# MC’s Hell Portal Mechanism

O: Overworld

N: The Nether

floor() Return the maximum integer less than or equal to the parameter,For example:

floor(-29.5) = -30

floor(29.5) = 29

The formula for converting O's position to N's position is as follows:

1. If the player stands in the nearest portal block, it will reuse the position last selected by that portal (without changing them during this period), but this behavior only lasts for 60 seconds, after which the cached target expires.
2. If the portal the player is in has not been used recently, a new target will be calculated:

2.1. If the entry point is in O, the position of O are converted to N's position. Otherwise, N's position are converted to O's position. The new position become the target positions, generating several potential positions.

2.2. From these target position, search for the nearest portal within a horizontal radius of 128 blocks (with N being a 16x16 block area) and at the respective map heights (N at Y=128 blocks, O at Y=384) using Manhattan distance. If a candidate portal is found, the player will be teleported to the nearest portal based on Euclidean distance.

2.3. If no portal is found, one will be created.

中文原文：

1. 如果玩家站在最近的传送门方块里，会重新使用该传送门上次选择的坐标（期间不会改变），但这个行为只持续60秒，超过60秒后缓存的目标就会过期。

2. 如果玩家所在的传送门最近没有被使用，就会计算新的目标：

2.1. 如果进入点在O中，O的坐标转换为N的坐标。否则，N的坐标转换为O的坐标。新的坐标为目标坐标，这会生成数个坐标。

2.2 从这些目标坐标搜索最近的传送门（水平128个方块，N为16格方快是半径），并以地图高度（N为Y=128个方块，O为Y=384）进行搜索（注意！这里的距离是曼哈顿距离），如果找到一个候选传送门，就会把玩家传送到最近距离的传送门。（注意！这里的距离是欧几里得距离）

2.3 如果未搜索到传送门，则会创建一个传送门。