

# **SimEvents Release Notes**



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## Summary by Version

This table provides quick access to what's new in each version. For clarification, see "About Release Notes" on page 1.

Version (Release)	New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
<b>Latest Version V1.1 (R2006a)</b>	Yes Details	Yes Summary	Bug Reports at Web site	Printable Release Notes: PDF  V1.1 product documentation
V1.0 (R14SP3+)	Yes Details	Not applicable	Bug Reports at Web site	No

### About Release Notes

Use release notes when upgrading to a newer version to learn about new features and changes, and the potential impact on your existing files and practices. Release notes are also beneficial if you use or support multiple versions.

If you are not upgrading from the most recent previous version, review release notes for all interim versions, not just for the version you are installing. For example, when upgrading from V1.0 to V1.2, review the New Features and Changes, Version Compatibility Considerations, and Bug Reports for V1.1 and V1.2.

### New Features and Changes

These include

- New functionality
- Changes to existing functionality
- Changes to system requirements (complete system requirements for the current version are at the MathWorks Web site)

- Any version compatibility considerations associated with each new feature or change

### **Version Compatibility Considerations**

When a new feature or change introduces a known incompatibility between versions, its description includes a **Compatibility Considerations** subsection that details the impact. For a list of all new features and changes that have compatibility impact, see the “Compatibility Summary for SimEvents” on page 7.

Compatibility issues that become known after the product has been released are added to Bug Reports at the MathWorks Web site. Because bug fixes can sometimes result in incompatibilities, also review fixed bugs in Bug Reports for any compatibility impact.

### **Fixed Bugs and Known Problems**

MathWorks Bug Reports is a user-searchable database of known problems, workarounds, and fixes. The MathWorks updates the Bug Reports database as new problems and resolutions become known, so check it as needed for the latest information.

Access Bug Reports at the MathWorks Web site using your MathWorks Account. If you are not logged in to your MathWorks Account when you link to Bug Reports, you are prompted to log in or create an account. You then can view bug fixes and known problems for R14SP2 and more recent releases.

### **Related Documentation at Web Site**

**Printable Release Notes (PDF).** You can print release notes from the PDF version, located at the MathWorks Web site. The PDF version does not support links to other documents or to the Web site, such as to Bug Reports. Use the browser-based version of release notes for access to all information.

**Product Documentation.** At the MathWorks Web site, you can access complete product documentation for the current version and some previous versions, as noted in the summary table.

## Version 1.1 (R2006a) SimEvents

This table summarizes what's new in V1.1 (R2006a):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Yes Details below	Yes—Details labeled as <b>Compatibility Considerations</b> , below. See also Summary.	Bug Reports at Web site	Printable Release Notes: PDF  V1.1 product documentation

New features and changes introduced in this version are described here.

### Replicate Block Supports Partial Replication

The Replicate block supports partial replication and offers more flexibility when you choose complete replication. New parameters in the block's dialog box are in the table below.

Parameter	Description
<b>Replicate entity when</b>	Lets you choose whether the block accepts arriving entities for replication only when all entity output ports are not blocked or whenever at least one entity output port is not blocked. The first option is the default.
<b>If an output port becomes blocked during replication</b>	Determines how the block responds if a departure through one entity output port causes another entity output port to become blocked.
<b>Number of entities departed</b>	Toggles the optional output signal <b>#d</b> , representing the number of departed entities.

## Compatibility Considerations

By default in V1.1 (R2006a), when a departure through one entity output port causes another entity output port to become blocked, the result is a discarded entity with no error or warning message. If this phenomenon occurs in your legacy models, then the result in V1.0 (R14SP3+) might be an error message or incorrect behavior. If you want to learn when this phenomenon occurs in your legacy models that you simulate using V1.1 (R2006a), then set **If an output port becomes blocked during replication** to either Warn and discard entity, or Error.

The default values of the other new parameters added in V1.1 (R2006a) are consistent with the block's behavior in V1.0 (R14SP3+), so legacy models need no changes to accommodate these new features.

If you save a model containing the Replicate block using V1.1 (R2006a), then opening the model in V1.0 (R14SP3+) produces warnings about the parameters that are not in the V1.0 block. For example,

```
Warning: In instantiating linked block 'untitled/Replicate' :
  Replicate block (mask) does not have a parameter named
  'ReplicateEntityWhen'.
Warning: In instantiating linked block 'untitled/Replicate' :
  Replicate block (mask) does not have a parameter named
  'ActionUponBlocking'.
Warning: In instantiating linked block 'untitled/Replicate' :
  Replicate block (mask) does not have a parameter named
  'StatNumberDeparted'.
```

Also, simulating that model under V1.0 causes the block to exhibit its V1.0 behavior, which is to omit a **#d** output signal and to replicate the arriving entity only when all entity output ports are not blocked. Saving the model in V1.0 prevents the warnings from reappearing in V1.0 but also causes the block to exhibit its V1.0 behavior if you later open the model in V1.1.



## Version 1.0 (R14SP3+) SimEvents

This table summarizes what's new in V1.0 (R14SP3+):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Yes Details below	Not applicable	Bug Reports	No

New features introduced in this version are described here.

### Introduction to SimEvents

SimEvents extends Simulink® with tools for modeling and simulating discrete-event systems using queues and servers. With SimEvents you can create a discrete-event simulation model in Simulink to simulate the passing of entities through a network of queues, servers, gates, and switches based on events. SimEvents and Simulink provide an integrated environment for modeling hybrid dynamic systems containing continuous-time, discrete-time, and discrete-event components.

A key concept that SimEvents adds to the Simulink environment is that of *entities*, which are discrete items of interest in a discrete-event simulation. For example, entities could represent messages to be communicated or parts to be assembled. Entities can carry data in one or more scalar structures called *attributes*. For example, attributes could represent destinations of messages or dimensions of parts.

The libraries in SimEvents contain blocks that can

- Create entities
- Store entities in a queue
- Serve or delay entities
- Forbid or allow entities to depart, depending on specified criteria
- Manipulate the paths on which entities travel

- Attach data or timers to entities
- Create plots using data from entities or statistics gathered during simulation
- Manipulate or generate discrete events that can affect the behavior of blocks and entities
- Control the simulation timing in situations where event-driven behavior and time-driven behavior interact

## Compatibility Summary for SimEvents

This table summarizes new features and changes that might cause incompatibilities when you upgrade from an earlier version, or when you use files on multiple versions. Details are provided in the description of the new feature or change.

Version (Release)	New Features and Changes with Version Compatibility Impact
<b>Latest Version</b> <b>V1.1 (R2006a)</b>	See the <b>Compatibility Considerations</b> subheading for each of these new features or changes: <ul style="list-style-type: none"> <li>• “Replicate Block Supports Partial Replication” on page 3</li> </ul>
V1.0 (R14SP3+)	Not applicable