

# mcrover

## User Guide

Version 1.0.0

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mcplex.net

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# Chapter 1

## Introduction

# Chapter 2

## Features

### 2.1 Local tests

- disk health (S.M.A.R.T.)
- filesystem capacity
- ZFS zpool health
- ZFS zpool capacity
- IPv4 routes
- IPv4 guests or bandits on network

### 2.2 Server tests

- DNS
- RPC
- TCP port listening
- TCP port NOT listening
- Credence server
- SMTP
- HTTP/HTTPS GET response
- WordPress
- piwigo
- Plex
- UPS status (via NUT upsd)

# Chapter 3

## Installation

### 3.1 General Dependencies

libsodium	libsodium-1.0.18	libsodium-1.0.18
libDwm	libDwm-0.9.15	libDwm-0.9.15
libDwmCredence	libDwmCredence-0.1.8	libDwmCredence 0.1.8
libDwmWebUtils	libDwmWebUtils-0.1.12	libDwmWebUtils 0.1.12
DwmDns	DwmDNS-0.2.5	DwmDns 0.2.5
Mcweather	Mcweather-0.1.5	Mcweather 0.1.5
boost	boost-1.72.0	libboost-dev 1.74.0
dnet	libdnet-1.13	libdumbnet-dev 1.12
libupsclient	nut-2.8.0	libupsclient-dev 2.7.4
openssl	openssl-1.1.1n,1	openssl 1.1.1f
pcre	pcre-8.44	
smartmontools * smartmontools-7.1	smartmontools-7.1	

### 3.2 FreeBSD

### 3.3 Ubuntu 20

### 3.4 Raspbian 10

## Chapter 4

# Configuration

### 4.1 Service

```
1 #=====
2 # Network service to allow authorized clients to fetch alerts.
3 #=====
4 service {
5     #-----
6     # A line like the following can be used to bind to a specific IP
7     # addresses instead of the wildcard.
8     #-----
9     addresses = [ { address = "inaddr_any"; port = 2123; },
10                  { address = "in6addr_any"; port = 2123; } ];
11
12     #-----
13     # Directory in which our credence key files are installed. We need 3
14     # key files:
15     #
16     #     id_ed25519.pub : our public key (Ed25519, generated with
17     #                       credence-keygen)
18     #     id_ed25519    : our private key (Ed25519, generated with
19     #                       credence-keygen)
20     #     known_keys    : public keys of those we'll allow to make requests.
21     #                     This would generally contain all members of our
22     #                     'pack' (see below) along with any users that are
23     #                     expected to run 'mcrover' or 'qmcrover'.
24     #-----
25     keyDirectory = "/usr/local/etc/mcroverd";
26
27     #-----
28     # If this is present, we'll only accept connections from clients
29     # within the prefixes listed here. We always authenticate connections,
30     # this list just lets us reject connections before we even attempt to
31     # authenticate.
32     #-----
33     allowedClients = [ "192.168.168/24", "127.0.0.1/32",
34                      "fd60:3019:dead:beef::0/64" ];
35 };
```

Listing 4.1: servers configuration

---

### 4.1.1 addresses

The addresses to which `mcroverd` will bind. In [Listing 4.1](#), we bind to the IPv4 and IPv6 wildcard addresses on port 2123. This is the default. `port` is optional, defaulting to 2123.

This can be used to bind to specific IP addresses if desired.

### 4.1.2 keyDirectory

The directory in which our credence key files are installed. The key files are used to authenticate clients and to authenticate `mcroverd` to clients.

If this directory is not specified, `/usr/local/etc/mcroverd` will be used.

### 4.1.3 allowedClients

This may be used to only allow connections from certain address ranges. If specified, connections from clients outside of these ranges will be rejected.

## 4.2 Our Pack

```
1  #####
2  #  Our pack.  We'll pull alerts from each of our members.
3  #  NOTE: when connecting as a client to dual-stack hosts, we'll try IPv6
4  #  first.
5  #####
6  pack {
7      name = "dwmpack";
8      members = [
9          { name = "gateway",
10             addresses = [
11                 { address = "192.168.168.1"; },
12                 { address = "fd60:3019:f4a:6aaf::1"; }
13             ];
14          },
15          { name = "www",
16             addresses = [
17                 { address = "192.168.168.2"; port = 2123; },
18                 { address = "fd60:3019:f4a:6aaf::2"; }
19             ];
20          },
21          { name = "nas",
22             addresses = [
23                 { address = "192.168.168.3"; },
24                 { address = "fd60:3019:f4a:6aaf::3"; }
25             ];
26          }
27      ];
28  };
```

Listing 4.2: servers configuration



---

### 4.2.1 name

### 4.2.2 members

member

## 4.3 Other Packs

## 4.4 Syslog

```
1 #=====
2 #  syslog configuration.
3 #=====
4 syslog {
5     #-----
6     #  Syslog facility.  Defaults to "daemon" if not set.
7     #-----
8     facility = "local0";
9
10    #-----
11    #  Minimum syslog priority to log.  Defaults to "info" if not set.
12    #-----
13    level = "debug";
14
15    #-----
16    #  Set to "yes" to get {filename:line} in syslog.
17    #-----
18    logLocations = "yes";
19 };
```

Listing 4.3: servers configuration

---

#### 4.4.1 facility

#### 4.4.2 level

#### 4.4.3 logLocations

### 4.5 Local

```
1  #####
2  # Local checks.
3  #####
4  local {
5      #-----
6      # For any listed ZFS pool, we will check that its status is ONLINE.
7      # Optionally, we can also check that it's not above the given capacity
8      # (percentage).
9      #-----
10     ZPOOL = [ { name = "zpool1"; capacity = 70; } ];
11
12     #-----
13     # Check that filesystem is mounted, and optionally check its capacity.
14     #-----
15     ZFS = [ { mount = "/zpool1/backups"; capacity = 70; } ];
16
17     #-----
18     # Check that filesystems are mounted, and optionally check their
19     # capacity.
20     #-----
21     FS = [ { mount = "/"; capacity = 70; },
22             { mount = "/data"; capacity = 90; } ];
23
24     #-----
25     # Check the S.M.A.R.T. health status of disks.
26     #-----
27     DISKS = [ { name = "root"; device = "/dev/da0"; },
28               { name = "gpzfs1_0"; device = "/dev/da1"; },
29               { name = "gpzfs1_1"; device = "/dev/da2"; },
30               { name = "data"; device = "/dev/da3"; } ];
31
32     #-----
33     #
34     #-----
35     ROUTES = [ { default = [ "192.168.168.1" ]; } ];
36
37     #-----
38     # I want an alert if a 'guest' address shows up in my ARP cache.
39     # A 'guest' is any address within one of these configured networks.
40     #-----
41     GUESTS = [ "192.168.168.64/27" ];
42
43     #-----
44     # I want an alert if an IPv4 address shows up in my ARP cache from the
45     # range I consider 'unallocated' (not in my DHCP pool, not statically
46     # assigned).
47     #-----
48     BANDITS = [ "192.168.168.96/27", "192.168.168.128/25" ];
49 };
```

Listing 4.4: servers configuration

---

**4.6 ZPOOL**

**4.7 ZFS**

**4.8 FS**

**4.9 DISKS**

**4.10 ROUTES**

## 4.11 Servers

```
1 #=====
2 # All the network servers I want to check.
3 #=====
4 servers {
5     #-----
6     # local services.
7     #-----
8     "localhost" {
9         ipv4 = 127.0.0.1;
10        ipv6 = ::1;
11        tcp4 = [ ssh, netbios-ssn, microsoft-ds ];
12        tcp6 = [ ssh ];
13        tcp4Denied = [ telnet, ftp, finger, shell ];
14        tcp6Denied = [ telnet, ftp, finger, shell ];
15        RPC = [ { name = "rpcbind"; protocol = "tcp"; version = 3; },
16                { name = "rpcbind"; protocol = "udp"; version = 3; },
17                { name = "rpcbind"; protocol = "tcp"; version = 4; },
18                { name = "rpcbind"; protocol = "udp"; version = 4; },
19                { name = "mountd"; protocol = "tcp"; version = 3; },
20                { name = "mountd"; protocol = "udp"; version = 3; } ];
21        SMTP = [ smtp ];
22        UPS = [ "powerware_5115", "eaton_5px" ];
23    };
24
25    #-----
26    # Web server.
27    #-----
28    "www" {
29        ipv4 = 192.168.168.2;
30        ipv6 = fd60:3019:f4a:6aaf::2;
31        tcp4 = [ ssh ];
32        tcp6 = [ ssh ];
33        tcp4Denied = [ telnet, ftp, finger, shell ];
34        tcp6Denied = [ telnet, ftp, finger, shell ];
35        WEB = [ { uri = "http://www.rfdm.com"; },
36                { uri = "https://www.rfdm.com"; status = [ 200 ]; } ];
37    };
38
39    #-----
40    # Are my domains resolvable from the outside world? MX record visible?
41    # NS records visible?
42    #-----
43    "dns.quad9.net" {
44        ipv4 = 9.9.9.9;
45        DNS = { resolve = [ { qname = "rfdm.com"; },
46                            { qname = "mcplex.net"; },
47                            { qtype = "MX"; qname = "mcplex.net"; },
48                            { qtype = "NS"; qname = "rfdm.com"; },
49                            { qtype = "NS"; qname = "mcplex.net"; } ];
50    };
51 };
52 };
```

Listing 4.5: servers configuration

## 4.12 Weather