

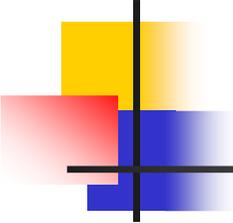
# ARENA

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## Advanced Transfer

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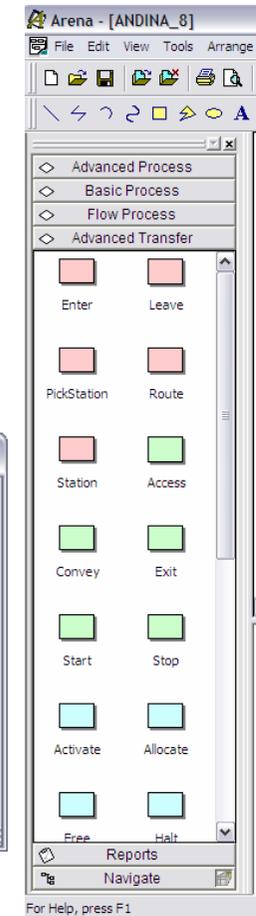
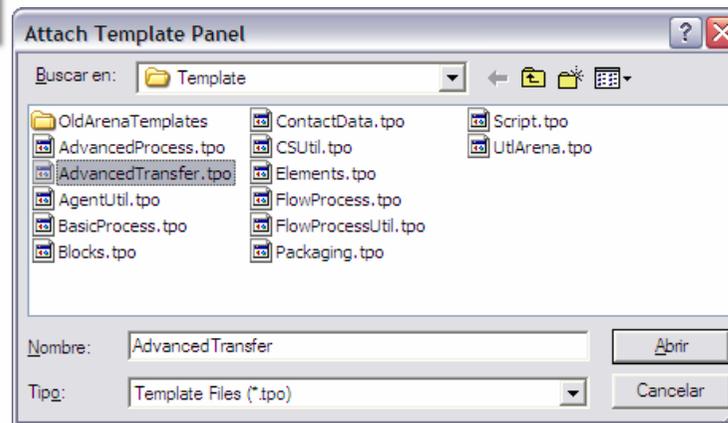
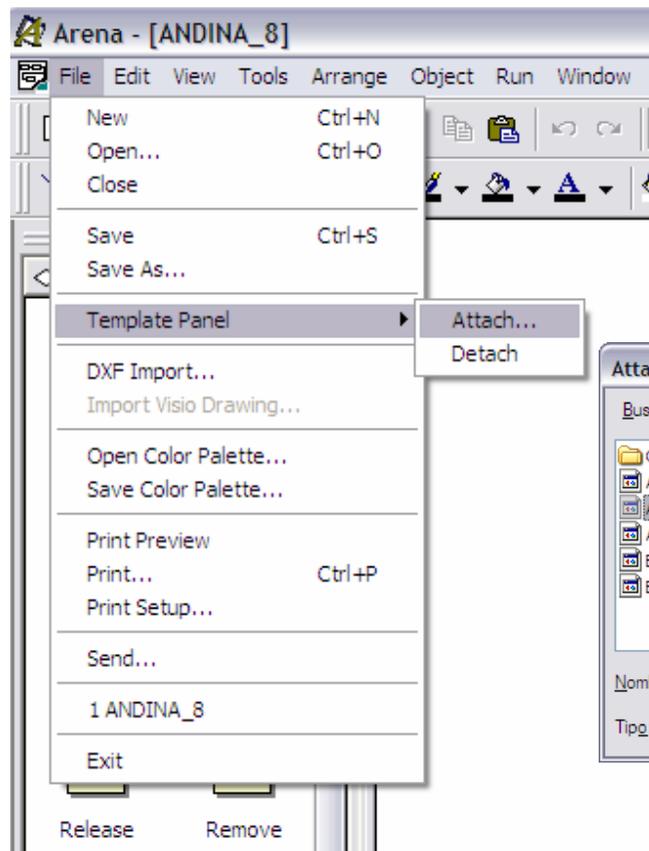
# CONTENIDOS

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- Estación de salida
- Estación de llegada
- Entity transfers
- Reporte avanzado

# TRANFERS

- Añadir pestaña Advanced transfer



# Definir Transporters

The screenshot shows the Arena software interface with the 'Transporter' module selected in the 'Advanced Transfer' panel. The table below shows the configuration for 'Transporter 1'.

Name	Number of Units	Type	Distance Set	Velocity	Units	Initial Position Status	Report Statistics
Transporter 1	1	Free Path	Transporter 1.Distance	1.0	Per Hour	0 rows	<input checked="" type="checkbox"/>

Transporter module from Advanced Transfer panel selected.

# Definir Transporters

Transporter - Advanced Transfer								
	Name	Number of Units	Type	Distance Set	Velocity	Units	Initial Position Status	Report Statistics
1	Transporter 1	1	Free Path	Transporter 1.Distance	1.0	Per Hour	0 rows	<input checked="" type="checkbox"/>

**Nombre del equipo de transporte (LHD, CAMION, PALA, etc. Es importante porque sirve para identificarlos)**

**Número de equipos en la flota (no es la capacidad del equipo)**

**Perfil de distancias entre estaciones que visita el transporter. (Se define en otra parte).**

**Velocidad del transporte (de acuerdo a las unidades especificadas en el perfil de distancias)**

**Estación inicial del transporter**

# Perfil de Distancias

The screenshot shows the Arena software interface with the 'Distance' module selected in the 'Advanced Transfer' panel. The 'Distance' icon in the panel and the 'Distance' module name in the 'Advanced Transfer' table are circled in red.

Distance - Advanced Transfer

	Name	Stations
1	Transporter 1.Distance	0 rows

Double-click here to add a new row.

Distance module from Advanced Transfer panel selected.

# Perfil de distancias

Distance - Advanced Transfer		
	Name	Stations
1	Transporter 1.Distance	0 rows

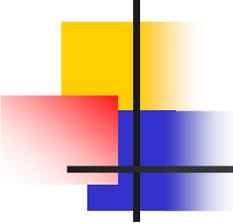
¿Cuáles son las estaciones?

Stations			
	Beginning Station	Ending Station	Distance
1	Station 1	Station 2	1

Double-click here to add a new row.

Transporter al que se le atribuye el perfil de distancias

Distancia entre estaciones donde se mueve el transporter (pueden ser variadas, pero deben especificarse todas una por una)

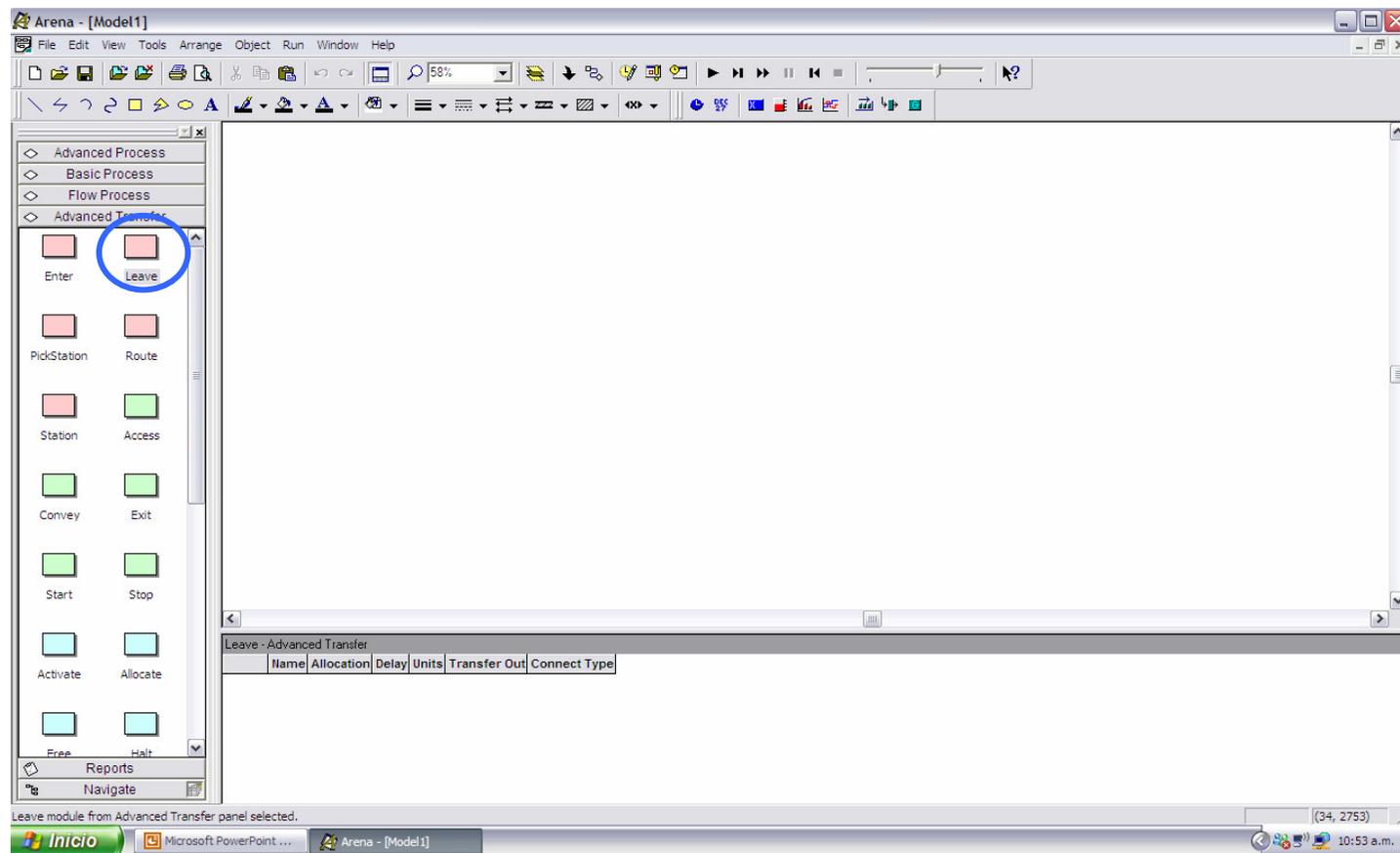


# Tipos de Estaciones

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- De salida (de carguío)
- De llegada (de vaciado)

# Estaciones de carguío



# Estación de vaciado (enter)

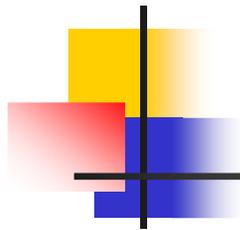
The screenshot displays the Arena software interface for a model named 'Model1'. The 'Advanced Transfer' panel on the left contains various modules, with the 'Enter' module highlighted by a red circle. A red arrow points from this 'Enter' module to a newly placed 'Enter 1' module in the main workspace. Below the workspace, a table provides details for the 'Enter - Advanced Transfer' module.

	Name	Station Type	Station Name	Parent Activity Area	Associated Intersection	Report Statistics	Delay	Allocation	Units	Transfer In
1	Enter 1	Station	Enter 1.Station			<input checked="" type="checkbox"/>	0	Value Added	Hours	None

Enter module from Advanced Transfer panel selected.

(649, 1111)

Inicio Microsoft PowerPoint ... Arena - [Model1] 10:56 a.m.



Nombre de la caja (debe ser único)

Tipo de caja (estación)

Para liberar el transporter una vez que esta vacío

Para identificar que transporter liberar

Nombre de la estación

Tiempo de descarga

Enter

Name: Enter 1

Station Type: Station

Station Name: Enter 1.Station

Station Properties..

Logic

Delay: 0

Allocation: Value Added

Units: Hours

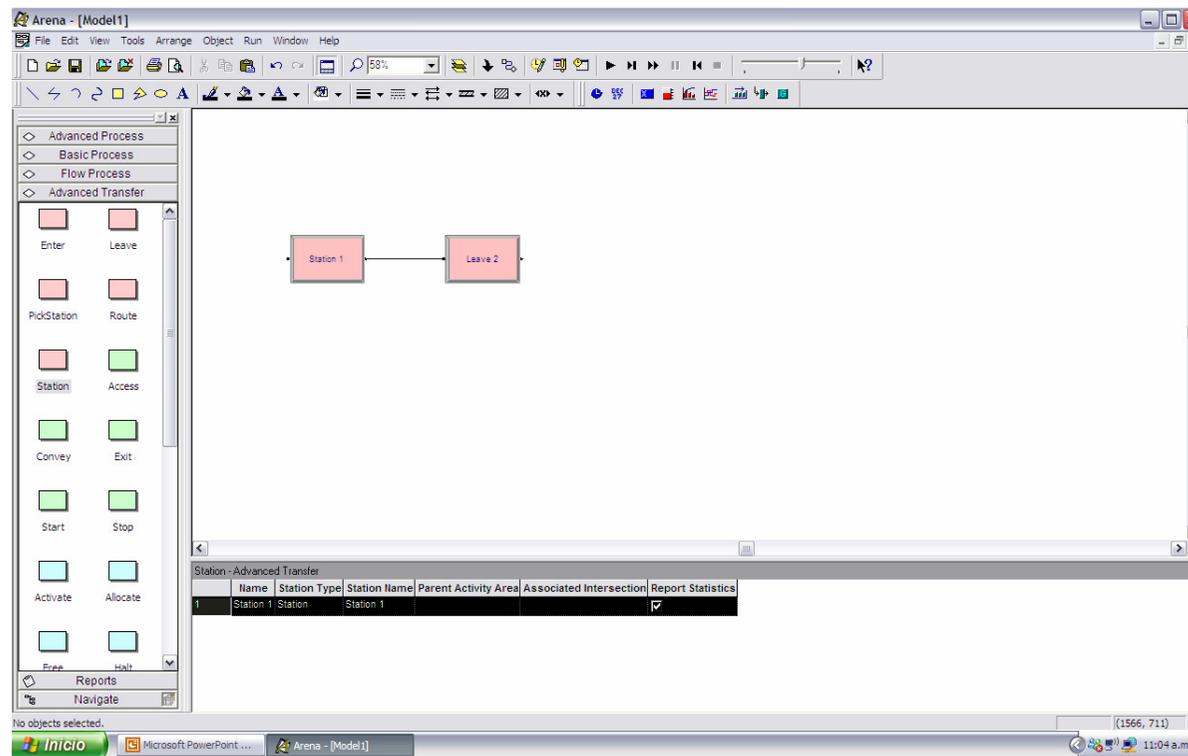
Transfer In: Free Transporter

Transporter Name:

OK Cancel Help

# Estación de carguío (Leave)

- Requiere de una caja "station" contigua para funcionar como estación de carguío.



# Caja Leave

**Name:** Asignacion LHD P1C1

**Allocation:** Value Added

**Delay:** TRIA(30,40,60)

**Units:** Seconds

**Logic**

**Transfer Out:** Request Transporter

**Priority:** ANINT(UNIF(1,100))

**Queue Type:** Queue

**Queue Name:** Asignacion LHD P1C1.Queue

**Transporter Name:** LHDa

**Selection Rule:** Cyclical

**Save Attribute:**

**Connect Type:** Transport

**Station Type:** Station

**Station Name:** Pique C1.Station

OK Cancel Help

Tiempo de carguio

La entidad que llega a la caja (no el transporter) solicita que un transporter la recoja.

Regla de selección de transporters (si es que hay mas de uno en la flota)

Prioridad (si es que existe otra entidad que solicite al mismo transporter) – Random para evitar problemas

Nombre del transporter al que solicitan las entidades que llegan a la caja Leave

Para especificar entre que estaciones se va a mover el transporter que llega a esta estación.

Estación de vaciado (debe ser una caja "enter")

# Caja "Station"

Station

Name: Punto de extraccion P1C1 Station Type: Station

Station Name: Punto de extraccion P

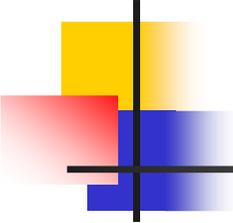
Parent Activity Area: Associated Intersection:

Report Statistics

OK Cancel Help

Nombre de la caja

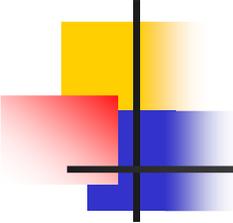
Nombre de la estación (para especificar en el perfil de distancias)



# Ejemplo Practico

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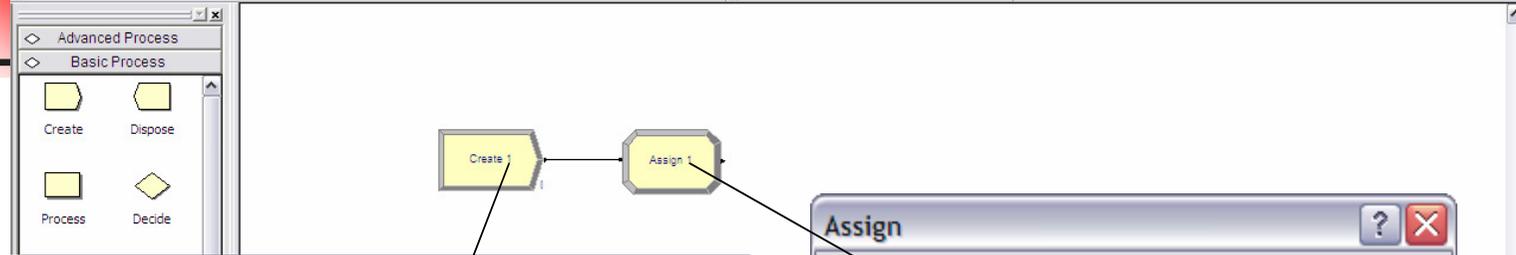
- Sistema Drawpoint-pique, con LHD como equipo de carguío



# Definir Entidades

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- Cada entidad corresponderá a una baldada de mineral.
- Se debe asignar un tonelaje a cada baldada.



**Create**

Name: Create 1 Entity Type: baldada

Time Between Arrivals  
Type: Constant Value: 1 Units: Minutes

Entities per Arrival: 1 Max Arrivals: Infinite First Creation: 0.0

OK Cancel Help

**Assign**

Name: Assign 1

Assignments:  
<End of list> Add... Edit... Delete

OK Cancel Help

**Assignments**

Type: Attribute Attribute Name: tonelaje

New Value:  
TRIA(1.5,1.9,2.3)\*8\*TRIA(0.75,0.85,0.95)

OK Cancel Help

# Estaciones de carguío y vaciado

**Station**

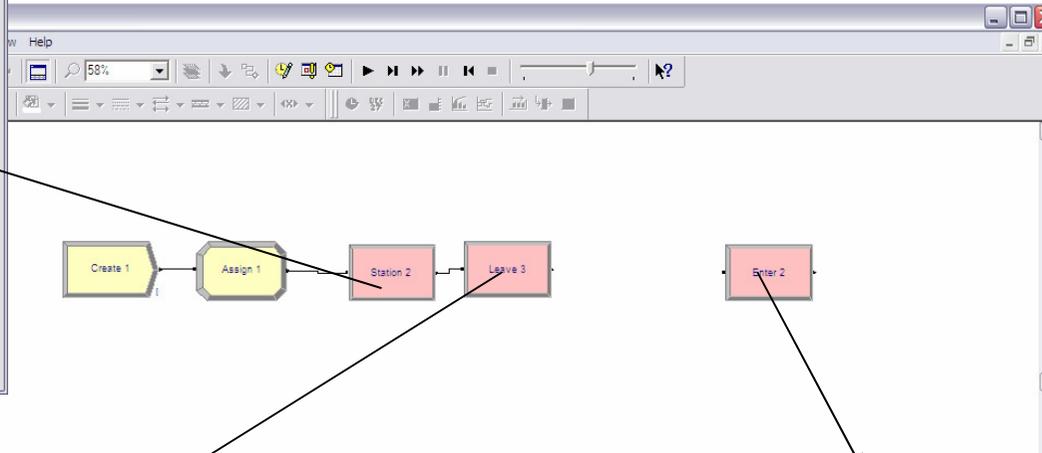
Name: Station 2 Station Type: Station

Station Name: Station 2

Parent Activity Area: Associated Intersection:

Report Statistics

OK Cancel Help



- Station
- Access
- Convey
- Exit
- Start
- Stop
- Activate
- Allocate
- Free
- Halt
- Reports
- Navigate

Enter module from Advanced

Inicio

**Leave**

Name: Leave 3 Allocation: Value Added

Delay: 2 Units: Minutes

Logic:

Transfer Out: Request Transporter Priority: High (1)

Queue Type: Queue Queue Name: Leave 3.Queue

Transporter Name: Transporter 1

Selection Rule: Cyclical Save Attribute:

Connect Type: Transport

Station Type: Station Station Name: Enter 2 Station

OK Cancel Help

**Enter**

Name: Enter 2 Station Type: Station

Station Name: Enter 2 Station Station Properties...

Logic:

Delay: 2 Allocation: Value Added

Units: Minutes

Transfer In: Free Transporter

Transporter Name: Transporter 1 Unit Number:

OK Cancel Help

# Cerrar el sistema

The screenshot displays the Arena simulation software interface. The main workspace shows a process flow diagram with the following components:

- Create 1**: A yellow trapezoidal block representing the start of the process.
- Assign 1**: A yellow hexagonal block representing an assignment step.
- Station 2**: A red rectangular block representing a service station.
- Leave 3**: A red rectangular block representing a departure point.
- Enter 2**: A red rectangular block representing an entry point.
- Dispose 1**: A yellow trapezoidal block representing the end of the process.

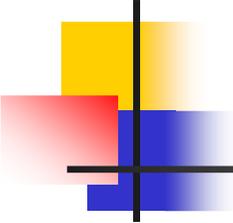
The left-hand pane shows the library of process elements, including:

- Advanced Process
- Basic Process: Create, Dispose, Process, Decide, Batch, Separate, Assign, Record, Entity, Queue, Resource, Variable, Schedule, Set.
- Flow Process
- Advanced Transfer
- Reports
- Navigate

At the bottom of the main workspace, a table titled "Dispose - Basic Process" is visible:

	Name	Record Entity Statistics
1	Dispose 1	<input checked="" type="checkbox"/>

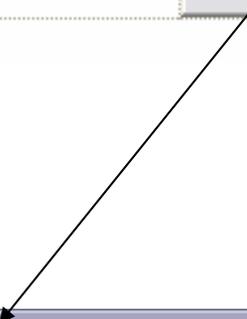
The Windows taskbar at the bottom shows the system tray with the time 11:44 a.m. and the taskbar containing icons for Inicio, Microsoft PowerPoint, and Arena - [Model1].



# Definir transporter

Transporter - Advanced Transfer								
	Name	Number of Units	Type	Distance Set	Velocity	Units	Initial Position Status	Report Statistics
1	Transporter 1	1	Free Path	Transporter 1.Distance	15000	Per Hour	0 rows	<input checked="" type="checkbox"/>

Double-click here to add a new row.



Initial Position Status			
	Initial Position	Station Name	Initial Status
1	Station	Enter	Active

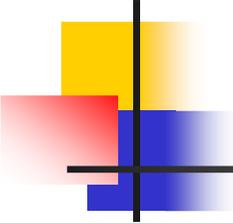
Double-click here to add a new row.

# Definir distancias

Distance - Advanced Transfer		
	Name	Stations
1	Transporter 1.Distance	1 rows

Stations			
	Beginning Station	Ending Station	Distance
1	Enter 2. Station	Station 2	100

Double-click here to add a new row.



# Adicionales

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- Por la licencia educacional, lo mas probable es que el sistema se sature de entidades.
- Para evitar lo anterior se debe restringir el número de entidades que entran en el sistema, pero debe asegurarse que el LHD siempre tenga mineral para cargar.
- ¿cómo se hace?

así

The 'Create' dialog box is shown with the following settings:

- Name: Create 1
- Entity Type: Entity 1
- Time Between Arrivals: Type: Constant, Value: 1, Units: Minutes
- Entities per Arrival: 1
- Max Arrivals: Infinite
- First Creation: 0.0

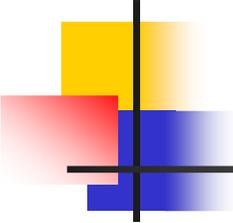
Buttons: OK, Cancel, Help

**Si este campo se vuelve 0 o negativo, se cierra el ingreso de entidades al sistema**

The 'Create' dialog box is shown with the following settings:

- Name: Create 1
- Entity Type: Entity 1
- Time Between Arrivals: Type: Constant, Value: 1, Units: Minutes
- Entities per Arrival: 1-NQ(Leave 3,Queue)
- Max Arrivals: Infinite
- First Creation: 0.0

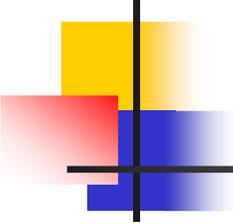
Buttons: OK, Cancel, Help



# Otras cosas útiles

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- Un transporter puede sólo llevar una entidad al mismo tiempo, por lo que se deben agrupar.
- Para agrupar entidades se usa el modulo batch (por ejemplo para agrupar varias entidades antes de cargar un camión, dado que un camión se carga con mas de una baldada, que es la unidad mínima de tonelaje).
- Antes de cerrar el sistema las entidades agrupadas con batch se deben separar con la caja Separate.



# Otras cosas útiles

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- Para detener y activar un transporter en cualquier momento se usan los modulos Halt y Activate.