Distributed Computing Toolbox Release Notes

Contents

Summary by Version

This table provides quick access to what is new in each version. For clarification, see About Release Notes.

Version (Release)	New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Latest Version V2.0.1 (R2006a)	No	Yes Summary	Bug Reports at Web site	Printable Release Notes: PDF V2.0.1 product documentation
V2.0 (R14SP3+)	Yes Details	Yes Summary	Bug Reports at Web site	
V1.0.2 (R14SP3)	Yes Details	No	Bug Reports at Web site	
V1.0.1 (R14SP2)	Yes Details	Yes Summary	Bug Reports at Web site	
New Product V1.0 (R14SP1+)	No	Not applicable	Not applicable	

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 with the previous version, 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 Distributed Computing Toolbox.

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.

The Bug Reports database was introduced for R14SP2 and does not include information for prior releases. You can access a list of bug fixes made in prior versions via the links in the summary table.

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 2.0.1 (R2006a) Distributed Computing Toolbox

This table summarizes what is new in Version 2.0.1 (R2006a):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
No	Yes—Details labeled as **Compatibility Considerations**, below. See also Summary	Bug Reports at Web site	Printable Release Notes: PDF V2.0.1 product documentation

Upgrade Distributed Computing Products Together

This version of the Distributed Computing Toolbox is accompanied by a corresponding new version of the MATLAB Distributed Computing Engine.

Compatibility Considerations

As with every new release, you must upgrade both the Distributed Computing Toolbox and the MATLAB Distributed Computing Engine. The toolbox and engine must be the same version to interact with each other.

Version 2.0 (R14SP3+) Distributed Computing Toolbox

This table summarizes what is new in Version 2.0 (R14SP3+):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Yes Details below	Yes—Details labeled as **Compatibility Considerations**, below. See also Summary	Bug Reports at Web site	None

Third-Party Schedulers

The Distributed Computing Toolbox now supports the use of third-party schedulers as an alternative to the MathWorks job manager for running jobs and distributing tasks to the cluster.

Parallel Jobs

The Distributed Computing Toolbox and MATLAB Distributed Computing Engine now support parallel jobs. In a parallel job, the tasks running simultaneously on separate machines are able to communicate with each other during their execution.

Adding Tasks to Running Jobs

If you use the MathWorks job manager to run your jobs, you can now add tasks to running jobs. Typically, you would do this inside your task function. After evaluating some data derived during execution of a task, the task can create more tasks based on that data. Because that task is not complete, its job is still running. The task can access its parent job object with the `getCurrentJob` function.

Engine Process Enhancements

Unicast Communications Between Processes

MDCE processes can now use unicast for all their communications. See the `MDCE_DEF` file for information about setting up this configuration, or see the help for the start scripts; for example,

```
startjobmanager -help
startworker -help
```

Remote Startup of MDCE Processes

Once the mdce service or daemon is running on all your cluster nodes, you can remotely stop and start worker and job manager sessions on those nodes. Use the `-remotehost` flag on the scripts that start and stop job managers and workers. For more information, use the `-help` flag with the process start and stop scripts, for example,

```
startjobmanager -help
stopjobmanager -help
startworker -help
stopworker -help
```

Using Mapped Drives

You can now start and stop the mdce service, job managers, and workers from a mapped drive location. Note that because the worker is installed as a service running under `LocalSystem` by default, it does not have access to mapped network drives.

Monitoring Processes

You can use the `nodestatus` command to display the status of the mdce service and the job manager and worker processes that it maintains. You can use `nodestatus` to monitor the local host or any remote host. For example,

```
nodestatus -remotehost node_XYZ
Job manager lookup process:
    Status                          Running
```

```
Job manager:
    Name                      OurJobManager
    Running on host           node_XYZ
    Number of workers         2

Worker:
    Name                      node_XYZ_worker
    Running on host           node_XYZ
    Status                    Idle
    Job manager               OurJobManager
    Connection with job manager  Connected

Worker:
    Name                      worker2
    Running on host           node_XYZ
    Status                    Idle
    Job manager               OurJobManager
    Connection with job manager  Connected

Summary:
The mdce service on node_XYZmanages the following processes:
    Job manager lookup processes  1
    Job managers                  1
    Workers                       2
```

For a complete list of options, use the `-help` flag with `nodestatus`, for example,

```
nodestatus -help
```

ErrorIdentifier Changed

The ErrorIdentifier string from a canceled task has changed.

Compatibility Considerations

A canceled task now returns the `ErrorIdentifier`

```
distcomp:task:Cancelled
```

In former releases, it returned

```
dce:task:cancelled
```

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Checkpoint Directory Structure Change

This release includes a change to the checkpoint directory structure.

Compatibility Considerations

Because of a change in the structure of the checkpoint directories, the processes (e.g., the job manager) of the MATLAB Distributed Computing Engine Version 2 cannot read the checkpoint directories created by the processes of earlier versions.

Version 1.0.2 (R14SP3) Distributed Computing Toolbox

This table summarizes what is new in Version 1.0.2 (R14SP3):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Yes Details below	No	Bug Reports at Web site	None

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

Rapid Simulation (RSim) Target

The Rapid Simulation (RSim) target has been enhanced such that RSim executables do not check out a Simulink license when run by a worker executing a task created by the Distributed Computing Toolbox.

Version 1.0.1 (R14SP2) Distributed Computing Toolbox

This table summarizes what is new in Version 1.0.1 (R14SP2):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Yes Details below	Yes—Details labeled as **Compatibility Considerations**, below. See also Summary	Bug Reports at Web site	None

Changes introduced in this version are described here:

License Files Upgraded

New license files for this release support certain feature name changes.

Compatibility Considerations

Because of feature name changes, old license files do not work with this versions of the Distributed Computing Toolbox and the MATLAB Distributed Computing Engine. When upgrading the products from Version 1.0 to Version 1.0.1, you must use updated license files.

-port Flag Not Supported

Control of the ports used by the startjobmanager and startworker scripts has moved into the mdce_def file.

Compatibility Considerations

The -port flag for the startjobmanager and startworker scripts is not supported after Version 1.0 of the MATLAB Distributed Computing Engine.

Version 1.0 (R14SP1+) Distributed Computing Toolbox

This table summarizes what is new in Version 1.0 (R14SP1+):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
New product	Not applicable	Not applicable	None

Compatibility Summary for Distributed Computing Toolbox

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 with the description of the new feature or change.

Version (Release)	New Features and Changes with Version Compatibility Impact
Latest Version V2.0.1 (R2006a)	See the **Compatibility Considerations** subheading for this new feature or change: • "Upgrade Distributed Computing Products Together" on page 4
V2.0 (R14SP3+)	See the **Compatibility Considerations** subheading for each of these new features or changes: • "ErrorIdentifier Changed" on page 7 • "Checkpoint Directory Structure Change" on page 8
V1.0.2 (R14SP3)	None
V1.0.1 (R14SP2)	See the **Compatibility Considerations** subheading for each of these new features or changes: • "License Files Upgraded" on page 10 • "-port Flag Not Supported" on page 10
V1.0 (R14SP1+)	Not applicable