

PORTA Billing 100°



Installation Guide

www.portaone.com

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Preface

This document provides a general overview of the PortaBilling100 Customer Care Staff web interface.

Where to Get the Latest Version of this Guide

The hard copy of this guide is updated at major releases only, and does not always contain the latest material on enhancements occurring inbetween minor releases. The online copy of this guide is always up-todate, integrating the latest changes to the product. You can access the latest copy of this guide at:

www.portaone.com/solutions/billing/docs.

Conventions

This publication uses the following conventions:

- Commands and keywords are in **boldface**
- Terminal sessions, console screens, or system file names are displayed in fixed width font

Caution means 'reader beware'. You are capable of doing something that might result in program malfunction or loss of data.

NOTE: Means *reader take note*. Notes contain helpful suggestions or references to materials not contained in this manual.

Timesaver means the described action saves time. You can save time by performing the action described in the paragraph.

Tips Means the following information might help you solve a problem.



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1 Introduction

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PortaBilling runs on most modern UNIX operating systems (FreeBSD, Linux, Sun Solaris, etc.), assuming they are equipped with such basic features as an ANSI C compiler. However, it might be difficult for an inexperienced system administrator to install and configure the operation system in a way that suits all the requirements and provides the best performance. Installing all the pre-requisite software (libraries, Perl modules, MySQL server) might also be a time-consuming task.

The PortaBilling JumpStart installation CD provides a quick and foolproof way to perform the complete server installation from scratch in less than 15 minutes! It contains installation media for FreeBSD 4.9, with all the necessary packages, as well as PortaBilling itself.

The installation wizard uses a text-mode GUI. Use arrow keys to change your selection, "**Tab**" to move between the fields and "**Enter**" to make a choice.

Hardware and Software Requirements

Recommended configuration:

- Pentium 4 CPU 2.8 GHz
- Motherboard with 533MHz/800MHz system bus support
- 1 GB of RAM

Make sure that your servers are installed and equipped with all the required hardware, namely:

- Network card
- CD-ROM (in the case of the IDE CD-ROM, we recommend that you connect it as a slave on the secondary IDE channel)
- Video adapter/monitor/keyboard (required only during the installation process)
- At least one disk drive
- USB slot (on the master server)

Please check that other hardware installed on your server (such as network adapter, RAID controller, etc) is supported by the FreeBSD. You can check this at the FreeBSD website http://www.freebsd.org.

During installation you will be prompted for your network configuration parameters. Please decide on this matter before beginning installation, consulting your network administrator if necessary. While it is possible that you will have to perform installation before the network is available (in your office, for example, while the servers will be located in a server hosting center), you will still need to enter the correct data. Please have the following ready:

- Planned hostnames and IP addresses of the master and slave servers
- Subnet mask and address of the default gateway
- Address of your DNS server

If a hardware RAID controller is available in your system, configure the RAID array. Recommended configurations (depending on the number of hard drives in the system) are as follows:

- 2 disks RAID (mirroring)
- 3 disks RAID 1 (mirroring) on the first two disks, with the third one left as a hot spare
- 4 disks RAID 1+0 (mirroring + striping)
- More than 4 disks RAID 1+0 (mirroring + striping) on the first four disks, with the others left as a hot spare

2. Installation Process

Pre-install

Place the USB dongle key you received with your PortaBilling installation CD into the USB slot on your master server.

Step 1: Power-Up, Boot Order Setup

Power-up the computer which you plan to use as a server. Enter the BIOS setup, making sure that the CD-ROM is first in the list of boot devices. If you are installing a dual-server configuration, start your installation with the master server.

			Phoen	ixBIOS	Setup U	tility	
Ma	in	Advanced	Secur i	ty	Power	Boot	Exit
	ATAPT	CD-ROM Dri	110				Item Specific Help
		ble Device					Keys used to view or configure devices: <enter> expands or collapses devices with a + or - <ctrl+enter> expands all <shift +="" 1=""> enables or</shift></ctrl+enter></enter>
							disables a device. <+> and <-> moves the device up or down.
							<n> May move removable device between Hard Disk or Removable Disk (d) Removable Disk</n>
							<pre><d> Remove a device that is not installed.</d></pre>
F1 Esc	Help Exit			-/+ Enter	Change Select		F9 Setup Defaults enu F10 Save and Exit

Note: this image is only an example. The BIOS on your system might look different.

Save your changes and exit.

Step 2: Insert the CD-ROM

While rebooting the system, insert the PortaBilling installation CD in the CD-ROM drive. If you do not insert it quickly enough and get a "no operation system" error (or a previously installed operating system starts

its boot-up process), press the "Reset" button and make sure that you are booting from the CD.

Step 3: Start of Installation

You will know that JumpStart installation has started if you see a screen similar to the one below:

Uncompressing done	
BTX loader 1.00 BTX ve	
Console: internal video/ BIOS drive A: is disk0	'keyboard
BIOS drive B: is disk1	
BIOS drive C: is disk2	
BIOS 638kB/31744kB avai	lable memory
FreeBSD∕i386 bootstrap	Inader, Revision A.8
	наll.сом, Tue Oct 8 00:52:30 PDT 2002)
∕kernel text=0x2833b1 <u>-</u>	

After the installation kernel is loaded, you will see the following menu:

Kernel Configuration Menu
Skip kernel configuration and continue with installation Start kernel configuration in full-screen visual mode Start kernel configuration in CLI mode
Here you have the chance to go into kernel configuration mode, making any changes which may be necessary to properly adjust the kernel to match your hardware configuration.
If you are installing FreeBSD for the first time, select Visual Mode (press Down-Arrow then ENTER).
If you need to do more specialized kernel configuration and are an experienced FreeBSD user, select CLI mode.
If you are <mark>certain</mark> that you do not need to configure your kernel then simply press ENTER or Q now.

Choose the first item in the menu and press "Enter" to go on.

Step 4: Welcome Screen

Next, the installation process starts. First you will see the PortaBilling welcome screen:



Press "Enter" to continue to disk partitioning.

Step 5: Disk Partitioning, Overview

Now you must allocate the hard drive partitions where FreeBSD and PortaBilling will be installed. If you only have one hard drive in your system, or your available disks are configured as a single volume array, then skip the next step and go directly to **0**.

Step 6: Disk Partitioning, Choose Disk

If you have more than one disk in your system, you will have to choose which one you would like to create the FreeBSD partitions on. If in doubt, choose the first disk on the list.



Step 7: Disk Partitioning, Create Partition

Now you need to create the partition, that is, the continuous area on the disk used to store all the operating system data. With the "**unused**" entry highlighted, press "**C**" to create a new partition.

	metry: 8322						
lffset	Size(ST)) End	N аме F	Туре	Desc	Subtype	Flags
	0 8388576	6 8388575		6	unused	0	
he foll	owing command	ls are supporte	ed (in upp	er or 1	lower case)	:	
	0	**					'DD' mod
= Use] = Dele	Entire Disk te Slice	G = set Drive Z = Toggle Si	e Geometry ze Units	- C = S =	Create Sli Set Bootab	.ce F =	
= Use] = Dele	Entire Disk te Slice	G = set Drive	e Geometry ze Units	- C = S =	Create Sli Set Bootab	.ce F =	
= Use] = Dele	Entire Disk te Slice	G = set Drive Z = Toggle Si	e Geometry ze Units	- C = S =	Create Sli Set Bootab	.ce F =	
= Use = Dele ' = Chang	Entire Disk te Slice ge Type	G = set Drive Z = Toggle Si	e Geometry ze Units Changes	0 C = S = Q =	Create Sli Set Bootab Finish	.ce F =	

When prompted for the partition size, simply press "**Enter**"; this will allocate all the available space on the disk for FreeBSD. Press "**Q**" to exit this configuration screen.

ffset	Size(ST) End	Nаме Р	Туре	Desc	Subtype	Flags
	0 838857	6 8388575		6	unused	0	Ĥ
		Va 1ı	ie Requir	ed		7	
		pecify the size d a trailing 'M'					
		5	TOL, Wed	auytes	(e.g. 20m)		
	8388576					_	
he follo	ы	<mark>E OK 1</mark>	C-	ancel			
		G = set Drive					'DD' Mo
		Z = Toggle Siz U = Undo All (Set Bootab Finish	le ¦=	Wizard
	e ivue						
= Delet = Chang	e Tyhe						

When asked about the partition type, press "**Enter**", so that the partition is created with the default FreeBSD type.

Disk na DISK Ge	ме: <mark>ad0</mark> омetry: 8322 cyls/	16 heads/	/63 sect	ors = 838		{ Partition tors (4095)	
Offset	Size(ST)	End	Nаме	РТуре	Desc	Subtype	Flags
	Enter type of part	ition to	create:	luireu —			
	Pressing Enter wil slice (type 165). DOS partition or 1	You can	choose	other typ	es, 6 fo	a a	
The fo	Note: If you choo be formatted or ot for you to use and and use the partit	herwise p ther tool	prepared	l, it will	simply	reserve spa	ace
A = Us D = De	165						Mode
D - De T - Ch		E OK	1	<mark>C</mark> ance l			ird M.
Use F1	or ? to get more he	lp, arro	w keys 1	o select.			
Slice i	s already unused!						



After the partition has been created, make sure it is marked as a bootable partition.

To do this, select the new partition using the cursor movement keys, and then press "**S**". Press "**Q**" to exit this configuration screen.

Step 8: Disk Partitioning, Boot Manager

The FreeBSD boot manager will let you boot one of the multiple operating systems installed on your server. Choose "Standard" if you are not planning to run anything other than FreeBSD and PortaBilling on your server.

Install Boot Honoger for drive add? FreeBSD comes with a boot selector that allows you to easily select between FreeBSD and any other operating systems on your machine at boot time. If you have more than one drive and want to boot from the second one, the boot selector will also make it possible to do so (limitations in the PC BIOS usually prevent this otherwise). If you do not want a boot selector, or wish to replace an existing one, select "standard". If you would prefer your Master Boot Record to remain untouched then select "None".
NOTE: PC-DOS users will almost certainly require "None"!
BootMgrInstall the FreeBSD Boot ManagerStandardInstall a standard MBR (no boot Manager)NoneLeave the Master Boot Record untouched
Cancel L Press F1 to read about drive setup 1

Step 9: Disk Partitioning, Slice Layout

You must create areas for holding different file systems within the FreeBSD partition. These areas are called slices.

FreeBSD Disklabel Editor									
Disk: ad0	Pa	rtition	паме:	adØs1	Free:	8388513	blocks	(4095MB)
Part	Mount			lewfs	Part	Mount		Size	
Che follow C = Create						or lower	case):		
N = Newfs	Opts	Q = Fin	ish	S = To	ggle [°] Sof†				
r = Toggle	Newis	U = Und	0	H = Hu	to Defau.	Its R	= Delei	te+Merge	
Use F1 or	? to get	more h	elp, a	rrow k	eys to se	elect.			

Press "**A**" to use the install wizard default layout. If you want a custom slice layout, the recommended PortaBilling slice set-up is:

- / (root) filesystem 256MB
- swap equal to the amount of RAM
- /usr filesystem 2GB
- /var filesystem the rest of the available space

When finished, you should see something similar to the following screen:

lisk: ad	0 Par	tition name	e: adØs	s1	Free:	0 blocks	(0MB)		
Part		Size							Newfs
 ad0s1a		256MB							
adØs1b	ѕмар	512MB	SWAP						
adØs1e	∕usr	1024MB	UFS+S	Y					
adØs1f	∕var	2303MB	UFS+S	Y					
C = Crea I = Newf	оwing сомма te D s Opts Q	= Delete = Finish	M = N S = 1	1οι Γοι	int pt. jgle Sof [.]	tUpdates			
T = Togg	le Newfs U				to Defau eys to se		= Delete	+Merge	9

Press "**Q**" to proceed with the installation.

Step 10: Choose the Installation Type

Next you need to choose the installation type. This will determine which packages will be installed on this host. If you are installing a dual-server configuration, it is recommended that you install the master server first.



Step 11: Start of Installation

Your confirmation is required before the disk layout is changed and the partitions reformatted. Press "Enter" to proceed.



During installation you will see screens similar to the following:



Step 12: Network Configuration, Choose the Network Interface

Choose the primary network interface for your server, that is, the interface through which the server will communicate with the rest of the Internet, including your VoIP gateways or RADIUS servers. Your Ethernet network adapter should be on top of the list. If not, this could mean the adapter you have in your server is not supported by FreeBSD.



Step 13: Network Configuration, Parameters

Now you need to enter the network parameters for your server. Press "Enter" when done.

Master server installation

For the master server, the following dialog will appear:

Host:	Network Configuration Domain:
portal.smartcall.com	SMartcall.com
IPv4 Gateway:	Name server:
1.1.1.1	1.1.2.1
IPv4 Address o	of the slave host:
1.1.1.101	
Configurat IPv4 Address:	tion for Interface Inc0 Netmask:
1.1.1.100	255.255.255.0
081	
this if you are happy r	with these settings

Slave server installation

Here the dialogs are the same, but you need to enter the IP address of the master server:

Host:	N	etwork Configuration Domain:	1
porta2.smartcall.	сом	SMartcall.com	
IPv4 Gateway:		Name server:	
1.1.1.1		1.1.1.2	
IPv4 Addr	ess of the	master host:	
1.1.1.100			
Confi IPv4 Addr		or Interface Inc0 Netmask:	
1.1.1.101		255.255.255.0	
	0	CANCEL	
this if you are ha	ppy with t	hese settings	

Single-host installation

The dialog for a single-host installation is similar to the ones above, except that you do not need to enter information for master/slave server addresses.

Step 14: Add User Accounts into the System

After the required packages have been installed, you can begin performing the configuration tasks. First you will be required to add user accounts to the system. Your staff may use these accounts to log in to the system. (It is not recommended to use the **root** account when logging in remotely.) If you plan to add users, choose the first menu item and press "**Enter**". Once you have finished the user creation process, press "**Tab**" once (to move to the "**Cancel**" button) and then press "**Enter**".



The dialog for creating a new user is shown below:

	User and Group Management Add a new user
	Login ID: UID: Group: Password: john 1003 0 ******
	Full name: Member groups:
	John Doe, Smart Call admin
	Home directory: Login shell:
	/home/john /bin/sh
	CANCEL
[Select	this if you are happy with these settings

Step 15: Time Zone Configuration

Having your clock adjusted properly and setting up a time zone correctly are essential for accurate billing. Normally, people choose the time zone where their server is physically located, or which is local to the majority of the system administrators.

First of all, choose whether you want your server clock to be set according to UTC or local time. We recommend using local time, in which case you should choose "**No**" here.



Next, choose which region you are in:



And then choose your country:



If there is more than one time zone in the given country, you will have to specify the correct one:

Canada Time Zones
Select a zone which observes the same time as your locality.
7 Eastern Time - Thunder Bay, Ontario
8 Eastern Standard Time - Pangnirtung, Nunavut
9 Eastern Standard Time - east Nunavut
18 Eastern Standard Time - central Nunavut
11 Central Time - Manitoba & west Ontario
12 Central Time - Rainy River & Fort Frances, Ontario
15 Central Time - west Nunavut
14 Central Standard Time - Saskatchewan - most locations
15 Central Standard Time - Saskatchewan - midwest
15 Mountain Time - Alberta, east British Columbia & west Saskatchewan
17 Mountain Time - central Northwest Territories
18 Mountain Time - west Northwest Territories
19 Mountain Standard Time - Dawson Creek & Fort Saint John, British Col
20 Pacific Time - west British Columbia
21 Pacific Time - south Yukon
22 Pacific Time - north Yukon
Cancel
L

Please check the suggested time zone, and confirm:



NOTE: Always choose the same time zone when installing the master and slave servers.

Step 16: Setting-up Root Password

Choosing a super user password is very important, as you will need it to perform system administration or system recovery. Choose a password that is difficult to guess or crack.





Step 17: Preparing to Reboot

Installation is now finished. Press "**Enter**" when you reach the following screen. Once the system begins its reboot process, remove the installation CD from the CD-ROM. Do not forget to enter BIOS again and change the priority of boot devices so that the hard drive will now be the first boot device attempted. (This ensures faster reboot when recycling the server.)



Step 18: Check that the System Reboots to a Normal State

It is good idea to make sure that the system is in a stable state, and that it returns to normal operations on reboot without the need for any intervention, especially if no keyboard or other peripherals are to be attached. The screen should look like this after a normal reboot:

```
Your identification has been saved in /etc/ssh/ssh_host_rsa_key.

Your public key has been saved in /etc/ssh/ssh_host_rsa_key.pub.

The key fingerprint is:

92:de:74:f8:78:8e:e0:c4:e9:af:66:65:87:2a:9e:1e root@porta1.smartcall.com

creating ssh2 DSA host key

Generating public/private dsa key pair.

Your identification has been saved in /etc/ssh/ssh_host_dsa_key.

Your public key has been saved in /etc/ssh/ssh_host_dsa_key.pub.

The key fingerprint is:

df:20:fa:94:e3:16:7f:be:76:9d:6f:a7:37:06:02:9d root@porta1.smartcall.com

.

ELF ldconfig path: /usr/lib /usr/lib/compat /usr/local/lib

a.out ldconfig path: /usr/lib/aout /usr/lib/compat/aout

Starting standard daeMons: inetd cron sshd usbd.

Initial rc.i386 initialization:.

Configuring syscons: blanktime.

Additional ABI support:.

Local package initialization: radiusd Mysqld radcheck.pl.

Additional TCP options:.

Wed Nov 13 01:03:11 PST 2002

FreeBSD/i386 (porta1.smartcall.com) (ttyv0)
```

Press Ctrl + Alt +Del if you need to reboot.

Step 19: Preparing the System for Transportation (Optional)

If you need to transport the system to another location (e.g. hosting center) or otherwise power down the system safely, proceed as follows:

- Wait until the system finishes booting
- Log in as root
- Type shutdown -p now
- Wait until either the system powers down on its own or a message reading "The operating system has halted" appears, and then power off the server.