

How to run a public-facing service for 27 years (and counting)

presentation by: Marcos Marado

About me

Marcos Marado, born in 1982. Systems Engineer, Musician, Record Label owner, Free Software advocate, Virtual World God.

I can always and consistently be found in Selva Virtual, but you can also try:

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- github:
<https://github.com/marado>
- twitter: @mind_booster
- telegram: @marcosmarado



In the begining...

- Universidade de Lisboa was the first Portuguese organization with an Internet connection
- Universidade do Minho, the second, had a 64Kb IP/X.25 line to France
- In 1990, PUUG (Portuguese Unix Users Group) starts the comercialization of Internet connections in Portugal
- In 1992, FCCN starts the registration of .pt domains
- LNEC (Laboratório Nacional de Engenharia Civil) runs the first web server in Portugal, also in 1992

Portugal Virtual

- In 1991, LuPa and Goth, who worked on LNEC, found DS9, a text based virtual world hosted in USA
- Things were a bit different in 1991...
 - establishing and maintaining a TCP connection to the USA isn't easy, specially taking account the latency
 - the Internet is the world of academics and researchers, "online" from 9 to 5
 - knowledge and confort with the English language is...less than now
- In 1992's Summer, DS9 administrators give their code to their Portuguese friends, so a Portuguese version can be created
- Cyber Eden (later renamed to Portugal Virtual) is inaugurated in the 1st of October 1992

From Portugal Virtual to Selva Virtual

- the boom of talkers
- talkers in universities
- Selva is created in 1998
- From Selva to Selva V
- The development of Portugal Virtual
- Selva and Portugal Virtual merge into Selva Virtual
- Selva Virtual, the last talker, still evolves

Portugal – the boom of talkers



[[Talkers Portugueses](#) | [Talkers Estrangeiros](#)]

Talkers Portugueses

CITAL UAveiro em zeus.ci.UA.pt 6969	Lost Eden em ubisc.UBI.pt 1414
CyberCiist em ubisc.UBI.pt 5555	Amazonia em ubisc.UBI.pt 8000
Talho em ubisc.UBI.pt 7000	UBI Land em ubisc.UBI.pt 8888
Virtual Democracy em ubisc.UBI.pt 6969	Baco em baco.UC.pt:3000
Cyber Eden 2 em baco.UC.pt:5000	Mala de Cartão em dragao.mat.UC.pt 3000
Europa em europa.dei.UC.pt 5000	CyberISR em orion.dee.UC.pt 3000
Portugal Virtual em ciunix.UC.pt 6969	Portugal Virtual em ciunix.UC.pt 6969
Skull Eden em eureka.UC.pt 3000	Virtual Praxis em ciunix.UC.pt 3333
Egogo em ciunix.UC.pt 5000	Talho em ciunix.UC.pt 7000
Lost Hell em maxwell.EPPET.pt 6666	Nuts City em maxwell.EPPET.pt 1111
The Nuts City em maxwell.EPPET.pt 1111	Wild Sex em maxwell.EPPET.pt 1850
Paradise Hotel em maxwell.EPPET.pt 6969	The Playboy Talker em maxwell.EPPET.pt 9876
PC Bocas Bar em maxwell.EPPET.pt 9999	Moosaic em moo.di.UMINHO.pt 7777
Moovieland em moo.di.UMINHO.pt 6969	Porto em crazy.fe.UP.pt
Portugal dos Viciados em crazy.fe.UP.pt 6969	Atlantis Moo em naomi.fe.UP.pt 7777
Esquadra Talker em tom.fe.UP.pt 9000	Eniac Talker em eniac.INESC.pt 3000
Sagres em sagres.INESC.pt 3000	Lost Eden em alfa.IST.UTL.pt 1414
PTUmiland em ial.UTAD.pt 5000	

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Portugal – talkers in universities

URBI et ORBI - Jornal On-line da UBI, da Covilhã, da Região e do Resto

Primeira UBI Covilhã Região em ORBITa Cultura Desporto Agenda



Os talkers e o IRC ganham cada vez mais adeptos

Alunos da UBI nos Talkers e no IRC

Engate cibernético:

You've got mail à portuguesa

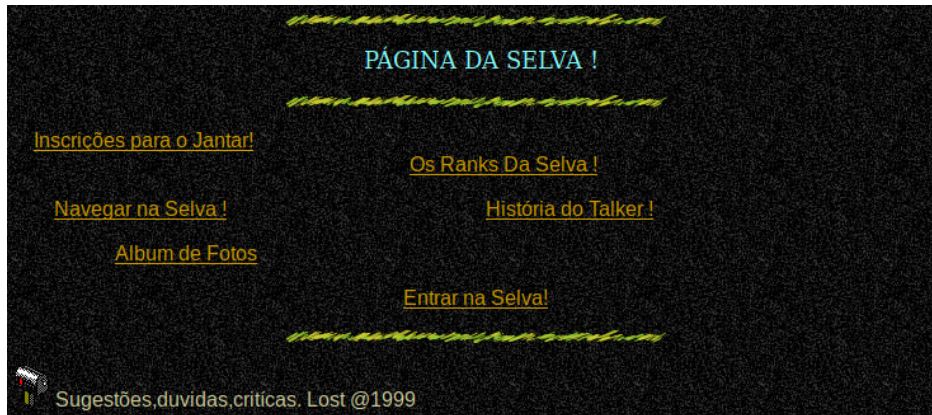
Amados por uns e desprezados por outros os canais de IRC e os endereços de Talkers da Telnet vão ganhando cada vez mais adeptos dentro da Universidade da Beira Interior e, apesar da função que cada utilizador lhes atribui, todos lhe reconhecem um carácter quer lúdico quer formativo quer psicológico.

Há pouco tempo estreou nos cinemas portugueses um filme de Nora Ephron com Meg Ryan e Tom Hanks nos principais papéis. "Você tem correio" - assim era a tradução de uma frase que adquire muito

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Portugal – Selva is created in 1998



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Let's try it out!

```
marado : telnet — Konsole
File Edit View Bookmarks Settings Help
marado@dogfood:~$ telnet -z ssl selva.groque.org 7777
Trying 95.95.221.114...
SSL: Server has a self-signed certificate
SSL: unknown Issuer: /C=PT/ST=Portugal/O=Selva Virtual/emailAddress=mindboosternoori@gmail.com
Connected to selva.groque.org.
Escape character is '^]'.

Selva Virtual

[ O primeiro e ainda existente Mundo Virtual Português... ]

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Formas de chegar 'a Selva Virtual:

Web: https://selva.groque.org/

Telnet: telnet selva.groque.org 8888
        telnet portugal-virtual.org 6969

SSL: telnet -z ssl selva.groque.org 7777
     telnet -z ssl portugal-virtual.org 6069
     openssl s_client -host selva.groque.org -port 7777
     openssl s_client -host portugal-virtual.org -port 6069
     gnutls-cli --insecure selva.groque.org:7777
     gnutls-cli --insecure portugal-virtual.org:6069

Telegram: http://t.me/SelvaVirtual_bot
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Give me a name: █
```

The color challenge

Name	FG Code	BG Code	VGA ^[nb 2]	Windows Console ^[nb 3]	Windows PowerShell ^[nb 4]	Windows 10 Console ^[nb 5] PowerShell 6	Terminal.app	PuTTY	mIRC	xterm	X ^[nb 6]	Ubuntu ^[nb 7]
Black	30	40	0,0,0			12,12,12	0,0,0					1,1,1
Red	31	41	170,0,0	128,0,0		197,15,31	194,54,33	187,0,0	127,0,0	205,0,0	255,0,0	222,56,43
Green	32	42	0,170,0	0,128,0		19,161,14	37,188,36	0,187,0	0,147,0	0,205,0	0,255,0	57,181,74
Yellow	33	43	170,85,0 ^[nb 8]	128,128,0	238,237,240	193,156,0	173,173,39	187,187,0	252,127,0	205,205,0	255,255,0	255,199,6
Blue	34	44	0,0,170	0,0,128		0,55,218	73,46,225	0,0,187	0,0,127	0,0,238	0,0,255	0,111,184
Magenta	35	45	170,0,170	128,0,128	1,36,86	136,23,152	211,56,211	187,0,187	156,0,156	205,0,205	255,0,255	118,38,113
Cyan	36	46	0,170,170	0,128,128		58,150,221	51,187,200	0,187,187	0,147,147	0,205,205	0,255,255	44,181,233
White	37	47	170,170,170	192,192,192		204,204,204	203,204,205	187,187,187	210,210,210	229,229,229	255,255,255	204,204,204
Bright Black	90	100	85,85,85	128,128,128		118,118,118	129,131,131	85,85,85	127,127,127	127,127,127		128,128,128
Bright Red	91	101	255,85,85	255,0,0		231,72,86	252,57,31	255,85,85	255,0,0	255,0,0		255,0,0
Bright Green	92	102	85,255,85	0,255,0		22,198,12	49,231,34	85,255,85	0,252,0	0,255,0	144,238,144	0,255,0
Bright Yellow	93	103	255,255,85	255,255,0		249,241,165	234,236,35	255,255,85	255,255,0	255,255,0	255,255,224	255,255,0
Bright Blue	94	104	85,85,255	0,0,255		59,120,255	88,51,255	85,85,255	0,0,252	92,92,255 ^[24]	173,216,230	0,0,255
Bright Magenta	95	105	255,85,255	255,0,255		180,0,158	249,53,248	255,85,255	255,0,255	255,0,255		255,0,255
Bright Cyan	96	106	85,255,255	0,255,255		97,214,214	20,240,240	85,255,255	0,255,255	0,255,255	224,255,255	0,255,255
Bright White	97	107	255,255,255	255,255,255		242,242,242	233,235,235	255,255,255	255,255,255	255,255,255		255,255,255

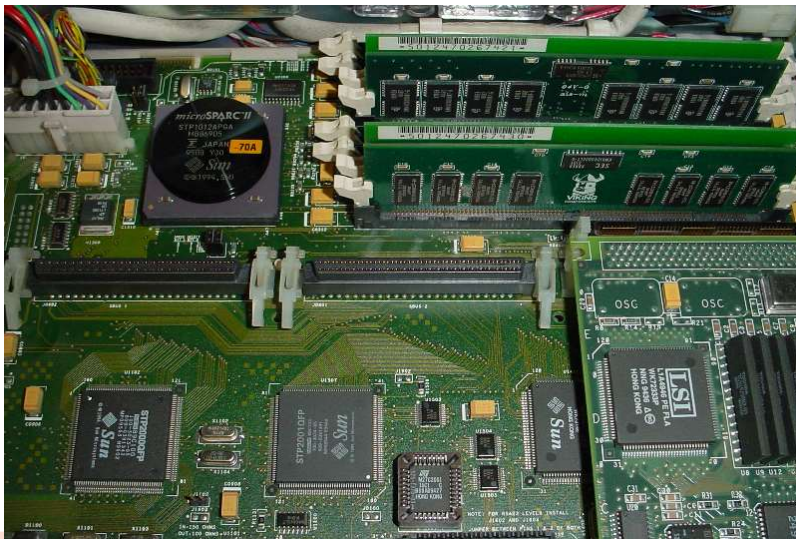
The security challenge

Name	COLOR	VT100	TLS
Atlantis	Yes	No	Yes
Axmud	Yes	Yes	Yes
BeipMU	Yes	No	Yes
BioMUD	Yes	Yes	No
BlowTorch	Yes	No	No
CMUD	Yes	Yes	Yes
GGMUD	Yes	No	No
GMUD	Yes	No	No
Gnome-Mud	Yes	No	No
JamochaMUD	Yes	No	Yes
KBtin	Yes	No	Yes
KildClient	Yes	No	Yes
KMuddy	Yes	No	No
Lyntin	Yes	No	No
mcl	Yes	No	No
muby	Yes	No	No
Mudlet	Yes	No	Yes
MudMagic	Yes	No	No
MUDRammer	Yes	No	Yes
MUSHclient	Yes	No	No
Portal	Yes	No	No
Potato	Yes	No	Yes
Powwow	Yes	Yes	No
Pueblo/UE	Yes	No	No
SimpleMU	Yes	No	No
Soiled	Yes	Yes	No
TinTin++	Yes	Yes	Yes

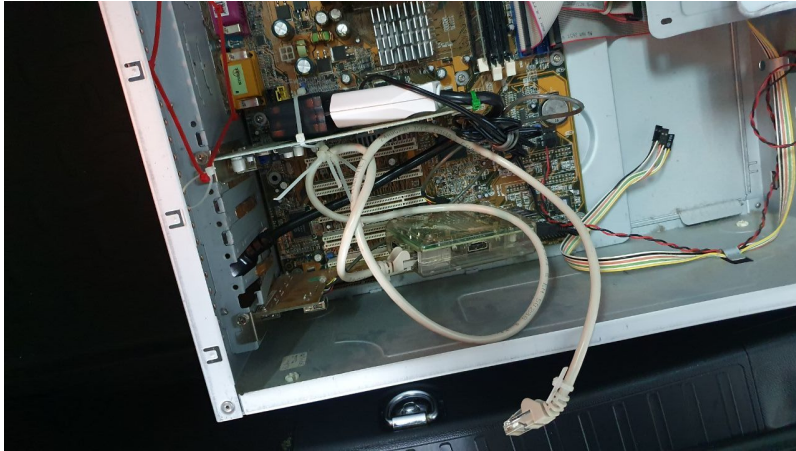
The hosting challenge

- talkers often ran as unauthorized services on university networks
- end of tolerance from university administrators was swift
- hosting alternatives were scarce
- *gratis* hosting alternatives almost impossible to find
- talker.com – the first and largest site dedicated specifically to hosting talker servers – closed in 2009

More info about talker hosting: <http://talkersource.com>



Selva: one picture, two (prior) servers



The websense challenge

- University connections changed in nature
- Internet in users homes became a reality
- The aging of the userbase – connected from work
- Connecting to a telnet service from your work's PC?
- The web client as a solution for all things
 - wide browser support needed
 - allowed technologies
 - allowed ports
 - encrypted communication
- (With a little DNS help)

Current status: hosting



Current status: architecture

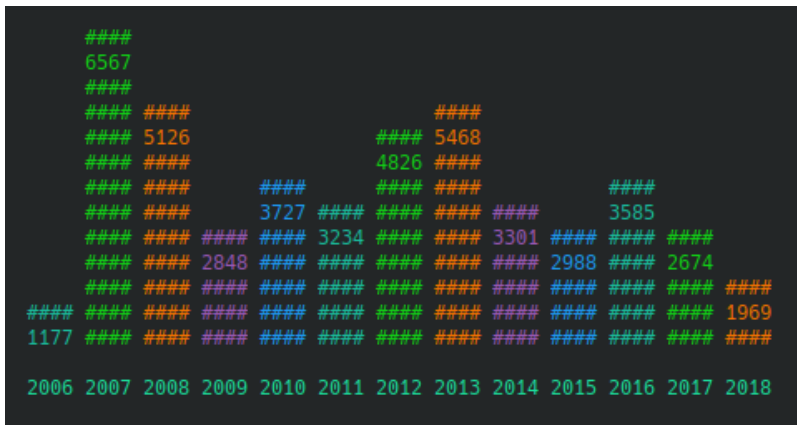
The UNIX way – Do One Thing and Do It Well

- mamnuts – the actual talker server, with a telnet port (8888)
- tcpserver – providing other TCP ports (that redirect to 8888)
- stunnel – providing the telnet over SSL ports
- telnet-ssl – an unicode-friendly telnet client
- shellinabox – webserver that connects to the local telnet port
- midgaard_bot – telegram bot
- nutsbot – base code used by Hattai, the talker bot
 - gawk – used to connect the bot to the utilities it uses
 - hattai-fortune – a script that gives news
 - sdcv – utility for work with dictionaries
 - pyjoke – python jokes, giving Hattai a dubious sense of humor
 - fortune && fortunes – cookies!
- git – code versioning and backups

Current status: top user's online time

6 anos, 10 meses, 7 dias:	Hattai
5 anos, 10 meses, 25 dias:	Mindboosternoort
5 anos, 6 meses, 2 dias:	Koko
3 anos, 4 meses, 17 dias:	Kamikaze
2 anos, 9 meses, 27 dias:	Kafka
2 anos, 2 meses, 29 dias:	Undertaker
2 anos, 2 meses, 8 dias:	Paula
2 anos, 0 meses, 28 dias:	Comillao
1 ano, 11 meses, 7 dias:	Gambuzino
1 ano, 9 meses, 25 dias:	Porky
1 ano, 9 meses, 23 dias:	Bleak
1 ano, 9 meses, 15 dias:	Dissidente
1 ano, 9 meses, 0 dias:	Julius
1 ano, 6 meses, 4 dias:	Kyriu
1 ano, 5 meses, 15 dias:	Astroman
1 ano, 1 meses, 29 dias:	Point
1 ano, 1 meses, 6 dias:	Cfriacas
1 ano, 0 meses, 20 dias:	Zodi
0 anos, 11 meses, 0 dias:	Tycoon
0 anos, 9 meses, 13 dias:	Nuts
0 anos, 8 meses, 10 dias:	Brunomiguel
0 anos, 8 meses, 3 dias:	Holy
0 anos, 8 meses, 0 dias:	Plx
0 anos, 7 meses, 14 dias:	Castor
0 anos, 7 meses, 8 dias:	Nomadwolf
0 anos, 6 meses, 21 dias:	Insomnia
0 anos, 6 meses, 15 dias:	Murphy
0 anos, 5 meses, 24 dias:	Kaos
0 anos, 5 meses, 21 dias:	Equinox
0 anos, 5 meses, 4 dias:	Ohcaptain
0 anos, 4 meses, 15 dias:	Nisroth
0 anos, 4 meses, 14 dias:	Molina
0 anos, 4 meses, 0 dias:	Lost
0 anos, 3 meses, 1 dias:	Trish
0 anos, 2 meses, 26 dias:	Tazmanian
0 anos, 2 meses, 15 dias:	Zezima
0 anos, 2 meses, 4 dias:	Aquarina
0 anos, 2 meses, 0 dias:	Atomic
0 anos, 2 meses, 0 dias:	Afrodite
0 anos, 1 meses, 13 dias:	Drstrangelove

Current status: number of logins per year



Current challenges


Federation: 1988-2018 RIP

From “A SAD ANNOUNCEMENT: FEDERATION 2 WILL BE CLOSING IN A MONTH”:

- security requirements have changed
- HTTPS – we need to sort out a security certificate
- GDPR rules also add complications to any organisation holding customer data
- the problems of having to set everything up again on a new server
- the game’s networking and security needs a thorough overhaul
- we would need to start supporting the new IPV6 addresses
- Alan will be 70 next year, and I’ll be 60, so neither of us has the stamina that we used to

A decentralized future?

Disclaimer about this presentation



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Thank you



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