

# Getting Stepped Random Values from Config

You would be familiar with retrieving a random value from the config by writing:

```
[Values]  
Randoms = 0 ~ 1999
```

And in code:

```
if (orxConfig_PushSection("Values")){  
    orxU32 value = orxConfig_GetU32("Randoms");  
    orxLOG ("Value: %d", value);  
  
    orxConfig_PopSection();  
}
```

This will give you a random number, eg:

```
Value: 1675
```

## Stepped Integers

You can also define **stepped** random values using the following format:

```
[Values]  
Angles = 0 ~ 45 ~ 360
```

```
orxU32 value = orxConfig_GetU32("Angles");
```

```
Value: 270
```

In the example above, 0 ~ 45 ~ 360 would mean to define a range of values between 0 and 360, 45 steps apart.

Other examples would be:

```
0 ~ 1 ~ 10 (standard number range of 1 to 10, steps of 1)  
0 ~ 1 ~ 1 (like a binary switch 0 or 1, same as 0 ~ 1)  
1 ~ 5 ~ 100 (1 to 100 in steps of 5)  
0 ~ 2 ~ 10 (an even number between 0 to 10)
```

## Code examples

You can also do this from code using any of the following functions:

1. orxMath\_GetSteppedRandomFloat
2. orxMath\_GetSteppedRandomU32
3. orxMath\_GetSteppedRandomS32
4. orxMath\_GetSteppedRandomU64
5. orxMath\_GetSteppedRandomS64

An example:

```
orxFLOAT val = orxMath_GetSteppedRandomFloat(1, 100, 2.1);  
orxLOG ("Value: %f", val);
```

```
11.50000
```

So the above would be floats 1 to 100 in steps of 2.1. You can get more details about those functions here: [http://orx-project.org/orx/doc/html/group\\_orx\\_math.html](http://orx-project.org/orx/doc/html/group_orx_math.html)

## Stepped Vectors

A little trickier, but the same nonetheless:

```
[Values]  
MyRandomVector = (1, 3, 5) ~ (0, 0.1) ~ (2, 4, 6)
```

- X will be unconstrained between 1 and 2 (step = 0)
- Y will be between 3 and 4 with a step of 0.1 and;
- Z will be unconstrained between 5 and 6 (no Z component, which means: Z = 0)

## More details

You can get more detail and examples in the Creation Template [here](#) or in your local repo of Orx.

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