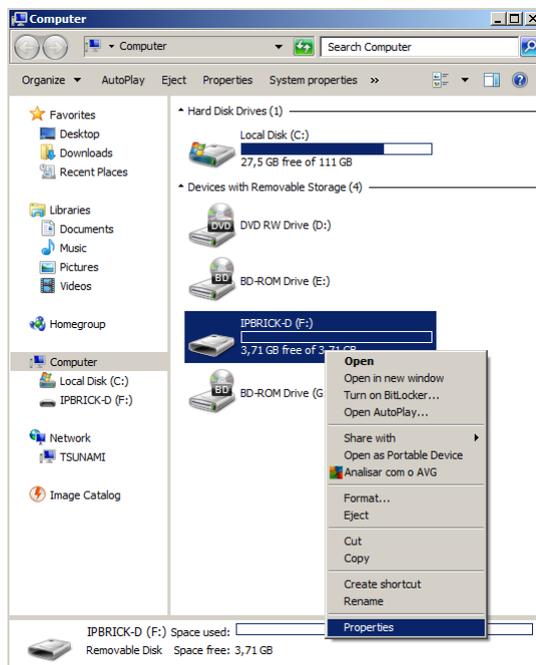


Figure 7.3: USB pen Properties

Check if it states FAT32 (no formatting necessary) or NTFS (you will have to format the pen to FAT32) in File System.

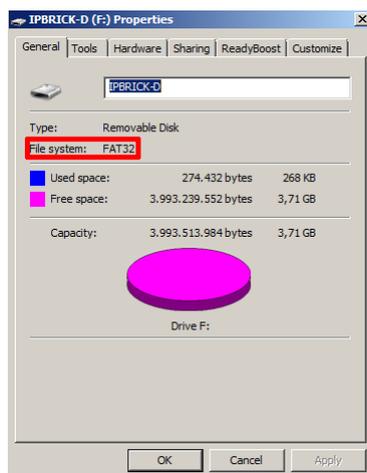


Figure 7.4: USB pen Properties - File System

If it states NTFS you'll have to format the pen drive. To do so, right click on the pen's icon and select Format.

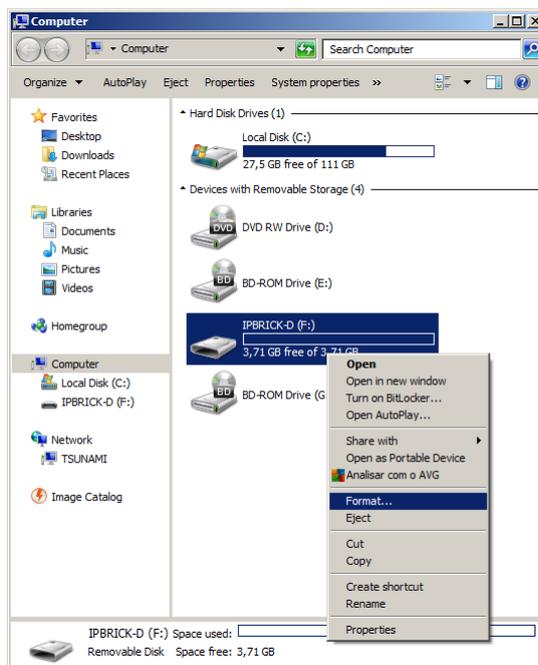


Figure 7.5: USB pen - Format

At the new window select FAT32, check the label (name) and click on Start.

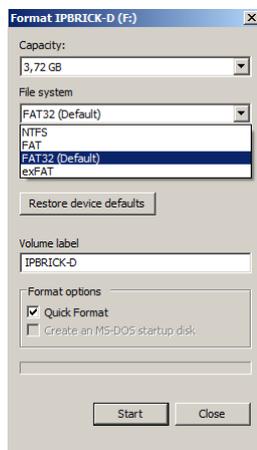


Figure 7.6: USB pen Format Options

Chapter 8

Appendix C - Important Procedures

After installing your IPBRICK it's necessary that you comply with the following procedures described in this Appendix. From altering credentials to changing the address for email alerts, these procedures are crucial if you want to ensure your system's security. IPBRICK has a new Warning Icon on the top right corner of the screen. This icon guides you in these very important first procedures.



Figure 8.1: Warning Icon

This icon will blink, if there are important changes to be made to the system, and if you click on it you will access a new window enumerating the necessary fixes and checks to the IPBRICK configurations.

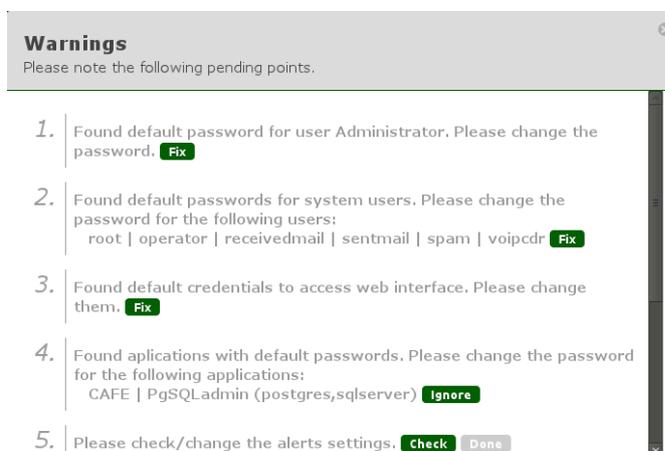


Figure 8.2: Warnings page

Each item in the enumeration offers you chance to alter important settings by clicking on the Fix or Check button.

Usually, the Fix button indicates a more urgent change (e.g: Changing the Administrator's default password change). If you click on it you will be redirected to the page resolving the warning.

Name	Login	Account	Expires in
Administrator	administrator	Local	Not defined

Figure 8.3: User's Management - Administrator

The **Check** button does the exact same thing, redirects you to the page where you need to verify the settings.

4. | Please check/change the alerts settings. **Check** Done

Figure 8.4: Warning - Check button

After checking for problems, you may access the warnings list and click on the **Done** button so that the warning is removed from the list.

4. | Please check/change the alerts settings. Check **Done**

Figure 8.5: Warning - Done Button

Warnings
Please note the following pending points.

- Found default password for user Administrator. Please change the password. **Fix**
- Found default passwords for system users. Please change the password for the following users:
root | operator | receivedmail | sentmail | spam | voipcdr **Fix**
- Found default credentials to access web interface. Please change them. **Fix**
- Please check/change the email for sending system settings. **Check**
Done
- Please check/change the email for sending the databases backups notification. **Check** Done

Figure 8.6: Warning window without the fixed alert

In the following sections we will address each of the necessary configurations displayed on the alerts window.

8.1 Administrator user credentials

At:

IPBrick.I - Users Management - Users List



Figure 8.7: IPBrick.I - Users Management - Users List

You will find the Administrator user.

Users Management » Users List

[Insert](#) | [Mass operations](#) | [Export](#)

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
1 Search List all

1-29 | Total:29

Name	Login	Account	Expires in
Administrator	administrator	Local	Not defined

Figure 8.8: Users List

Click on his name and on the new page click on the Modify link.

Users Management » Administrator

[Back](#) | [Basic Options](#) | [Extra Options](#) | [Modify](#)

User definitions	
Name:	Administrator
Login:	administrator
UidNumber:	10000
Server:	Local
Work Area:	Work Area 1
Quota:	Unlimited

Figure 8.9: Administrator user

Alter the settings and the click on the Modify button.

The screenshot shows a web interface for modifying user settings. The breadcrumb path is "Users Management » Administrator » Modify". There are links for "Back", "Basic Options", and "Extra Options". The main content area is titled "User definitions" and contains a form with the following fields:

Name:	Administrator
Login:	administrator
UidNumber:	10000
Server:	Local
Work Areas:	Work Area 1
Password:	*****
Retype Password:	*****
Quota:	<input type="text"/> MB

A "Modify" button is located at the bottom center of the form.

Figure 8.10: Administrator user modify page

8.2 System users credentials

To alter System User's passwords access:

Advanced Configurations > System > System Users

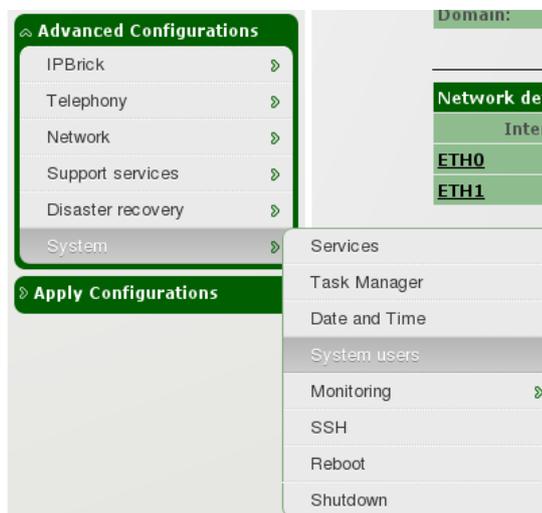


Figure 8.11: Advanced Configurations - System - System Users

At the new page, you will notice that the user name and login for the system user's are displayed on a list.

System users » Users List

Name	Login
<u>root</u>	root
<u>operator</u>	operator
<u>Received Mail</u>	receivedmail
<u>Sent Mail</u>	sentmail
<u>kaspersky</u>	kaspersky
<u>spam</u>	spam
<u>VoIPCDR</u>	voipcdr

Figure 8.12: System Users List

The procedure to alter a password is identical for all.

As an example we will alter the root password. Click on the underlined name, in this case 'root', the new page will display the name and login, click on the Modify link.

System users » User » root

User definitions	
Name:	root
Login:	root

[Back](#) [Modify](#)

Figure 8.13: System Users root modify link

At the new page, type the old password and then type and retype the new one to confirm it. Click on the Modify button to enforce the new settings.

System users » Modify » root

User definitions	
Name:	<input type="text" value="root"/>
Login:	<input type="text" value="root"/>
Old password:	<input type="password" value="••••••••"/>
Password:	<input type="password" value="••••••••"/>
Retype Password:	<input type="password" value="••••~•••"/>

Figure 8.14: Altering the root password

8.3 System administrator credentials

After logging in to IPBRICK's web interface, access:

Advanced Configurations > Web Access



Figure 8.15: Advanced Configurations - Web Access

At the new window, click on the first Modify link.

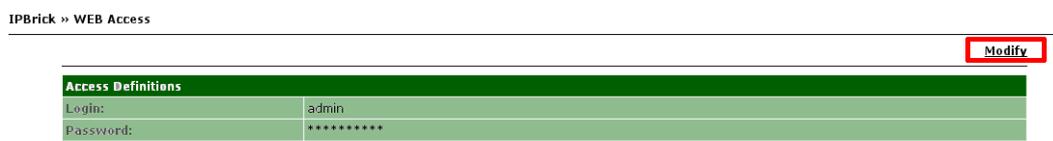


Figure 8.16: Web Access Modify link

Alter the credentials, from the default values to the new ones (don't forget to re-type the new password) and click on the Modify button.

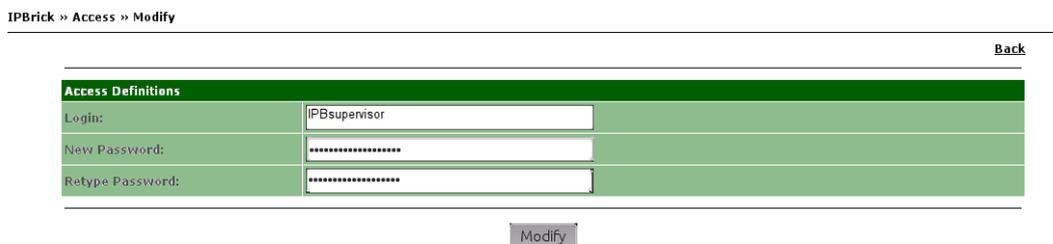


Figure 8.17: Modifying the Administrator's credentials

8.4 CAFE and PostGresSQL credentials

Please consult Section 4.3 . Logins and Passwords of this document.

8.5 Email alerts definition

IPBRICK sends the system's administrator email alerts when the partition is exceeded and if it encounters any problems with services.

If you don't have a habit of checking your IPBRICK administrator's email, you may change the email address to another one more frequently visited.

Access:

Advanced Configurations
 System
 Monitoring
 Alerts

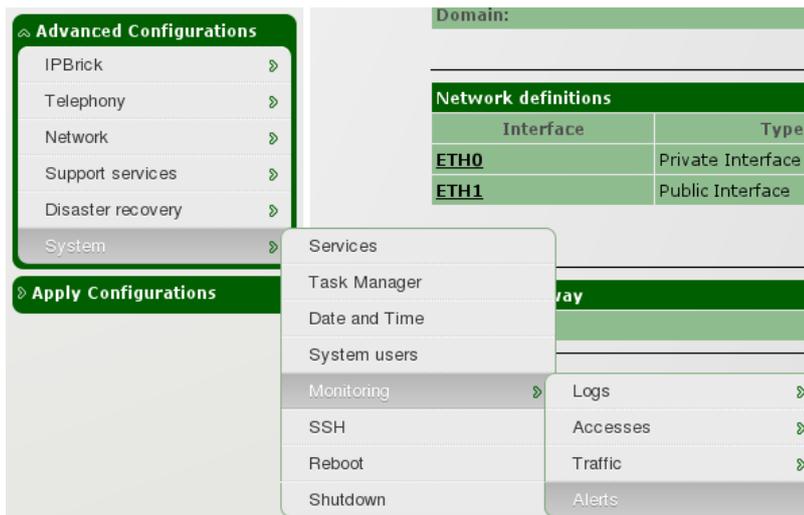


Figure 8.18: Alerts option

At the new page you can see the source address (the one that will send the alert emails) and the destination address (the one that will receive such alerts), by default the recipient is the system’s administrator IPBRICK email. Click on the **Modify** link.

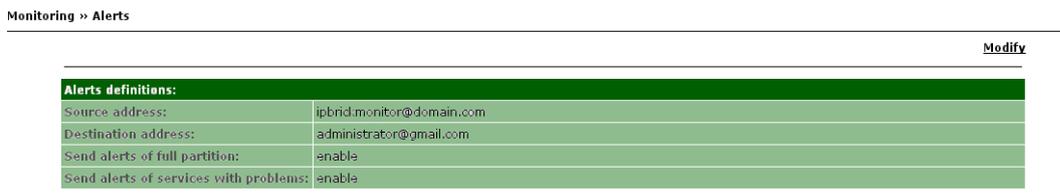


Figure 8.19: Modify link

Just type at Destination Address the email you more frequently visit. It’s also possible to disable the full partition and services with problems alerts (b default, both alerts are **Enabled**). Click on the **Modify** button to alter the settings.

As always, click on the **Modify** link. A new page will appear where you will be able to alter the Source address, Destination address, Message subject and Message body of the email containing the system’s definitions. Click on the **Modify** button to alter the settings.

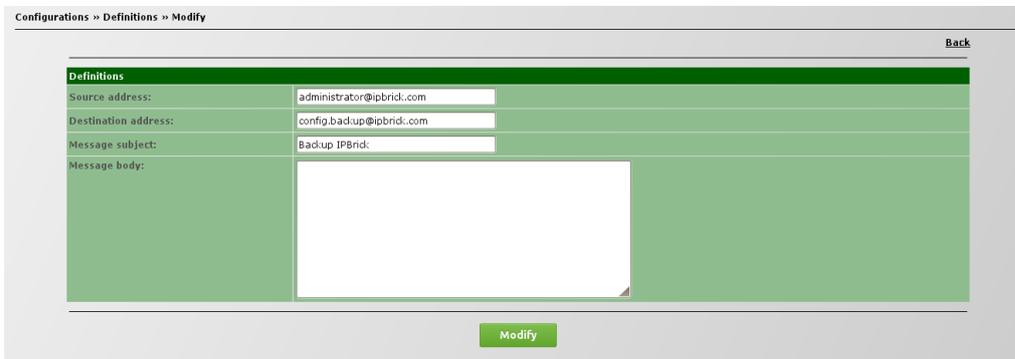


Figure 8.24: Modify page

8.7 Email for sending the databases backups notification

This setting is available at:



Figure 8.25: Advanced Configurations - Disaster Recovery - Applications - Databases

Click the on the **Definitions** link.



Figure 8.26: Definitions link

This time, the email configured handles the database backup notifications. It is critical that you periodically check this email in order to verify the backup procedure.

The screenshot shows a web interface with the breadcrumb 'Configurations » Replace'. At the top right, there are links for 'Back' and 'Modify'. Below this is a table titled 'Databases backups settings' with the following data:

Notify from address:	backupdb@ipbrick.com
Administrator address:	administrator@ipbrick.com
Login to backup PostgreSQL databases:	<input checked="" type="radio"/> postgres

Figure 8.27: Databases backups settings

Click on the **Modify** link in order to present a new page.

The screenshot shows the 'Modify' page for 'Databases backups settings'. It includes a 'Back' link at the top right. The settings are now in a form with input fields:

Notify from address:	<input type="text" value="backupdb@ipbrick.com"/>
Administrator address:	<input type="text" value="administrator@ipbrick.com"/>
Login to backup PostgreSQL databases:	<input type="text" value="postgres"/>
Password to backup PostgreSQL databases:	<input type="password"/>

At the bottom center, there is a green 'Modify' button.

Figure 8.28: Databases backups settings modify page

Alter the Notify from address, Administrator address, Login and Password to backup PostgreSQL databases.

When you have finished, click on the **Modify** button

8.8 Services you want to provide on this server

This setting is available at:



Figure 8.29: Advanced Configurations - System - Services

The page will display the list of all available services in IPBRICK.

Services				Modify
State	Start	Services	Description	
Enabled	Automatic	E-mail	Mail Server	
Enabled	Automatic	DHCP	Dynamic IP configuration	
Enabled	Automatic	DNS	DNS Server	
Enabled	Automatic	Firewall	Firewall Server	
Enabled	Automatic	FTP	FTP Server	
Enabled	Automatic	IMAP	IMAP Server	
Enabled	Automatic	IMAPS	IMAP Server over SSL	
Enabled	Automatic	NFS	File system server	
Enabled	Automatic	POP3	POP3 Server	
Enabled	Automatic	POP3S	POP3 Server over SSL	
Enabled	Automatic	PostgreSQL	Database Server	
Enabled	Automatic	Proxy	Pages cache	
Enabled	Automatic	Samba	File Server	
Enabled	Automatic	SSH	SSH Server	
Enabled	Automatic	VoIP	Voice over IP service	
Enabled	Automatic	VPN - PPTP	VPN - PPTP Server	
Enabled	Automatic	WebRTC	Real-Time Communications Service	

Figure 8.30: Services

As always, click on the **Modify** link to alter the State and way of starting the service.

In **State** you may choose Enable or Disable.

System » Services » Modify				Back
State	Start	Services	Description	
Disabled	Manual	Get mail from ISP	Service that allows to get mail from ISP	
Disabled	Manual	Callmanager	IP Phones monitoring service	

Figure 8.31: State

In **Start** you may choose Automatic or Manual.

System » Services » Modify				Back
State	Start	Services	Description	
Disabled	Manual	Get mail from ISP	Service that allows to get mail from ISP	
Disabled	Manual	Callmanager	IP Phones monitoring service	

Figure 8.32: Start

When you have finished scroll down the page to access the **Update** button.



Figure 8.33: Update button