Microsoft®
Robotics Developer Studio 2008 R2

Making Robotics Easier

The Microsoft® Robotics Developer Studio 2008 R2 (Microsoft RDS) is a Windows®-based environment for academic, hobbyist, and commercial developers to easily create robotics applications across a wide variety of hardware.

The Microsoft Robotics Developer Studio 2008 R2 includes a lightweight asynchronous services-oriented runtime, a set of visual authoring and simulation tools, as well as templates, tutorials, and sample code to help you get started.

To learn more about Microsoft Robotics Developer Studio 2008 R2, visit:
http://www.microsoft.com/robotics

Components included in Microsoft RDS are shaded in blue. Other components must be acquired separately. Additional charges may apply.

End-to-end robotics development environment

Microsoft RDS provides a wide range of support to make it easy to develop robot applications.

- Interact with robots using Windows or Web-based user interfaces. For example, you can remotely monitor and control a robot using HTML and JavaScript across the Web.

- Visual Programming Language (VPL) enables you to program using simple drag-and-drop (with optional C# code generation).
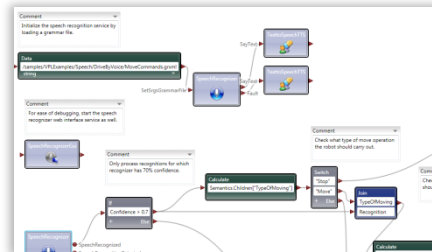
Applications in VPL are easy as connecting blocks

- DSS Manifest Editor provides simple creation of application configuration and distribution scenarios.
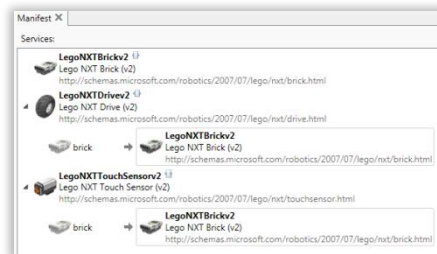
Easy configuration with the DSS Manifest Editor

- DSS Log Analyzer allows you to view message flows and details of executed applications.

Analyze message flows with the DSS Log Analyzer

- 3D physics-based Visual Simulation Environment (VSE) allows you to create applications without hardware.

Run and test applications using Visual Simulation Environment with integrated NVIDIA® PhysX™ real-time physics engine

Sample apartment VSE simulation environment

Sample outdoor VSE simulation environment

Sample urban VSE simulation environment

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Lightweight asynchronous services-oriented runtime

Microsoft RDS includes a programming model that makes it easy to develop asynchronous, state-driven applications.

- Concurrency and Coordination Runtime makes it easier to handle asynchronous input and output, eliminating the conventional complexities of manual threading, locks, and semaphores.

- Lightweight state-oriented Decentralized Software Services framework enables you to create program modules that can inter-operate on a robot and on connected PCs using a simple, open protocol.

- Separation of code and state enables flexible Windows-based and Web-based user interfaces.

- Flexible failure handling and late-binding provides an improved design for application resiliency and maintenance.

Scalable and extensible platform

Microsoft RDS provides a common programming framework that can be applied to support a wide variety of robots, enabling code and skill transfer.

- Composition-based model allows you to write high level functions independent of lower level services, better enabling the transfer and reuse of code across robots.

- Easily add to or extend the function-ality by providing your own customized hardware or software services or integrate services provided other vendors.

- Support for on-board robot-based and wired and wireless remote PC-based application scenarios using conventional and customized message transports.

- Templates, tutorials, and sample code for Visual Studio and .NET programming languages enables support for Windows XP, Windows Vista, and Embedded CE scenarios.

System Requirements

Application development and runtime deployment is supported on the following operating systems:

- Desktop OS: Windows® XP (all editions including x64), Windows Vista® (all editions including x64).

- Server OS: Windows Server® 2003 R2 (all editions including x64; Windows Server® 2008 (all editions including x64).

Runtime deployment is only supported on the following operating systems:

- Windows® XP Embedded, Windows® Embedded CE 5.0, Windows® Embedded CE 6.0

The Toolkit requires and installs:

- .NET Framework 3.5 SP1

- .NET Compact Framework 3.5

Microsoft Robotics Developer Studio 2008 R2 Editions			
Components	Standard	Academic	Express[1]
Visual Programming Language (VPL)			
• Drag-and-drop application development	Yes	Yes	Yes
• C# code generation	Yes	Yes	No
• Distributed application design	Yes	Yes	No
Visual Simulation Environment (VSE)			
• Loadable entities	Unlimited	Unlimited	64
• Editor mode	Yes	Yes	No
• Floorplan editor	Yes	Yes	No
• File format support	.obj, .x, .dae[2]	.obj, .x, .dae[2]	.obj, .x
• Apartment environment	Yes	Yes	Yes
• City environment	Yes	Yes	No
• Outdoor environment	Yes	Yes	No
DSS Manifest Editor (DSSME)			
• Drag-and-drop application configuration	Yes	Yes	Yes
• Distributed application design	Yes	Yes	No
Compact Framework Support[3]	Yes	Yes	No
CCR and DSS Runtime[4]			
• Redistribution rights	Yes	Yes	No

[1]Express Edition includes: VPL Express, VSE Express, DSSME Express

[2]COLLADA (digital asset exchange) file format

[3]Support for Compact Framework 3.5 enables support for Windows CE, Windows Embedded CE & Windows Mobile devices (additional details can be found at: http://msdn.microsoft.com/en-us/library/ms172550.aspx)

[4]CCR = Concurrency & Coordination Runtime; DSS = Decentralized Software Services

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