

This document describes manifest for ZeroVM NaCl application.

update: a new design

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#### Description:

The manifest is a text file which must be provided in order to run a NaCl application inside ZeroVM.

Manifest samples can be found in "samples" directory.

#### list of available keywords:

Version

Program

Channel

Memory

Timeout

Node

Etag

NameServer

#### Structure:

- each valid line must contain exactly only one key and value(s) separated by exactly one '=' sign
- both key and value may contain spaces
- key and value case does matter: "key" and "KeY" are treated as a different keywords
- spaces around key/value will be ignored
- lines are delimited with EOL (unix or windows style)
- invalid lines will be ignored
- lines with unknown keywords (not mentioned below) will be ignored

- "Channel" expects complex values: comma separated fields

List of valid keywords:

Channel

(obligatory, 8 comma separated fields strings and integers)

Description of a channel. The order does matter. example:

Channel = /home/dazo/git/zerovm/samples/sort/sort.stdout.log, /dev/stdout, 5, 0, 0, 99999999, 99999999

where:

[1] trusted channel name (n/a for the user),

[2] untrusted channel name,

[3] access type,

[4] etag disabled/enabled (0/1),

[5] gets limit,

[6] get size limits,

[7] puts limit,

[8] put size limits

Each manifest SHOULD have at least three Channel configuration entries for the standard devices: stdin, stdout, stderr

Example (maps all channels to /dev/null):

Channel = /dev/null, /dev/stdin, 0, 0, 0, 0, 0, 0

Channel = /dev/null, /dev/stdout, 0, 1, 0, 0, 0, 0

Channel = /dev/null, /dev/stderr, 0, 1, 0, 0, 0, 0

network channels has same fields, but the very 1st one (trusted channel name) has special form:

protocol:address:port

where

protocol can be tcp (or udp for name server)

address is IPv4 or integer representaion of it

port is 16 bit integer or empty (if name server used)

## Version

(obligatory, string)

currently ZeroVM is not backward compatible with the older manifest versions.

working version is 20130611

## Program

(obligatory, string)

NaCl module to validate and run, full path

## Timeout

(obligatory, unsigned 32-bit integer)

time out in seconds. ZeroVM will stop user program and exit after the specified period

## Memory

(obligatory, 2 comma separated integers)

1st argument Specifies the memory size in bytes available for the user program. If specified

ZeroVM will allocate all memory before nexex start and will not use real memory

allocation syscalls due nexex runtime. MemMax should take in account that 16mb should be reserved for the user stack, 1mb+ - for nexex code and data, and some memory for system area

the 2nd argument is etag switch: 0 - disabled, 1 - enabled

## NameServer

(optional, string)

the address of name server. name server resolves zerovm provided network channels.

only supported protocol is udp. notation used to specify the address is not standard

since 1. it is internal thing, 2. it is more simple to parse such pseudo url. the

same notation used for network channels.

NameServer = udp:127.0.0.1:54321

udp - protocol

127.0.0.1 - server ip address

54321 - server port

note: it is possible to use integer ip representation instead of IPv4

Node

(optional, unsigned 32-bit integer)

Specifies the node id (not available for the untrusted code). The node id should be greater than 0.

Example:

NodeName = 1

Etag

(optional, single value)

reserved

Both keywords and values have size limit of 64kb. The manifest file size limited to 0x100000. The limitations can be changed in the future.