

# Integration Expert (IX) v1.0 for Windows NT

Development and deployment tools for embedded Windows NT systems

### **Product Overview**

Integration Expert gives you everything you need to define, analyze, integrate, and deploy Windows NT embedded systems. The innovative new tools provided by Integration Expert combined with the industry standard Microsoft Developer Studio make it easy to get powerful results fast !

Integration Expert looks very much like the Microsoft Developer Studio. This similarity is no accident -- we wanted to make developers feel at home using IX! Integration Expert has been designed to provide the best of both worlds by delivering the most popular features of proprietary embedded systems development tools for use in conjunction with the industry standard Microsoft Developer Studio. The resulting combination empowers millions of existing Microsoft developers who would normally build desktop applications to now focus on embedded system development. At the same time, the millions of existing embedded system developers will suddenly find the Integration Expert tool suite to be a desirable replacement for a wide variety of custom proprietary tools that do not offer the advantages of the Microsoft Developer Studio.

Integration Expert is implemented as a standalone application and a Microsoft Developer Studio add-in. The stand-alone application allows users to easily select components from a component gallery, add their own user defined components, perform a wide variety of target and application performance analysis functions, and finally generate a bootable target image. The Microsoft DevStudio add-in allows developers to quickly calculate total application disk and memory footprints, analyze application/library inter-dependencies and deploy the application with all required components on the target embedded system while working in the Microsoft environment.

## **Features and Benefits**

**Modeling and Visualization** - IX provides a visual decomposition of the target including applications and operating system software. The visual display shows the relationships and dependencies between various system

objects, providing developers with a comprehensive view of the software to be included on their embedded system.

**Configuration of Windows NT** - IX provides visual tools to manage dependencies between objects, and manipulate the registry and file system.

**Optimization of Windows NT** - IX facilitates the minimization of the file system and registry through elimination of duplicate and unnecessary components, as well as through analysis tools which determine the actual runtime requirements of an application.

**Component Gallery** - the IX Gallery allows users to visually select and integrate a minimal NT operating system, Microsoft utilities and applications and third party application components. Through the Intrinsyc Internet web site, developers and OEMs can download updated and new components.

*Input, Analysis, and Manipulation Tools* -IX provides tools to import a wide variety of data types and to set-up and change data. IX also provides application, operating system, and dependency analysis tools to populate and manipulate the data model.

*Familiar interface* – IX for Windows NT integrates and extends Microsoft's DevStudio and other third party development products and can invoke key analysis capabilities from IX buttons added to the Microsoft DevStudio toolbar.

**Powerful views for simple target definition** - Component Gallery View, File System View and Registry View give the developers full insight into their target definition.

*Easy target generation* - developers can select configurable application options and properly define the target system configuration. A large portion of this task is automatically performed by IX, which simply ensures that the user-specified components are adequately supported by necessary hardware configuration and drivers, required system services, and application components. Generates bootable targets directly to disk or flash media, or images for network or CD-ROM installation.



#### **Development Process Overview**

Integration Expert allows users to define their target system by selecting and configuring components that represent the physical hardware, operating system, application, peripherals, etc. The component gallery supplied with IX contains many standard hardware and software components. Developers can use these standard gallery components or create their own with IX analysis tools. Users can easily navigate through their target system, inspecting the component hierarchy and dependencies, target file system, and target registry. Additional information about analysis and build processes is provided in an output view.

IX provides a powerful suite of analysis tools to help build and integrate high-quality minimum footprint systems. These tools help the user to deal with complex, ever-changing application software, operating systems, device drivers, and configuration data. Unlike systems that rely on hand-coded databases to assist in this task, IX is highly automated and can repeat analysis operations again and again when inevitable changes take place.

Some of the analysis capabilities include:

- Dependency Analysis -- DLL Imports, Run Time DLL Analysis, File Access Analysis, etc.
- Dependency Conversion -- converts
   dependencies into components.
- Dependency Reduction -- convert dependencies on multiple files into dependencies on components.
- Unnecessary Component Elimination -- find unnecessary components, find duplicate registry values, find duplicate files.
- Dependency Checking
- Footprint Calculation

IX provides powerful tools that allow you to configure the target operating system as easily as your desktop system while maintaining the smallest possible footprint. Using an interface similar to the Control Panel, the user can setup the target system's display, add and remove system fonts, configure network support, add unusual device drivers, etc. Users can also perform analysis to determine which operating system components they don't need.



IX determines the exact combination of files and registry entries required for the application, and copies them into the correct directories on the target media. Developers select configurable application and target system options at this time. A large portion of this task is automatically performed by IX, which simply ensures that the user-specified components are adequately supported by necessary hardware configuration and drivers, required system services, and application components.

Finally, Integration Expert generates bootable targets directly to disk or flash media, or images for network or CD-ROM installation.

#### **Contact Information**

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#### **Specifications**

Development Environment	<ul> <li>System Requirements:</li> <li>Microsoft Windows NT Workstation operating system version 4.0 or later</li> <li>Microsoft Visual C++ 5.0</li> </ul>	<ul> <li>Microsoft Developer Network Library</li> <li>32 MB RAM</li> <li>50 MB hard disk space</li> <li>Additional tools and information on compact discs: 189 MB</li> </ul>