

# MANTIS and AD/Advantage

Rapid Application Development for Android™, iOS, OS X®, Windows®, Windows Server®, Linux, UNIX and OpenVMS

## MANTIS Delivers

- High value
  - Improved quality and reliability of production applications
  - Optimized developer productivity
  - Complete integration at the data, application and system levels
- Low cost
  - Reduced development resources
  - Minimal training to be productive
  - Highly effective access to industry-standard data stores
- Rapid ROI
  - Rapid delivery of high-performance applications
  - Reduced application maintenance time
  - Reduced effort in customizing "off-the-shelf" packages
- Low risk
  - Uses open industry standards such as SOAP, XML, HTTP, HTML and TCP/IP proven technology
  - Prototyping identifies and eliminates potential problems early in the development cycle
  - World-class 24x7 support

**Read on to find out how!**



## Rapid Application Development for Thin-Client/Server-Based Applications

MANTIS is a complete beginning-to-end rapid application development system, offering advanced capabilities for both the developer and the end-user, including:

- A service-oriented architecture
- Web-based rapid application development
- Thin-client deployment
- Prototyping for high-quality system design
- A full-function programming language
- Form and file generation tools
- An extremely short language learning curve
- Open integration with other applications and systems

MANTIS addresses the entire application development cycle, from the initial design phase through post-installation maintenance. This ensures that applications are reliable and responsive. MANTIS facilitates complete integration, not just at the data level, but also with other applications, languages and other Cincom products. MANTIS enables "intelligent" integration because you can programmatically apply business logic to the data and processes.

# A Collaborative Development Environment

MANTIS developers are more productive because they can design prototypes; create transaction screens/forms/web pages and reports; define logical data views; write structured procedures; and dynamically test, correct, document, secure and release applications for production in a single, integrated, interactive session.

The unique capabilities of MANTIS combine to significantly improve the quality and effectiveness of all applications, while providing the power to handle your most sophisticated development requirements. MANTIS delivers this collaborative development environment by providing a rich set of components for faster system development, testing and implementation.

## MANTIS Studio

Developer productivity enhancements to MANTIS Studio continue to make it the premier development and maintenance environment for MANTIS applications. MANTIS Studio is a fully self-contained developer's suite consisting of:

- An Eclipse-based developer's workspace
- MANTIS Web (with an Application Server)
- A Windows MANTIS Server

MANTIS Studio provides a complete, feature-rich Integrated Development Environment (IDE) supporting the development and maintenance of any MANTIS application, including the new mobile development capabilities for Android and iOS.

MANTIS uses the Luna build of Eclipse, which includes improvements to the user interface and navigation as well as new features such as Split Editors and optimized support for multi-monitor setups.

The new Flow tab shows a MANTIS program's logic flow, which is useful when you review unfamiliar code. It displays a diagram with labeled symbols for each program statement and connecting arrows showing logic flow.

## Mobile Development

You can easily create an Android project associated with your existing MANTIS Server and Web Tools Project that enables you to build packages to install on devices running Android. MANTIS processes can take advantage of Android for functions like alarms, alerts, audio, email, GPS, the camera, etc. Data Access for processes can use SQLite as well as MANTIS files.

## Integrated Debugger

MANTIS Studio includes a graphical interface debugger that enables you to detect and diagnose errors in your programs running either locally or remotely. The debugger allows you to control the execution of your program by setting breakpoints, stepping through your code and examining the contents of variables.

The debugger has a client/server design so you can debug programs running remotely on other systems in the network as well as programs running locally on your workstation.

The debug client runs inside the workbench on your workstation. The debugger server runs on the same system as the program you want to debug. This could be a program launched on your workstation (local debugging) or a program started on a computer that is accessible through a network (remote debugging).

## MANTIS Web

MANTIS Web is comprised of the MANTIS Server (Cincom's proprietary Rapid Application Development system) and MANTIS Web, an open-source middleware web application. MANTIS Web extends MANTIS programming into the web programming environment for:

1. New applications, allowing collaboration with many open standards and technologies, including TCP/IP, HTTP, XML, SOAP, HTML and JavaScript. This open approach allows MANTIS to participate in Service-Oriented Architectures (SOAs).
2. Rich Internet Applications (RIAs) via embedded AJAX support using the popular jQuery implementations.
3. Web-enabling existing MANTIS applications and potentially evolving them into RIAs.
4. Sharing information with other applications and technologies in an open, internet-enabled fashion.

MANTIS Web creates MANTIS entities as XML documents for access via a web browser and/or web design tools. MANTIS Web can also send MANTIS information to non-MANTIS applications in a web services style.

MANTIS Web makes it easy to define XML document structures. MANTIS Studio and the Universal Export Facility (UEF) accept XML formatted data for MANTIS objects. Conversely, MANTIS Studio and UEF can generate MANTIS objects as XML document structures (both XML and XSL).

Productivity aids such as XSLT (Extensible Stylesheet Language Transformation) are built-in features of MANTIS Web that transform MANTIS-generated XML data into an HTML format (default). Since MANTIS Web utilizes an "open source" methodology, users can transform the XML and XSL into any format needed by any receiving application.

### Native XML File Views

Native XML file views enable MANTIS developers to use MANTIS File Design to create XML file layouts. MANTIS can then access a file in XML format as a native MANTIS file, allowing input and output of XML formatted data. This facility also allows for the creation and usage of XML messages for Web Service Calls.

### Web Services Calls

Using the MANTIS “four verb” methodology, you can invoke Web Services routines directly from your MANTIS programs. The results of the “call” are available to your MANTIS application for further action.

### WSDL Generation Facility

MANTIS provides an easy-to-use facility that enables you to define Web Services from your MANTIS programs and screens. With this automated Web Services Description Language (WSDL) generation, you can package your business processes as services for easy interaction with other SOA-enabled participants.

### PDF Output

When performing output printing (OUTPUT PRINTER) with MANTIS Web, the output will be directed to a local PDF file that will be displayed as another tab in your browser or as another window.

### Interface Support

- **COBOLIT** – Internal interfaces written in COBOLIT are supported on platforms where available.
- **Java (Windows, Linux and OpenVMS)** – You can write Java interfaces in order to integrate MANTIS applications with Java applications.
- **Windows programming languages** – You can write interfaces to integrate MANTIS applications with applications written in VB, C++ and ActiveX/.Net.

### MANTIS Language Block Comments

Block commenting of code is available as well as single-line commenting.

### MANTIS Message and Codes Guide

Help is available in searchable HTML format as well as PDF.

### Documentation

All documentation is available in HTML help format and is accessible and searchable from the MANTIS Studio Help menu.

## AD/Advantage

The AD/Advantage component of MANTIS is a fully integrated environment that can standardize (or focus with a rigorous methodology) much of the development activity.

## Supported Platforms

Users can easily move applications from one platform to another with little to no programming changes required.

Hardware	Operating System(s)
Smart devices via browser	Internet
Touchscreen mobile devices	Android version 3.1 and above, Apple® iOS
Alpha	OpenVMS
HP	HP/UX
Intel	SCO, UNIXWARE, Linux Red Hat, Windows Server, Windows XP/7/8
Itanium	OpenVMS
Mac®	OS X
RS/6000	AIX
SPARC	Solaris, SunOS
zSeries	SUSE Linux

## Supported Platforms for Interoperating MANTIS Systems

Hardware	Operating System(s)
zSeries	z/OS, z/VM, z/VSE, VSE/ESA

## Application Servers Supported by MANTIS

Oracle AS (OAS) 10g, Release 2 (10.1.2) and above
WebSphere Application Server (WAS), Release 6.0 and above
Apache Tomcat, Version 5.5 and above
JBOSS, Release 4.0 and above
BEA WebLogic, Release 8.1.4 and above

# Data Access

All file and database specifications are maintained outside of the MANTIS program. This insulates the programs from physical data structures, providing an exceptional level of data independence. Regardless of which file or database technique is used, MANTIS programs have access to files and data using only four access verbs: GET, INSERT, UPDATE and DELETE or via industry-standard SQL.

Native Access Support	
<b>Databases</b>	Cincom® SUPRA® PDM Cincom SUPRA SQL DB2 Oracle Microsoft® SQL Server® Microsoft Access® Rdb RMS SQLite Any Database with an ODBC Driver
<b>File systems</b>	C-ISAM, MISAM, Native Sequential
<b>Message-oriented middleware</b>	WebSphere MQ

Extended Access Support via MANTIS Web*	
<b>Databases</b>	SUPRA PDM SUPRA SQL DB2 Oracle MS SQL Server Rdb
<b>File systems</b>	VSAM C-ISAM MISAM Native Sequential
<b>Message-oriented middleware</b>	WebSphere MQ
* These DBMSs and file systems can reside on any MANTIS-supported platform.	

MANTIS also provides special interface routines that make it easy for MANTIS applications to access any database structure or file organization. So you can continue to use the existing data structure that you've already invested in and have become so familiar with.

## About Cincom

Since 1968, Cincom has helped thousands of clients worldwide by solving complex business problems with its software and services. For more information about Cincom's products and services, contact Cincom at 1-800-2CINCOM (USA only), send an email to [info@cincom.com](mailto:info@cincom.com) or visit the company's website at [www.cincom.com](http://www.cincom.com).



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