

Using Raspberry Pi® as Auto Shutdown Manager WOL Proxy

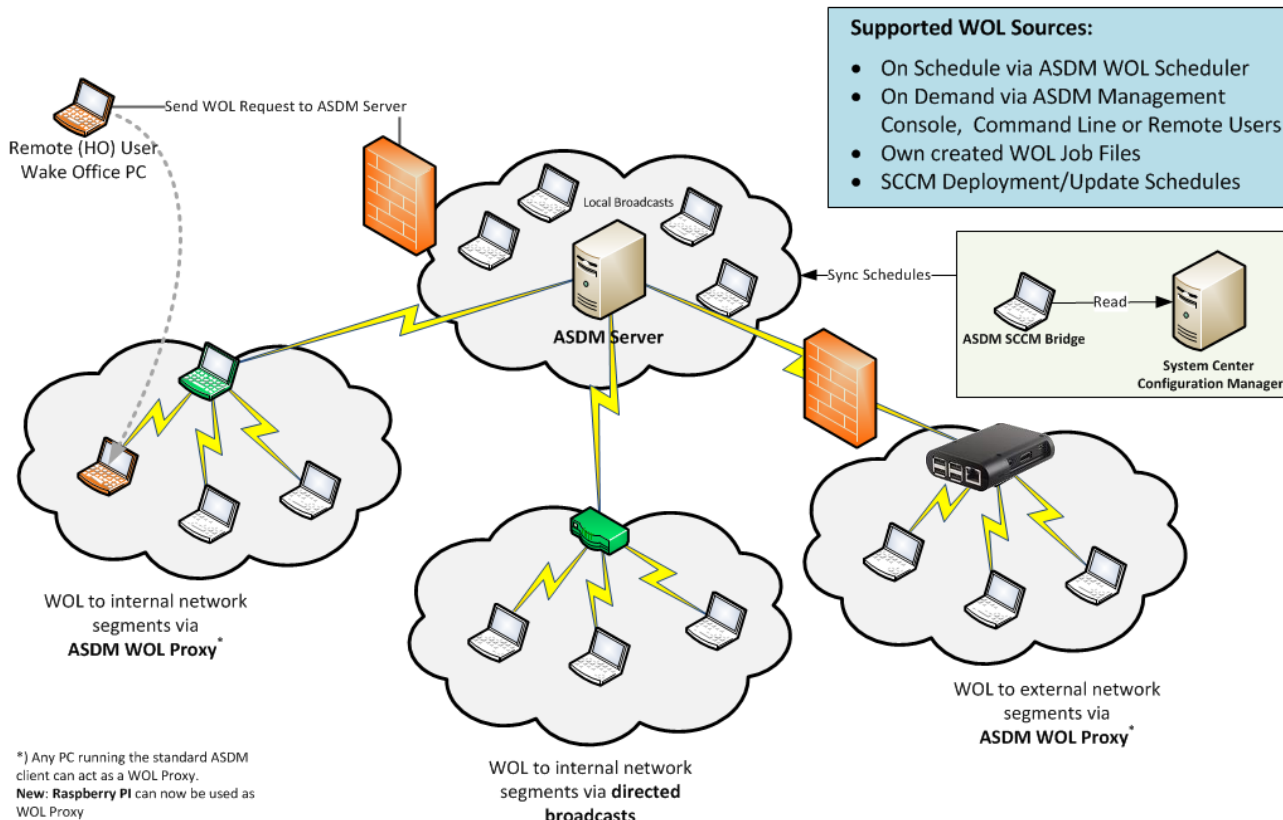
Auto Shutdown Manager Server supports Wake On LAN (WOL) into remote networks by using so called directed broadcasts or WOL Proxies. Because of the security issues directed broadcasts potentially have, WOL proxies are the technology of choice in almost all scenarios when it comes to wake remote computers located outside of the local network.

Every computer that runs the Auto Shutdown Manager client can be used as a WOL proxy. In many cases, small 24/7 running PCs or local servers can do the job on remote locations.

However, if there isn't such a server or PC that runs 24/7, you now can use one of the affordable and low power consuming Raspberry Pi® devices.

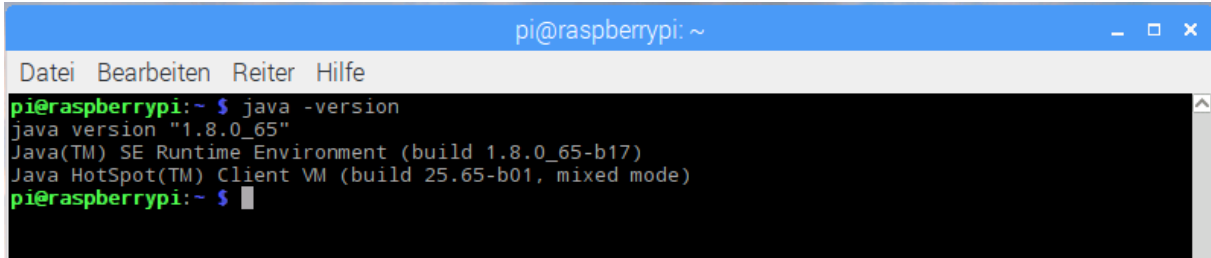


Auto Shutdown Manager Server Wake on Lan concepts



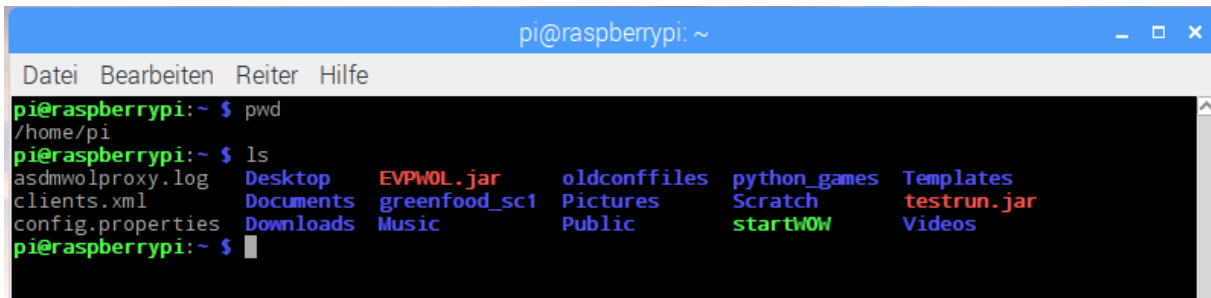
How to use it:

First of all, please make sure that your Raspberry Pi is up to date and that the java version installed is 1.8 or newer (Java 8):



```
pi@raspberrypi: ~  
Datei Bearbeiten Reiter Hilfe  
pi@raspberrypi:~$ java -version  
java version "1.8.0_65"  
Java(TM) SE Runtime Environment (build 1.8.0_65-b17)  
Java HotSpot(TM) Client VM (build 25.65-b01, mixed mode)  
pi@raspberrypi:~$
```

As next, copy the file called EVPWOL.jar into any folder you wish. We're using the `/home/pi` folder for this demo:



```
pi@raspberrypi: ~  
Datei Bearbeiten Reiter Hilfe  
pi@raspberrypi:~$ pwd  
/home/pi  
pi@raspberrypi:~$ ls  
asdmwolproxy.log Desktop EVPWOL.jar oldconffiles python_games Templates  
clients.xml Documents greenfood_sc1 Pictures Scratch testrun.jar  
config.properties Downloads Music Public startWOW Videos  
pi@raspberrypi:~$
```

The proxy can be executed using:

```
/usr/bin/java -jar /home/pi/EVPWOL.jar servername port
```

Servername is the DNS name or IP address of your Auto Shutdown Manager server and *port* stands for the TCP port that you're using on your Auto Shutdown Manager server.

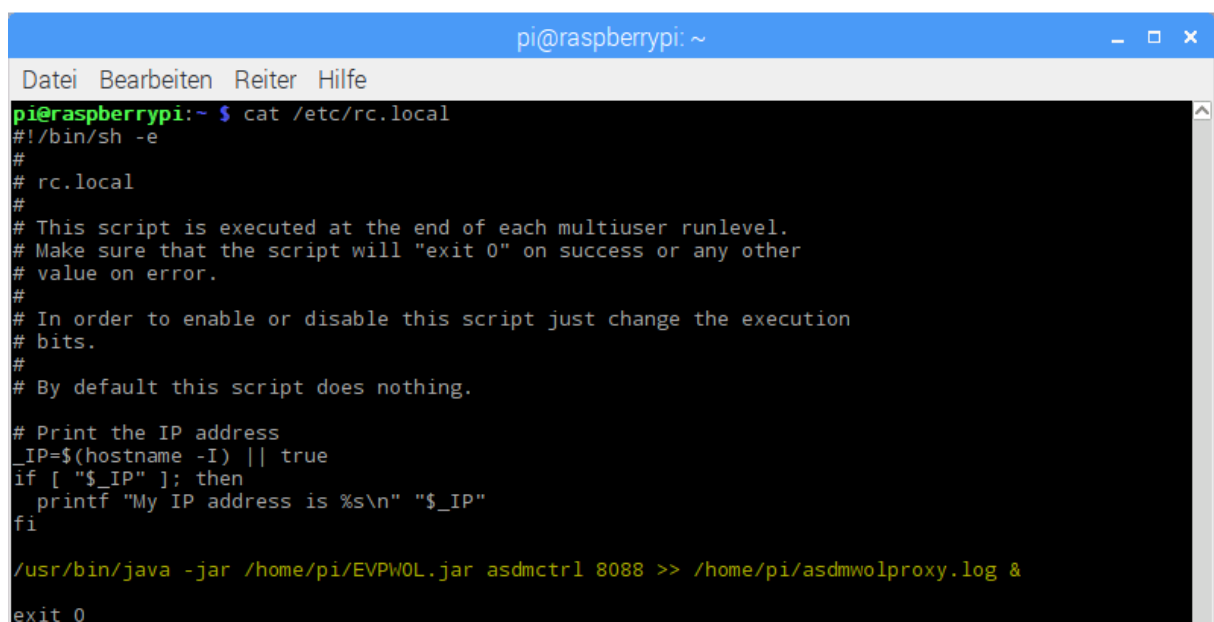
By default, the proxy is using "asdmctrl" as the servername and 8088 for the tcp port. If you'd like to use the defaults please make sure that asdmctrl is defined in `/etc/hosts` or as an alias in your DNS.

Auto start the WOL proxy on boot:

Some systems use the SysVinit System (using the rc.local file), some other use Systemd to execute scripts, daemons or applications during the boot phase.

1) Using the /etc/rc.local file

There are many ways to automatically start a software during the boot phase of the device. In this demo we use the file called /etc/rc.local:



```
pi@raspberrypi: ~  
Datei Bearbeiten Reiter Hilfe  
pi@raspberrypi:~ $ cat /etc/rc.local  
#!/bin/sh -e  
#  
# rc.local  
#  
# This script is executed at the end of each multiuser runlevel.  
# Make sure that the script will "exit 0" on success or any other  
# value on error.  
#  
# In order to enable or disable this script just change the execution  
# bits.  
#  
# By default this script does nothing.  
#  
# Print the IP address  
_IP=$(hostname -I) || true  
if [ "$_IP" ]; then  
    printf "My IP address is %s\n" "$_IP"  
fi  
  
/usr/bin/java -jar /home/pi/EVPWOL.jar asdmctrl 8088 >> /home/pi/asdmwolproxy.log &  
exit 0
```

Add the command: `/usr/bin/java -jar /home/pi/EVPWOL.jar asdmctrl 8088 &` to start the proxy.

Optionally add `>> /home/asdmwolproxy.log` to generate a log file in case there are some problems or errors while the proxy is starting or running. ***** Important: don't forget the `&` at the end in any case *****

2) Using Systemd

Store the driver EVPWOL.jar in any folder you wish, like your home folder /home/pi/EVPWOL.jar

Navigate to /etc/systemd/system/

Create a file called evpwol.service: ***sudo nano evpwol.service***

Add this content: Please note that “asdmctrl” stands for the Auto Shutdown Manager server address and 8088 is the default TCP

```
[Unit]
Description=Job that runs the EnviProt WOL Proxy daemon

[Service]
ExecStart=/usr/bin/java -jar /home/pi/EVPWOL.jar asdmctrl 8088 &

[Install]
WantedBy=multi-user.target
```

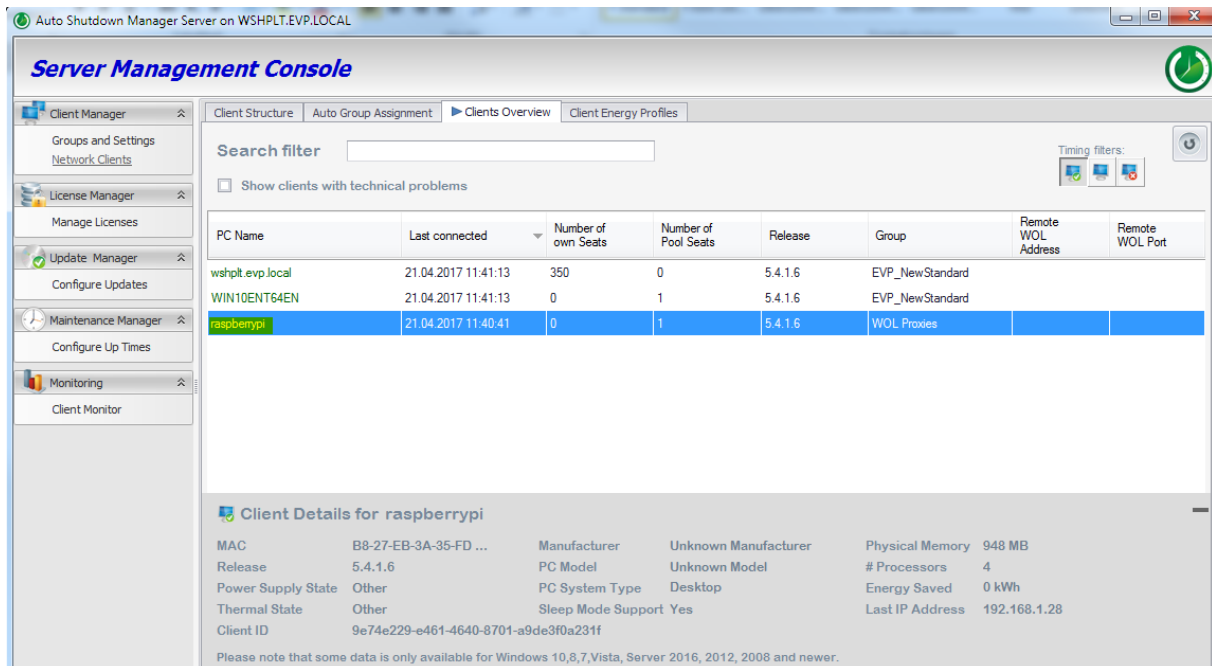
Now you can immediately start this service:

sudo systemctl start evpwol

AND don't forget to enable it to run at boot:

sudo systemctl enable evpwol

If everything went well, then you'll be able to see the Raspberry Pi device as a client in your Auto Shutdown Manager server console:



Server Management Console

Client Manager | Groups and Settings | Network Clients | License Manager | Manage Licenses | Update Manager | Configure Updates | Maintenance Manager | Configure Up Times | Monitoring | Client Monitor

Client Structure | Auto Group Assignment | **Clients Overview** | Client Energy Profiles

Search filter:

☐ Show clients with technical problems

PC Name	Last connected	Number of own Seats	Number of Pool Seats	Release	Group	Remote WOL Address	Remote WOL Port
wshpltt.evp.local	21.04.2017 11:41:13	350	0	5.4.1.6	EVP_NewStandard		
WIN10ENT64EN	21.04.2017 11:41:13	0	1	5.4.1.6	EVP_NewStandard		
raspberrypi	21.04.2017 11:40:41	0	1	5.4.1.6	WOL Proxies		

Client Details for raspberrypi

MAC	B8-27-EB-3A-35-FD ...	Manufacturer	Unknown Manufacturer	Physical Memory	948 MB
Release	5.4.1.6	PC Model	Unknown Model	# Processors	4
Power Supply State	Other	PC System Type	Desktop	Energy Saved	0 kWh
Thermal State	Other	Sleep Mode Support	Yes	Last IP Address	192.168.1.28
Client ID	9e74e229-e461-4640-8701-a9de3f0a231f				

Please note that some data is only available for Windows 10,8,7,Vista, Server 2016, 2012, 2008 and newer.

Finally, you can select it to act as a WOL proxy for the network segment it belongs to. In this demo the Raspberry Pi will be the WOL Proxy for the entire class C network 192.168.8.0.



Server Management Console

Client Manager | Groups and Settings | Network Clients | License Manager | Manage Licenses | Update Manager | Configure Updates | Maintenance Manager | Configure Up Times | Monitoring | Client Monitor

Real Time Actions | WOL Scheduler | WOL Scheduler Exceptions | **WOL Proxies**

Wake On LAN Proxies are used to Broadcast Magic Packets on a remote site

Every Client PC on a remote site can act as a WOL Proxy. It would make sense to assign all WOL Proxy Clients to a new Setting Group where the Idle Timer was stopped and no Shutdown Time Rules exist in order to keep them up and running for 24/7.

Active	Remote Client	Network Address	Network Mask
<input checked="" type="checkbox"/>	raspberrypi	192.168.8.0	255.255.255.0

Download:

You can download the software and this description at:

<https://www.enviprot.com/Software/JavaWOL.zip>

Final note:

This software is currently a Proof Of Concept and still under development. It is provided as is.

Because it is developed in Java, it may also run on other devices than the Raspberry Pi – but there aren't any tests made so far on our side other than on Ubuntu 18.10.

We would be very pleased to receive your comments, recommendations or bug reports. Please send them to support@enviprot.com with a subject JavaWOL or Raspberry.