Thank you for your purchase! The most recent documentation can be found online. If you have any questions feel free to post on the forums or email support@opsive.com.

Column

Arrange the group in one or more columns where the column is significantly longer than the width of rows.

targetTransform
The target destination

targetPosition
The target destination Vector3 position. Used if targetTransform is null

lookAhead
The distance to look ahead to the destination. The higher the value the better the agent will avoid obstacles and less keep formation

fullSpeed
The agent move speed after the group has formed

formationSpeed
The agent move speed as the group is forming

waitTime
The amount of time to wait until the group starts forming

isLeader
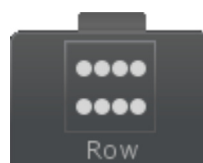Should the current agent lead the group? If false the closest agent to the destination will lead

separation
The separation between agents

columns
The number of columns to form

Row

Arrange the group in one or more rows with the row significantly wider than the length of the column.

targetTransform
The target destination

targetPosition
The target destination Vector3 position. Used if targetTransform is null

lookAhead
The distance to look ahead to the destination. The higher the value the better the agent will avoid obstacles and less keep formation

fullSpeed
The agent move speed after the group has formed

formationSpeed
The agent move speed as the group is forming

waitTime
The amount of time to wait until the group starts forming

isLeader
Should the current agent lead the group? If false the closest agent to the destination will lead

separation
The separation between agents

rows
The number of rows to form

Grid

Arrange the group in a grid where the number of rows is equal to the number of columns.

targetTransform
The target destination

targetPosition
The target destination Vector3 position. Used if targetTransform is null

lookAhead
The distance to look ahead to the destination. The higher the value the better the agent will avoid obstacles and less keep formation

fullSpeed
The agent move speed after the group has formed

formationSpeed
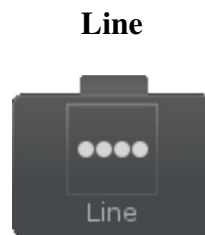The agent move speed as the group is forming

waitTime
The amount of time to wait until the group starts forming

isLeader
Should the current agent lead the group? If false the closest agent to the destination will lead

separation
The separation between agents

Line

Arrange the group in a straight horizontal line.

targetTransform
The target destination

targetPosition
The target destination Vector3 position. Used if targetTransform is null

lookAhead
The distance to look ahead to the destination. The higher the value the better the agent will avoid obstacles and less keep formation

fullSpeed
The agent move speed after the group has formed

formationSpeed
The agent move speed as the group is forming

waitTime
The amount of time to wait until the group starts forming

isLeader
Should the current agent lead the group? If false the closest agent to the destination will lead

separation
The separation between agents

right
Should the formation be to the right of the leader?

Echelon

Arrange the group in a diagonal formation.

targetTransform
The target destination

targetPosition
The target destination Vector3 position. Used if targetTransform is null

lookAhead
The distance to look ahead to the destination. The higher the value the better the agent will avoid obstacles and less keep formation

fullSpeed
The agent move speed after the group has formed

formationSpeed
The agent move speed as the group is forming

waitTime
The amount of time to wait until the group starts forming

isLeader
Should the current agent lead the group? If false the closest agent to the destination will lead

separation
The separation between agents

right
Should the formation be to the right of the leader?

Wedge

Arrange the group in an upside down V shape where the leader is in the front.

targetTransform
The target destination

targetPosition

The target destination Vector3 position. Used if targetTransform is null

looAhead
The distance to look ahead to the destination. The higher the value the better the agent will avoid obstacles and less keep formation

fullSpeed
The agent move speed after the group has formed

formationSpeed
The agent move speed as the group is forming

waitTime
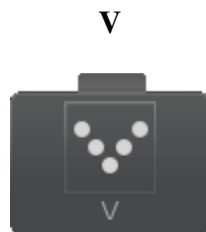The amount of time to wait until the group starts forming

isLeader
Should the current agent lead the group? If false the closest agent to the destination will lead

separation
The separation between agents

fill
Should agents fill the wedge?

V

Arrange the group in a V shape where the leader is in the back.

targetTransform
The target destination

targetPosition
The target destination Vector3 position. Used if targetTransform is null

lookAhead
The distance to look ahead to the destination. The higher the value the better the agent will avoid obstacles and less keep formation

fullSpeed
The agent move speed after the group has formed

formationSpeed
The agent move speed as the group is forming

waitTime

The amount of time to wait until the group starts forming

isLeader
Should the current agent lead the group? If false the closest agent to the destination will lead

separation
The separation between agents

Arc

Arrange the group in an arc.

targetTransform
The target destination

targetPosition
The target destination Vector3 position. Used if targetTransform is null

lookAhead
The distance to look ahead to the destination. The higher the value the better the agent will avoid obstacles and less keep formation

fullSpeed
The agent move speed after the group has formed

formationSpeed
The agent move speed as the group is forming

waitTime
The amount of time to wait until the group starts forming

isLeader
Should the current agent lead the group? If false the closest agent to the destination will lead

radius
The radius of the arc

concave
Is the arc concave?

Skirmisher

Arrange the group in a randomly spread out line.

targetTransform
The target destination

targetPosition
The target destination Vector3 position. Used if targetTransform is null

lookAhead
The distance to look ahead to the destination. The higher the value the better the agent will avoid obstacles and less keep formation

fullSpeed
The agent move speed after the group has formed

formationSpeed
The agent move speed as the group is forming

waitTime
The amount of time to wait until the group starts forming

isLeader
Should the current agent lead the group? If false the closest agent to the destination will lead
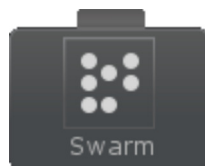
minSeparation
The minimum separation between two agents

maxSeparation
The maximum separation between two agents

Swarm

Arrange the group in a tight circle that can move together.

targetTransform
The target destination

targetPosition
The target destination Vector3 position. Used if targetTransform is null

lookAhead
The distance to look ahead to the destination. The higher the value the better the agent will avoid obstacles and less keep formation

fullSpeed
The agent move speed after the group has formed

formationSpeed
The agent move speed as the group is forming

waitTime
The amount of time to wait until the group starts forming

isLeader
Should the current agent lead the group? If false the closest agent to the destination will lead

radius
The radius of the group

maxPlacementAttempts
The agent positions in the swarm is randomly determined. These positions will keep being regenerated until they are not overlapping any other position. This value allows the random placement to be capped so it doesn't result in an infinite loop

Diamond

Arrange the group in a tactical diamond shape.

targetTransform
The target destination

targetPosition
The target destination Vector3 position. Used if targetTransform is null

lookAhead
The distance to look ahead to the destination. The higher the value the better the agent will avoid obstacles and less keep formation

fullSpeed
The agent move speed after the group has formed

formationSpeed
The agent move speed as the group is forming

waitTime

The amount of time to wait until the group starts forming

isLeader
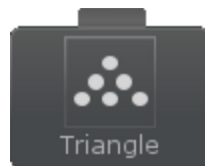Should the current agent lead the group? If false the closest agent to the destination will lead

separation
The separation between agents

backPositionOffset
Should the back agents have a left and right offset?

Triangle

Arrange the group in a triangle.

targetTransform
The target destination

targetPosition
The target destination Vector3 position. Used if targetTransform is null

lookAhead
The distance to look ahead to the destination. The higher the value the better the agent will avoid obstacles and less keep formation

fullSpeed
The agent move speed after the group has formed

formationSpeed
The agent move speed as the group is forming

waitTime
The amount of time to wait until the group starts forming

isLeader
Should the current agent lead the group? If false the closest agent to the destination will lead

length
The length of the triangle

Square

Arrange the group in a square.

targetTransform
The target destination

targetPosition
The target destination Vector3 position. Used if targetTransform is null

lookAhead
The distance to look ahead to the destination. The higher the value the better the agent will avoid obstacles and less keep formation

fullSpeed
The agent move speed after the group has formed

formationSpeed
The agent move speed as the group is forming

waitTime
The amount of time to wait until the group starts forming

isLeader
Should the current agent lead the group? If false the closest agent to the destination will lead

length
The length of the square

Circle

Arrange the group in a circle.

targetTransform
The target destination

targetPosition
The target destination Vector3 position. Used if targetTransform is null

lookAhead
The distance to look ahead to the destination. The higher the value the better the agent will avoid obstacles

and less keep formation

fullSpeed
The agent move speed after the group has formed

formationSpeed
The agent move speed as the group is forming

waitTime
The amount of time to wait until the group starts forming

isLeader
Should the current agent lead the group? If false the closest agent to the destination will lead

radius
The radius of the circle

Follow Orders

Tells the leader that the current agent is ready to follow its orders

leader
The leader to follow

Formation Type Creation

As we hear more suggestions from the community the number of formation tasks will continue to grow. However, you may want to add your own custom formation and this can easily be accomplished with the Fomration Pack API. The first step in developing your own formation task is to inherit your task from the GroupFormation base class. This will take care of most of the work for you and all you have to do is specify where you want each of your units to be positioned. The following methods can be overridden:

```
/// Virtual method to allow the formation tasks to specify a target position.
/// The index of the group member.
/// The z distance to look ahead of the target position.
/// The position to move to, in world space.
protected Vector3 TargetPosition(int index, float zLookAhead)

/// Adds the agent to the formation lists.
/// The agent to add.
protected void AddAgentToGroup(Transform agent)

/// Removes the agent from the group.
/// The agent to remove.
/// The index of the agent removed from the group.
protected int RemoveAgentFromGroup(Transform agent)
```

TargetPosition is the method that will position your agent. The index parameter specifies the index of the agent within the formation. zLookAhead specifies the distance to look ahead of the target position. As a basic example, the following method will form a line where each agent is two units apart on the relative x axis:

```
protected override Vector3 TargetPosition(int index, float zLookAhead)
{
    return transforms[0].TransformPoint(index * 2, 0, zLookAhead);
}
```

The transforms array is a protected array belonging to the parent class. It contains a list of all of the group transforms. In this example we are getting the relative offset from the first transform, which is always the leader transform. As the index increases the distance between the agent and the leader will also increase on the x axis which will form a line. zLookAhead is used on the relative z axis to prevent the agent from always being within stopping distance from its target.

AddAgentToGroup and RemoveAgentFromGroup are called when the agent is added or removed from the group. This allows for initialization/destruction if the formation task requires knowledge ahead of time of how many agents are in the group.

Support

We are here to help! If you have any questions/problems/suggestions please don't hesitate to ask. You can email us at support@opsive.com or post on the forum.