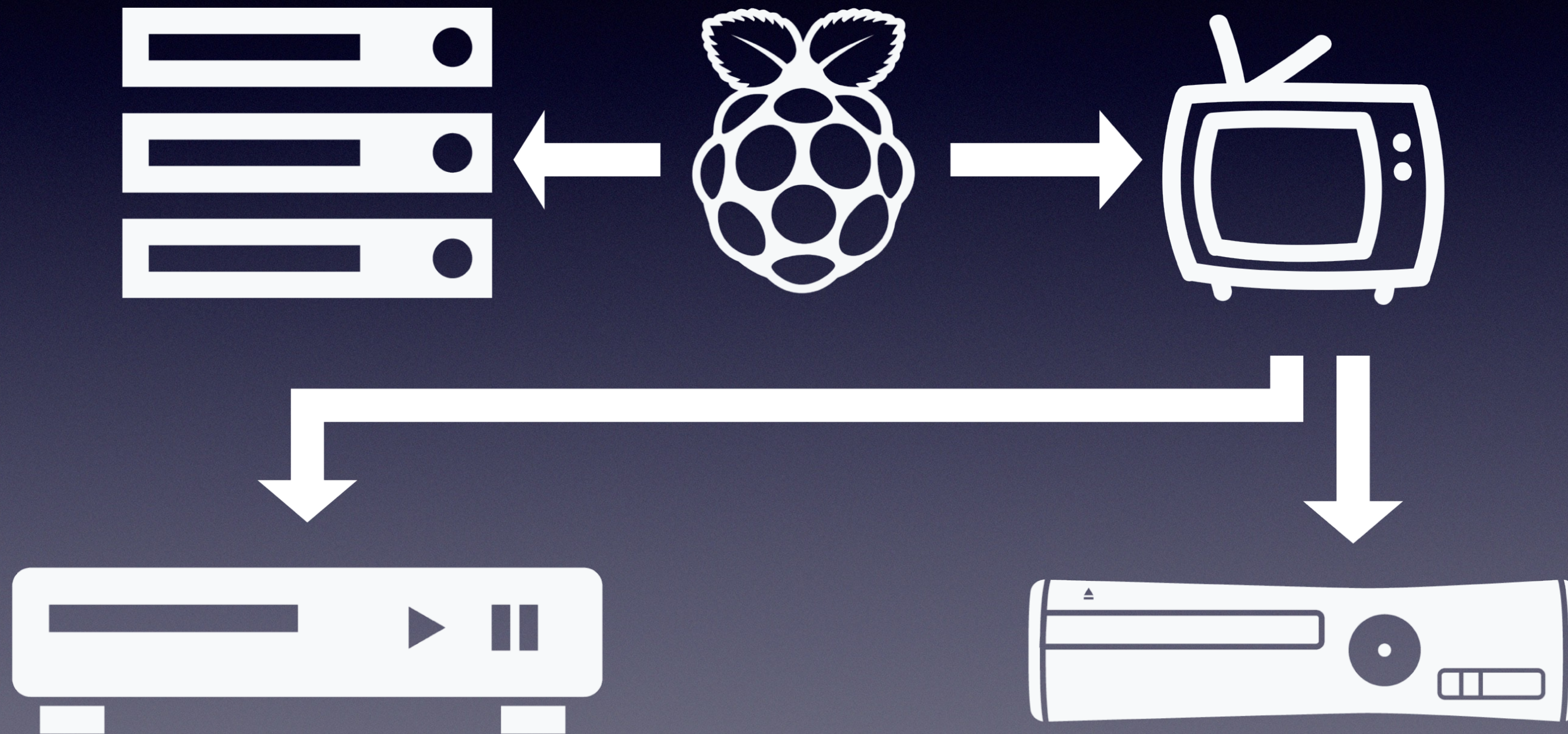


# JS in the Real World

By Hunter Parks



# GOAL - Home Automation





# Wake-on-LAN => WOL

FF:FF:FF:FF:FF:FF

11:22:33:44:55:66	11:22:33:44:55:66
11:22:33:44:55:66	11:22:33:44:55:66
11:22:33:44:55:66	11:22:33:44:55:66
11:22:33:44:55:66	11:22:33:44:55:66
11:22:33:44:55:66	11:22:33:44:55:66
11:22:33:44:55:66	11:22:33:44:55:66
11:22:33:44:55:66	11:22:33:44:55:66
11:22:33:44:55:66	11:22:33:44:55:66

WOL “Magic” Packet - 102 bytes

“Header” - 6 bytes

Payload - 96 bytes

Typically UDP (TCP *fine*)

NOT Full Stack (EtherType)



# Creating Magic Packet

```
...  
// macAddress stripped of filler characters  
// MAC_ADDR_SIZE = 6  
let macBuffer = Buffer.alloc(MAC_ADDR_SIZE);  
for(let i = 0; i < MAC_ADDR_SIZE; i++) {  
    macBuffer[i] =  
        parseInt(macAddress.substr((i * 2), 2), 16);  
}  
...
```



# Creating Magic Packet

```
...  
// macAddress stripped of filler characters  
// MAC_ADDR_SIZE = 6  
// MAC_ADDR_REPEAT = 16  
for(let i = 0; i < MAC_ADDR_REPEAT; i++) {  
    macBuffer.copy(magicPacket, // Target  
        (i + 1) * MAC_ADDR_SIZE, // Target Start  
        0, macBuffer.length); // Source Start, End  
}  
...
```



# Sending Magic Packet

```
...  
let socket = dgram.createSocket('udp4');  
socket.send(  
  magicPacket, 0, magicPacket.length,  
  9, '255.255.255.255', // Port, address  
  (error) => {  
    socket.close();  
  });  
...
```



# More Reading

- Wikipedia -> <https://en.wikipedia.org/wiki/Wake-on-LAN>
- Wireless WOL -> <https://revolutionwifi.blogspot.com/2010/11/wake-on-wireless-lan.html>
- AMD White Paper -> <https://support.amd.com/TechDocs/20213.pdf>
- EtherType -> <https://en.wikipedia.org/wiki/EtherType>



# Thank you!



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<http://bit.ly/2MSbdDh>