Public plan.json File Format

JSON Schema

Description of the current version of the publicly available plan.json scheme.

Versioning follows standard semantic versioning. To use the latest features of the plan.json format, make sure you are using the most up to date version. Our player will always be backwards compatable with all plan.json files created with the given major version number.

current version: 1.0.0

Top level section defining metadata for the planned workout.

Field	type	description
name	string (required)	display name for the plan
version	semantic version number (required)	version of the plan.json schema used to create this plan * always use the latest version
description	string (optional)	short description of the plan to be displayed to user (5000 characters max)
duration_s	integer (optional)	length of the plan in seconds (if omitted, calculated based on intervals)
distance_m	integer (optional)	length of the plan in meters (if omitted, calculated based on intervals)
workout_type_family	WORKOUT_TYPE_FAMILY enum (required)	one of the Wahoo workout families (e.g. running, biking) see table below
workout_type_location	WORKOUT_TYPE_LOCATION enum (required)	one of the Wahoo workout locations (indoor or outdoor) see table below
ftp	integer (optional)	athlete's FTP value in watts (used for interval targets)
map	integer (optional)	athlete's MAP value in watts (used for interval targets)
ac	integer (optional)	athlete's AC value in watts (used for interval targets)

nm	integer (optional)	athlete's NM value in watts (used for interval targets)
~~threshold_hr~~	~~integer (optional)~~	~~athlete's threshold heart rate value in beats per minute (used for interval targets)~~
~~max_hr~~	~~integer (optional)~~	~~athlete's maximum heart rate value in beats per minute (used for interval targets)~~

intervals

Top level section containing an array of work intervals for the session. Each interval is a “step” in the workout with the overall workout defined as a series of these steps. Each interval object is defined by the following fields:

Field	type	description
name	string (optional)	display name for the interval
exit_trigger_type	TRIGGER_TYPE (required)	the type of value used to trigger the end of the interval (e.g. distance, time, calories, repeat)
exit_trigger_value	float (required)	the value to reach that signals the end of an interval trigger type “repeat” determines how many times AFTER the first iteration to repeat the interval (e.g. repeat value of 1 means the parent interval will be performed a total of 2 times)
intensity_type	INTENSITY_TYPE (optional)	intensity type to use as a label for the interval (e.g. warmup, tempo, cooldown) - will default to “active”
targets	Target	the type of target for the interval (e.g. cadence, HR, power, speed)
intervals	array of intervals (optional)	when exit_trigger_value is set to “repeat” this interval set is used for each iteration of the repeat

targets

An array of targets for the current interval. If a target is provided it must include a type (see TARGET_TYPE below), a low value, and a high value. High must be greater than or equal to low.

Field	type	description
type	TARGET_TYPE (required)	the type of target for the interval (e.g. cadence, HR, power, speed)
low	number	the lowest value for the target to be considered “in range”
high	number	the highest value for the target to be considered “in range”

Enumerations

TARGET_TYPE

value	description

rpm	cadence based target in rotations per minute
rpe	relative percieved effort, 1-10 inclusive
watts	raw power number target in watts
ftp	portion of athlete's power target. Value of 1 indicates 100% of the user's ftp value. * only valid if athlete's FTP value is supplied in the header
map	portion of 4DP power target based on the user's 5min power, value of 1 indicates 100% of the user's map 4DP value * only valid if athlete's MAP value is supplied in the header
ac	portion of 4DP power target based on the user's 1min power, value of 1 indicates 100% of the user's AC 4DP value * only valid if athlete's AC value is supplied in the header
nm	portion of 4DP power target based on the user's 5sec power, value of 1 indicates 100% of the user's NM 4DP value * only valid if athlete's AC value is supplied in the header
threshold_hr	portion of HR target based on the user's threshold HR, value of 1 indicates 100% of the user's Threshold HR • only valid if athlete's threshold_hr value is supplied in the header
max_hr	portion of HR target based on the user's max HR, value of 1 indicates 100% of the user's max HR • only valid if athlete's max_hr value is supplied in the header
hr	absolute hr target in beats per minute
speed	absolute speed target in meters per second

TRIGGER_TYPE

enum used to define exit triggers

value	description
time	measured in seconds
distance	measured in meters
kj	measured in kilojoules (work performed)
calories	measured in kilocalories (estimated calories burned)
repeat	used by a parent interval to determine how many times AFTER the first iteration to repeat the interval (and any subintervals)

INTENSITY_TYPE

enum of intensity types

value	user display

active (default)	active
wu	warm up
tempo	tempo
lt	lactate threshold
map	maximal aerobic power
ac	anaerobic capacity
nm	neuromuscular power
ftp	functional threshold power
cd	cool down
recover	recovery
rest	rest

WORKOUT_TYPE_FAMILY

enum of workout families

value	user display
0	Biking
1	Running

WORKOUT_TYPE_LOCATION

enum of workout locations

value	user display
0	Indoor
1	Outdoor

Examples

1. Warmup for 10 minutes, FTP ladder up and down, cool down for 5 minutes

```
{
  "header": {
    "name": "Jacob's FTP Ladder",
    "version": "1.0.0",
    "description": "Warmup for 10 minutes, FTP ladder up, cool down for 5 minutes",
    "workout_type_family": 0,
    "ftp": 277
  },
  "intervals": [
    {
      "name": "No target for this warmup interval, just have fun!",
```

```
      "exit_trigger_type": "time",
      "exit_trigger_value": 600,
      "intensity_type": "wu",
      "targets": [
        { "type": "ftp", "low": 0.45, "high": 0.55 }
      ]
    },
    {
      "name": "80% ON",
      "exit_trigger_type": "time",
      "exit_trigger_value": 360,
      "intensity_type": "active",
      "targets": [
        { "type": "ftp", "low": 0.77, "high": 0.83 },
        { "type": "rpm", "low": 90, "high": 105 }
      ]
    },
    {
      "name": "Recover",
      "exit_trigger_type": "time",
      "exit_trigger_value": 60,
      "intensity_type": "recover",
      "targets": [
        { "type": "ftp", "low": 0.60, high": 0.60 }
      ]
    },
    {
      "name": "90% ON",
      "exit_trigger_type": "time",
      "exit_trigger_value": 300,
      "intensity_type": "active",
      "targets": [
        { "type": "ftp", "low": 0.87, "high": 0.93 },
        { "type": "rpm", "low": 90, "high": 105 }
      ]
    },
    {
      "name": "Recover",
      "exit_trigger_type": "time",
      "exit_trigger_value": 60,
      "intensity_type": "recover",
      "targets": [
        { "type": "ftp", "low": 0.60, "high": 0.60 }
      ]
    },
    {
      "name": "100% ON",
      "exit_trigger_type": "time",
      "exit_trigger_value": 240,
      "intensity_type": "active",
      "targets": [
        { "type": "ftp", "low": 0.97, "high": 1.03 },
        { "type": "rpm", "low": 90, "high": 105 }
      ]
    },
    {
      "name": "Cool Down",
      "exit_trigger_type": "time",
```

```
      "exit_trigger_value": 300,
      "intensity_type": "cd",
      "targets": [
        { "type": "ftp", "low": 0.45, "high": 0.55 }
      ]
    }
  ]
}
```

2. Warmup for 10 minutes, 3x400m, 10 minutes at tempo, 3x400m, 10 minute cool down

```
{
  "header": {
    "name": "Rinat's Repeats",
    "version": "1.0.0",
    "description": "Warmup for 10 minutes, 3x400m, 10 minute ramped cool down",
    "workout_type_family": 1,
    "threshold_hr": 173
  },
  "intervals": [
    {
      "name": "Try to stay in zone 1",
      "exit_trigger_type": "time",
      "exit_trigger_value": 600,
      "intensity_type": "wu",
      "targets": [
        { "type": "threshold_hr", "low": 0.70, "high": 0.80 }
      ]
    },
    {
      "name": "3 x 400m @ 10k pace",
      "exit_trigger_type": "repeat",
      "exit_trigger_value": 2,
      // with an exit_trigger_value of 2
      // all subintervals will repeat twice after the first iteration
      // for a total of 3 repeats
      "intervals": [
        {
          "name": "400m @ 10k pace",
          "exit_trigger_type": "distance",
          "exit_trigger_value": 400,
          "intensity_type": "lt",
          "targets": [
            { "type": "speed", "low": 4.30, "high": 4.55 }
          ]
        },
        {
          "name": "200m EZ",
          "exit_trigger_type": "distance",
          "exit_trigger_value": 200,
          "intensity_type": "recover",
          "targets": [
            { "type": "threshold_hr", "low": 0.70, "high": 0.80 }
          ]
        }
      ]
    },
    {
```

```
      "name": "Cool Down",
      "exit_trigger_type": "repeat",
      "exit_trigger_value": 0,
      // with an exit_trigger_value of 0, all subintervals will only iterate once
      "intensity_type": "cd",
      "intervals": [
        {
          "name": "CD part 1 - Zone 3",
          "exit_trigger_type": "time",
          "exit_trigger_value": 240,
          "targets": [
            { "type": "threshold_hr", "low": 0.89, "high": 0.94 }
          ]
        },
        {
          "name": "CD part 2 - Zone 2",
          "exit_trigger_type": "time",
          "exit_trigger_value": 240,
          "targets": [
            { "type": "threshold_hr", "low": 0.80, "high": 0.88 }
          ]
        },
        {
          "name": "CD part 3 - Zone 1",
          "exit_trigger_type": "time",
          "exit_trigger_value": 120,
          "targets": [
            { "type": "threshold_hr", "low": 0.70, "high": 0.80 }
          ]
        }
      ]
    }
  ]
}
```