Zulu: A Command Line Wireless Frame Injector

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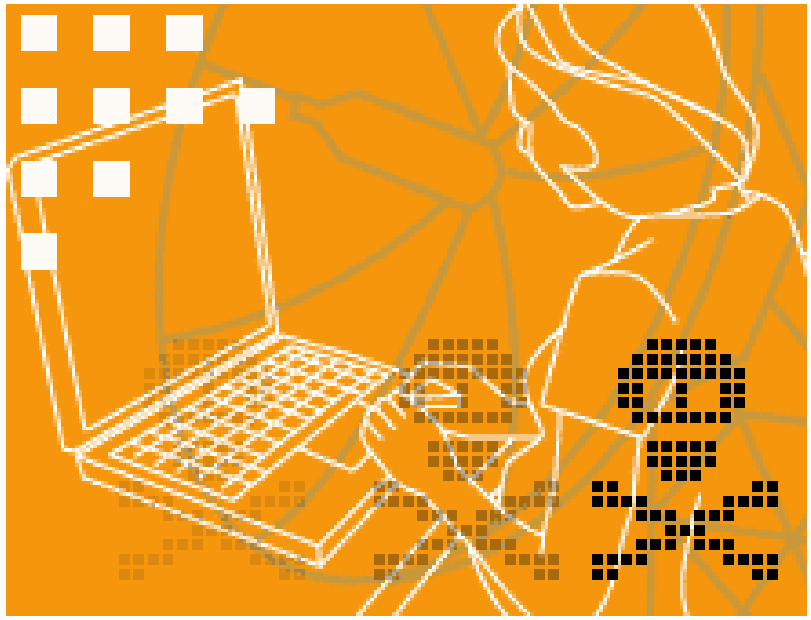
What is Zulu good for?

- Injecting custom frames
  - Probe a wireless network for security holes
  - Debugging a wireless Network
  - Launching De-authentication and De-association attacks
  - Testing wireless device drivers



What is Zulu?

- A command line tool to inject wireless frames
- Allows the user to set and unset most fields in a wireless frame
- Supports 20 command line options
- Works with Madwifi-ng drivers
- Includes code from lorcon to allow the channel and essid to be set

What is the goal of Zulu?

- The vision behind Zulu
  - Easy to use
  - Command line wireless frame injection tool
  - An hping tool for the wireless world
  - Minimal required options good default values
  - Plenty of options to customize frames
  - Requires no programming knowledge
  - Works with unmodified drivers

Command Line Options

Usage: zulu -t <type of frame> -i <interface> [options ….]

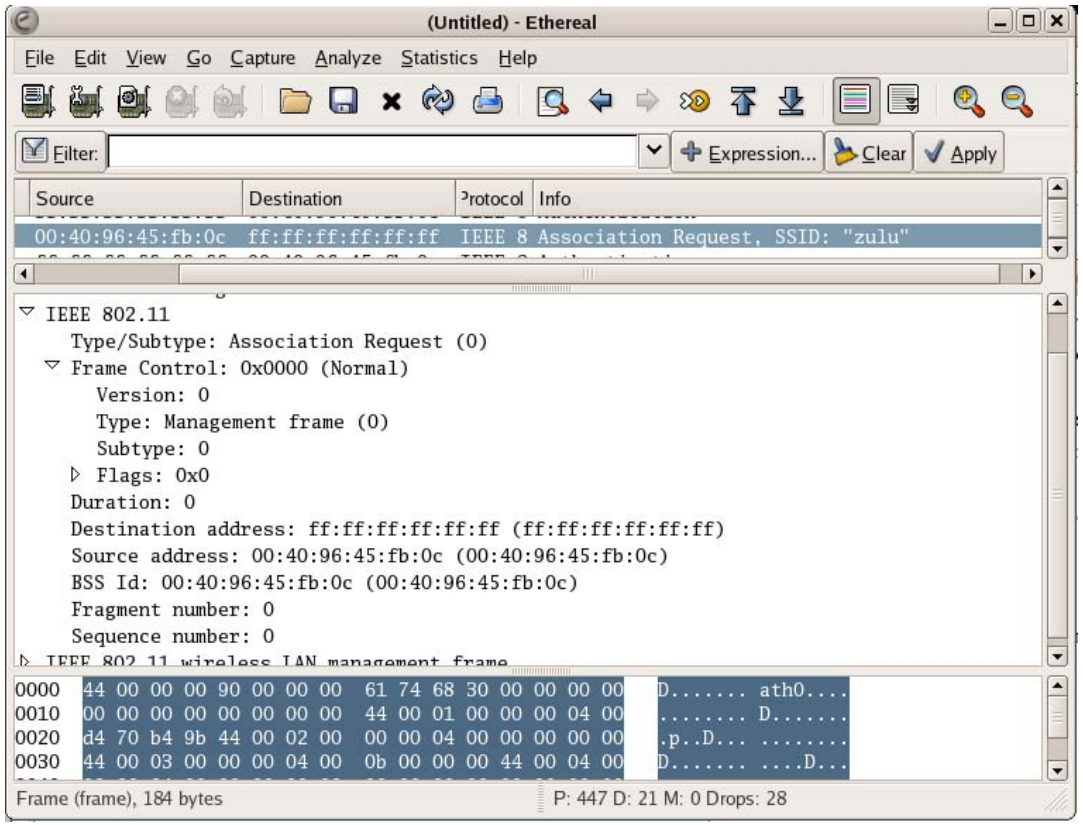
Optional Arguments

-s <src mac>
-d <dest mac>
-n <# of frames to send>
--delay <n>
-w -r -p -m -o
-f <fragement #>
--sequence <sequence #>
--ssid <ssid string>

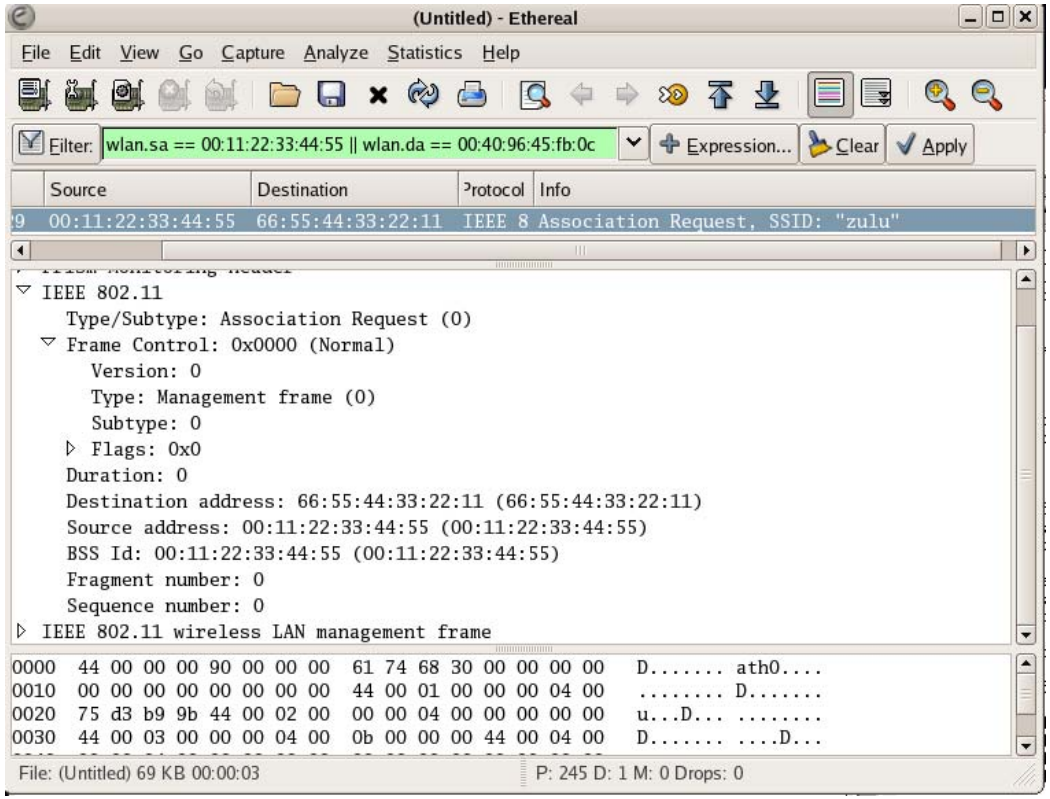
--duration <duration>
--to_ap
--from_ap
--adhoc
--bridge
--cf_ack
--cf_poll
--null_data
--script <file name>

Simple Example of Zulu

zulu -i ath0 -t assoc-request



zulu -i ath0 -t assoc-request -s 001122334455 -d 665544332211



Complex Zulu Example

zulu -i ath0 -t 5

-s 001122334455

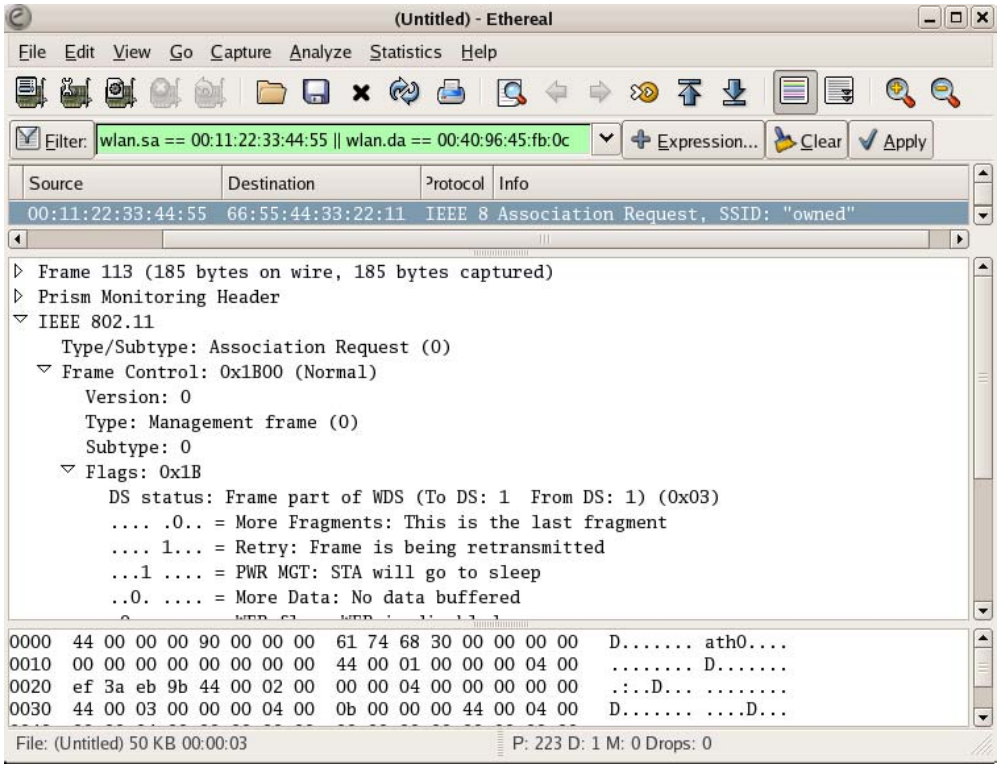
–d 665544332211

-p

--bridge

--sequence 1234

--ssid owned



Scripting in Zulu

zulu -i ath0 –file script.txt

script.txt

```
DATA 10
Beacon 20
RTS 30
```

This script will send out 10 date frames followed by 20 Beacons and 30 RTS frames all with default settings

How is Zulu different from other wireless frame generation tools?

- File2air
  - Lets you inject custom frames, but requires detailed knowledge of the frame structure
- libwlan and libradiate
  - Both are meant as programming libraries to allow programmers to inject wireless frames
- AirJack and FakeAP
  - Limited injection capabilities
- Pcap2air
  - Allows you to inject packets from a pcap file

Future Work

- Support for more wireless device drivers
- Testing of Zulu on more Linux platforms
- Better documentation
- Evaluation of command line options to make it easier to use
- Improved scripting support
- Better integration of lorcon

Where can I get Zulu?

moblog.colorado.edu/zulu

Acknowledgements

Joshwr1ght and Dragorn for writing lorcon download the full version:

http://802.11ninja.net/code/lorcon-current.tgz

Air Defense (www.airdefense.net) and Dr. Douglas Sicker for employing us while working on this tool

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