

CADEY

IRC: WHY IT FAILED

INTRODUCTION

- ▶ Cadey - <https://christine.website/contact>
- ▶ Xe on GitHub: <https://github.com/Xe>
- ▶ Former handles: Niichan, shadowh511, Xena
- ▶ Any opinions expressed in this talk are my own and not the opinions of any group I am affiliated with, including my employer.

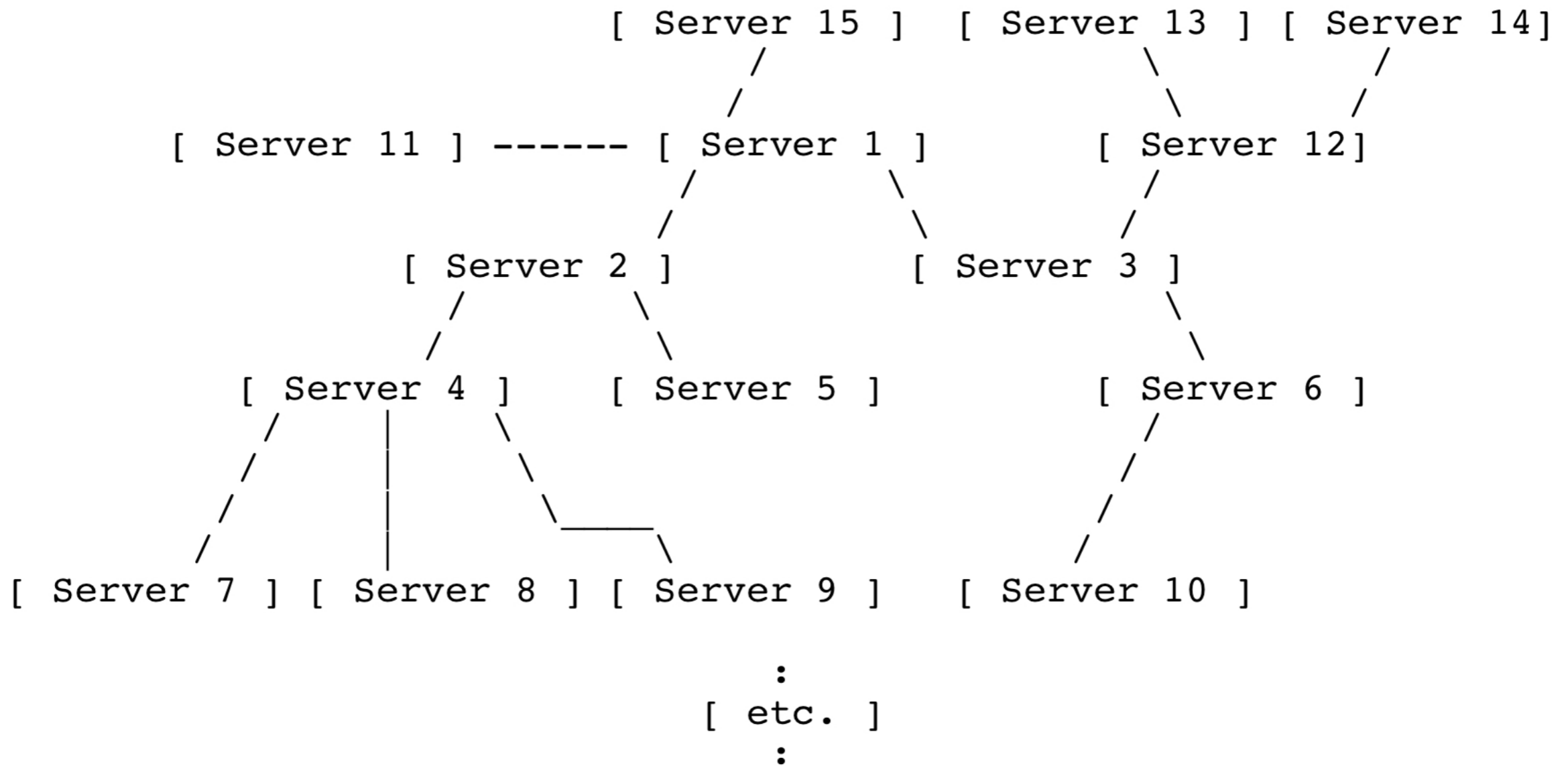
IRC: INTERNET RELAY CHAT

- ▶ RFC 1459
- ▶ Each message is an individual line of text, terminated by `\r\n`
 - ▶ `:source COMMAND par1 par2 parn :extended parameter`
 - ▶ IRCv3 adds tags `@foo=bar`
- ▶ Numerical status codes with error messages
 - ▶ Vendor-dependent

IRC: INTERNET RELAY CHAT

- ▶ Clients joining and parting channels and servers didn't have much state
 - ▶ Server to server links didn't have much state either
 - ▶ ChanServ / NickServ + ircd improvements to hack around it
 - ▶ Users had to manually log in with additional client configuration that differed by network

SERVER TO SERVER LINKING



[Fig. 1. Format of IRC server network]

SERVER TO SERVER LINKING

- ▶ When the connection between any two irc daemons hiccups or resets for any reason, the other side instantly gives up and removes all of the information about all of the clients and channels that server had
 - ▶ The server network "splits" into two networks until it heals.
 - ▶ Netsplit
- ▶ Most IRC daemons have nondeterministic linking protocols

EXAMPLE SESSION (EDITED FOR BREVITY)

```
> NICK NotCadey
> USER Cadey * * :Cadey Orca
< :luna.local 001 NotCadey :Welcome to the Internet Relay Network
NotCadey!
< :luna.local 002 :Your host is luna.local
< :luna.local 005 NETWORK=Seaworld :is my network name
< :luna.local 375 NotCadey :- luna.local message of the day
< :luna.local 372 NotCadey :- Welcome to the home network
< :luna.local 376 NotCadey :End of the MOTD command
< :NotCadey MODE NotCadey +ix
> JOIN #geek
< :NotCadey JOIN #geek
< :luna.local 353 NotCadey = #geek :@NotCadey
< :luna.local 366 NotCadey #geek :End of NAMES list
```

PAIN POINTS

- ▶ Protocol is not easily designed for extension
 - ▶ IRCv3 is a thing, but they are slow - <https://ircv3.github.io>
- ▶ Numerical status codes and messages are inconsistent across vendors
- ▶ Behavior of channel modes and message handling behavior can be inconsistent across vendors
 - ▶ Base channel modes are consistent, anything beyond that is probably not.

PAIN POINTS

- ▶ Client connections require a constantly open TCP session
 - ▶ Doable on Android (if you have a stable connection)
 - ▶ Not doable on iOS period
 - ▶ Bouncers can hack around this, but that doesn't solve the actual problem
- ▶ All the clients look terrible

SUGGESTED USE CASES

- ▶ Private company group chat
 - ▶ Even over airgapped networks
- ▶ Private group chat over Tor Hidden Services
- ▶ Chatbot testing

WHAT IRC FALLING HAS LOST US

```
<Cthon98> hey, if you type in your pw, it will show as stars
<Cthon98> **** see!
<AzureDiamond> hunter2
<AzureDiamond> doesnt look like stars to me
<Cthon98> <AzureDiamond> ****
<Cthon98> thats what I see
<AzureDiamond> oh, really?
<Cthon98> Absolutely
<AzureDiamond> you can go hunter2 my hunter2-ing hunter2
<AzureDiamond> haha, does that look funny to you?
<Cthon98> lol, yes. See, when YOU type hunter2, it shows to us as ****
<AzureDiamond> thats neat, I didnt know IRC did that
<Cthon98> yep, no matter how many times you type hunter2, it will show to us as ****
<AzureDiamond> awesome!
<AzureDiamond> wait, how do you know my pw?
<Cthon98> er, I just copy pasted YOUR ****'s and it appears to YOU as hunter2 cause its your pw
<AzureDiamond> oh, ok.
```

THANK YOU

```
--> | School (School@seaworld/cloaked/67efff1) has joined #lobby
School | dude, things are lame. i bet nobody's even reading this right now
School | irc is dead, lame
School | why isnt anybody talking??!!???
School | RIP chat
<-- | School (School@seaworld/cloaked/67efff1) has quit
```



JOIN US ON DISCORD

CADEY~#1337