Defining factors of
Deployment

Revelation Software specializes in tools that enable rapid development and easy deployment of applications. Revelation prides itself on the quality and variety of deployment options offered to our customers.

With comprehensive deployment products such as Revelation Server Deployment Packs, Development-Ready Server Deployment Packs, and Web Deployment Packs, developers can easily and cost-effectively deploy their applications to single or multiple users using workstations, file servers, or the World Wide Web.

REVELATION
SOFTWARE

TABLE OF CONTENTS

Defining Factors of Deployment

Introduction

Revelation Software specializes in tools that enable the rapid development and easy deployment of packaged and custom line-of-business applications. Revelation provides developers with environments where applications can be cost-effectively maintained and evolved.

Revelation has created a product line of deployment tools for the OpenInsight and Advanced Revelation developer. OpenInsight for Workgroups and Advanced Revelation are market-leading environments for the design, development, maintenance and deployment of a robust class of business applications.

The following definitions are important to understanding your deployment options:
♦   **Standalone** applications are deployed to individual workstations for single users.
♦   **Multi-user** applications are deployed to a file server for multi-user access with locking.
♦   **Runtime** deployment offers users the ability to view and run an application without the capability to make any changes or modifications to the application.
♦   **Development-ready** deployment offers users access to all development features which lets them make changes to the application and/or perform database administration.

The following describes briefly some of the deployment features and products that are offered by Revelation:
♦   The **OpenInsight Runtime Deployment Kit (RDK)** enables developers to create standalone, runtime or development-ready applications. The RDK is also used to create maintenance releases and upgrades for your applications. The RDK is delivered as a feature of the OpenInsight Development license.
♦   The **Server Deployment Pack** licenses multiple users to access a runtime application installed on a network.
♦   The **Development-Ready Server Deployment Pack** licenses multiple users to access a development-ready application installed on a network.
♦   The **Web Deployment Pack (WDP)** licenses an unlimited number of web browsers to access a runtime or development-ready application installed on a web server.

This paper is a valuable deployment resource to assist both developers and users in understanding Revelation Software's deployment options. This resource also describes our licensing requirements. Our licensing guidelines ensure that we receive fair value for our innovations and have the resources to provide an ongoing continuum of development capabilities.
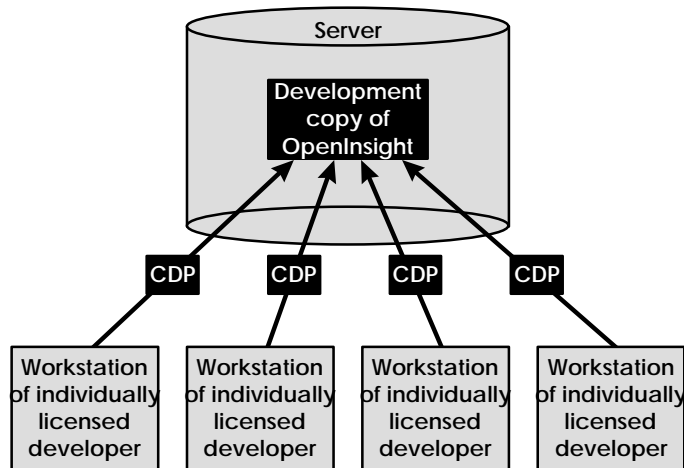
Development Licensing

OpenInsight for Workgroups is a repository-based development environment. It provides professional development teams the means to rapidly design, implement, evolve and scale high performance business applications. The OpenInsight development environment is licensed per developer. Each individual who develops, tests, supports, maintains or customizes applications with OpenInsight must be individually licensed. A development copy of OpenInsight provides each developer with a single user license and unique serial number.

In some development shops, development teams prefer to work from a single repository. By placing a copy of OpenInsight on a network, multiple developers can coordinate their activities and share/reuse tables and application components. Collaborative Development

Pack (CDP) diskettes must be applied to the networked copy of OpenInsight to enable a multi-user development environment.

A Collaborative Development Pack is included with each development copy of OpenInsight for Workgroups. When a CDP is applied to the networked copy of OpenInsight, it increments by one the number of concurrent users that can access that copy of OpenInsight. For example, if four developers require access to a networked copy of OpenInsight four CDP diskettes must be applied to the copy of OpenInsight installed on the network.

A unique feature of OpenInsight's development license is that it allows a developer to work from a networked version of OpenInsight in addition to having a local copy on their workstation if desired. This gives developers more flexibility in their development styles.

DEVELOPMENT LICENSING AT A GLANCE	
▲Scenario	➡Solution
▲Single developer wants to develop an application	➡Purchase development copy of OpenInsight.
▲Team of developers wants to collaboratively develop an application	➡Purchase a development copy of OpenInsight for each developer on the team ➡Install one copy of OpenInsight on a network ➡Apply the Collaborative Development Pack for each properly-licensed developer to the networked copy.

Deployment Decisions

After application development is complete, important deployment decisions must be made. Does the user need a standalone, turnkey application? Does the user need the ability to make modifications to the application? Does the user require some combination of both of these environments? Is this a single user or multi-user environment? These are just some of the questions to be considered when deciding on how to deploy an application.

If the application requires users to change or modify the application, or if the application requires the creation or modification of database components (for example files, dictionaries, indexes) or application components (for example reports, forms, programs, etc), the application must be deployed using the development-ready deployment model. This requires the application of Development-Ready Server Deployment Packs (DRSDPs).

If the developer wants to deliver a locked down application, it can be deployed using the runtime deployment model. A runtime application enables a user to run the application, but not modify it. The OpenInsight license permits a developer to deploy an unlimited number of single user runtime applications. The application can be installed on a network and multiple users can be added by applying Server Deployment Packs (SDPs).

Keeping pace with industry trends, Revelation Software introduced web-enabling capabilities for applications in OpenInsight for Workgroups. These features extend the life and breadth of audience for not only OpenInsight applications, but for Advanced Revelation applications as well. To enable access to your application via web browsers, you must use the web deployment model. This requires the application of the Web Deployment Pack (WDP).

In the event that the developer wants to provide the ability to perform maintenance that is not licensed under the runtime deployment model but does not want that functionality to be distributed to every end user, a full development copy of OpenInsight may be applied to the runtime system to perform those development-style functions.

DEPLOYMENT DECISIONS AT A GLANCE	
▲Scenario	➡Solution
▲You are ready to deploy your application	➡Select a deployment model.
	Runtime deployment
	Development-ready deployment
	Web deployment

Development-Ready Deployment

Development-Ready deployment provides an OpenInsight development environment and the appropriate number of licenses permitting users to modify an application. With Development-Ready deployment, knowledgeable users can change an application's entry screen formats, create new reports, write BASIC+ code or perform database maintenance, for example. If your application requires any forms, data elements, reports, etc. to be dynamically generated, you must use the Development-Ready model. The general rule is: when in doubt, use the Development-Ready deployment model. The deployment product that provides multiple users with these capabilities is the Development-Ready Server Deployment Pack (DRSDP).

PARTIAL COMPARISON OF DEVELOPMENT-READY vs. RUNTIME CAPABILITIES		
Option	Development-ready	Runtime
View pre-defined reports	Yes	Yes
Print pre-defined reports	Yes	Yes
Create new reports	Yes	**No**
Access Database Manager to modify users	Yes	Yes
Modify OpenInsight table indexes	Yes	**No**
Use Table Browser	Yes	Yes
Create or modify OpenInsight tables	Yes	**No**
Modify user interface components	Yes	**No**
Use System Editor	Yes	**No**
Compile BASIC+	Yes	**No**
Dynamically create forms	Yes	**No**
Dynamically create data elements	Yes	**No**
Dynamically create reports	Yes	**No**

This is not a complete list of options that must be considered when deciding between development-ready and runtime models. Any questions should be directed to Revelation Software. When in doubt, deploy your application using the Development-Ready deployment model.

The Development-Ready Server Deployment Pack delivers development/deployment licenses for one, three, five, or an unlimited number of users. If your end user is a "standalone" user, you are not required to purchase a DRSDP; instead, you can deploy the application to a single development copy of OpenInsight.

DEVELOPMENT-READY DEPLOYMENT AT A GLANCE	
▲Scenario	➡Solution
▲Standalone user requires development and modification rights to an application	➡Deploy the application on a development copy of OpenInsight.
▲Networked end users require development and/or modification rights to an application	➡Deploy the application with Development-Ready Server Deployment Packs accounting for the appropriate number of users.

Runtime Deployment

Runtime deployment delivers an application which executes outside of a development environment. The application cannot be changed or modified without installing an upgrade to the runtime application environment. The runtime model is appropriate when the application does not enable the creation or modification of database components (for example files, dictionaries, indexes) or application components (for example reports, forms, programs, etc). If any such creation or modification features or rights are required, the development-ready deployment model must be used.

OpenInsight's Runtime Deployment Kit (RDK) features are used to create runtime deployments. The RDK enables developers to efficiently and reliably extract all components of an application and provide them to end users.

A feature of the OpenInsight development license provides the developer with permission to distribute an unlimited number of single-user copies of runtime applications. Single-user runtimes may be placed on an unlimited number of individual computers as long as they are not accessed via a network. The installation of a single-user runtime application on a network is a violation of Revelation's licensing, and could potentially result in the corruption of data.

Multi-user access can be provided for a runtime application by installing the runtime application on a file server and applying Server Deployment Packs (SDP) to the runtime application. An SDP licenses three, five, or an unlimited number of users to access a networked runtime application. SDPs may only be applied to a single runtime application on a single file server. If the application is deployed on multiple servers, additional SDPs must be purchased for the appropriate number of users accessing the application on each server.

| RUNTIME DEPLOYMENT AT A GLANCE	
▲Scenario	➡Solution
▲Deploy an unlimited number of single-user runtime applications.	➡Deploy application with the RDK module of OpenInsight.
▲Deploy a multi-user runtime application.	➡Deploy application with the RDK module of OpenInsight. ➡Apply Server Deployment Packs accounting for the appropriate number of users.

Web Deployment

In 1997, Revelation Software introduced the ability to implement interactive web applications and transaction servers for existing applications. Typical OpenInsight forms, together with event and database logic, can be transformed into interactive browser-based applications. OpenInsight becomes an application server to work interactively with a web server, delivering

results rendered in HTML. This enables users to access the application via a web browser, either within or outside the firewall.

The license to access an application via a web browser is delivered via the Web Deployment Pack (WDP). The WDP is required when deploying applications to the Internet or an Intranet. The WDP provides a license for an unlimited number of users to access a web-enabled application using a web browser.

A Web Deployment Pack is installed on one web server and developers deploy their web extensions to this WDP. Web extensions can publish reports and data, and enable users (provided the appropriate access rights are granted) to view, add, delete, or update data from their web browsers.
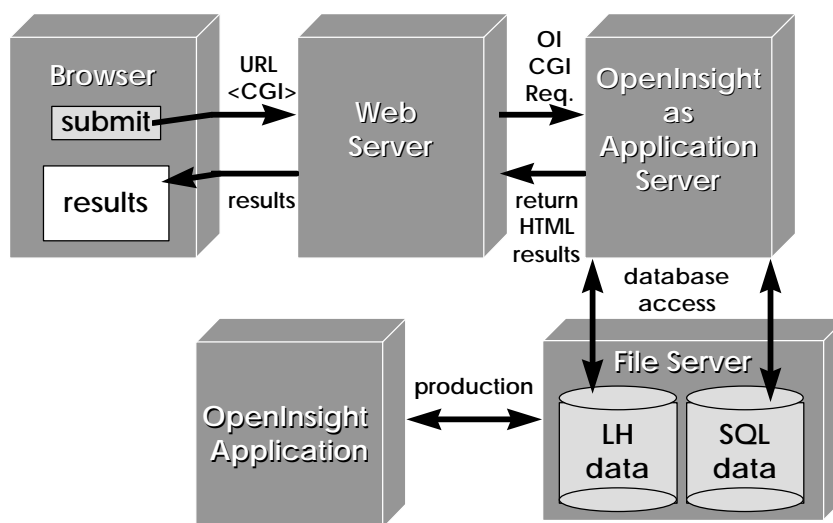
OpenInsight implements these capabilities via the Common Gateway Interface (CGI). Specifically, OpenInsight's CGI program, which is located on the web server, receives a request from the browser. OICGI then passes the request to OpenInsight, running on the web server. OpenInsight processes the request and formats the results as an HTML page which is returned to the browser.

The WDP has no effect on the licensing of concurrent networked users. All users who require standard network access to the application must be properly licensed using the appropriate Server Deployment Packs or Development-Ready Server Deployment Packs. The WDP licenses access to one web-enabled application running on one web server. If additional web servers are required, a separate WDP license must be purchased for each web server the application will run on.

WEB DEPLOYMENT AT A GLANCE	
▲Scenario	➡Solution
▲Provide access to the application via a web browser.	➡Deploy web extensions with the Web Deployment Pack.

Extend Advanced Revelation Applications to the Web

Developers have invested time and money creating mission-critical applications with Advanced Revelation, the acclaimed precursor to OpenInsight. Now, developers can easily publish their Advanced Revelation data to the web. With the OpenInsight development environment and a Web Deployment Pack (WDP), developers can extend their Advanced Revelation (version 3.1 or above) data or application to the web providing access to an unlimited number of browser users.

The process for extending Advanced Revelation applications to the web is simple:
- ♦ Purchase and install the OpenInsight development environment for each developer.
- ♦ Create an application in OpenInsight with the same name as the Advanced Revelation application.
- ♦ Attach the existing Advanced Revelation data files to the OpenInsight application.
- ♦ Determine how to extend the Advanced Revelation application.
- ♦ Build the components of the OpenInsight web enabled application.
- ♦ Use the OpenInsight AppBackup utility for your web extensions.
- ♦ Purchase and install a Web Deployment Pack either on the web server or a file server which the web server has access to.
- ♦ Create an application using the same name as the application containing your web extensions.
- ♦ On the WDP, use the AppBackup utility's restore feature to copy the web extensions to the WDP, making sure the Advanced Revelation tables are attached.

We have provided more detail on extending Advanced Revelation applications to the web in a white paper entitled "Extending Your Advanced Revelation Applications." This white paper is available on our web site at www.revelation.com, or by calling our Customer Care Department at (800) 262-4747 or (978) 946-7100.

EXTENDING ADVANCED REVELATION APPLICATIONS TO THE WEB AT A GLANCE	
▲Scenario	➡Solution
▲Provide access to an Advanced Revelation application via a web browser.	➡Create web extensions using the OpenInsight development environment. ➡Install the Web Deployment Pack. ➡Attach your Advanced Revelation data.

Data Warehousing

Data warehousing offers a process to help manage an organization's data. With this approach, all of an organization's data is deposited to a single location, known as a warehouse.

OpenInsight delivers data warehousing features to provide developers with new ways to make native OpenInsight or Advanced Revelation (3.1+) data available in SQL Server, Oracle or any ODBC-compliant databases. This functionality requires that the application be deployed using the development-ready deployment model. It also requires users to have properly-licensed copies of the database that will contain the data warehouse, such as Oracle or SQL server.

Warehousing procedures consist of BASIC+ code which contains the logic to warehouse linear hash data. To help in the process of creating warehousing procedures, OpenInsight provides a Create Warehouse procedure wizard.

The warehousing of linear hash normalizes multi-value data into two or more relational tables. The warehousing procedure is performed in a two-step process. In the first step, developers use the OpenInsight SQL Warehouse Wizard to build table definitions and warehousing procedures. In the second step, the OpenInsight SQL Warehouse Manager is used to schedule the warehousing process. The warehousing procedures are registered with the Warehouse Manager when created. Subsequent warehousing can be scheduled to be performed on an updates-only basis.

As the warehouse procedure is executed, a history log is generated indicating the results of the warehousing procedure. The log indicates whether warehousing was successful or indicates any problems that may have occurred during the process.

DATA WAREHOUSING AT A GLANCE	
▲Scenario	➡Solution
▲Provide data warehousing features to end users.	➡Deploy the application with Development-Ready Server Deployment Packs accounting for the appropriate number of users.

Deploying Upgrades to Your Application

Developers innovate on an ongoing basis and want or need to deliver these innovations to their installed customers. Revelation Software provides two features for upgrading applications:
1. The Runtime Deployment Kit
2. The Check-in/Check-out feature

The Runtime Deployment Kit (RDK) provides developers with the tools to deploy OpenInsight applications as runtime systems or to full development environments. The RDK also includes the Upgrade/Module Deployment feature for distributing application upgrades or maintenance releases. Planning for the implementation of upgrades must be done prior to the initial deployment of the application. Options for installing an upgrade can be as simple as clicking a button or choosing a menu item, or as sophisticated as accessing the System Editor and running a stored procedure.

There are three main reasons why a developer would use the RDK to deploy upgrades:
1. A large number of components have changed deeming it necessary to deliver a large upgrade module.
2. The version of OpenInsight has changed. If a developer deployed an application in a previous version, an RDK upgrade/module deployment would be necessary to deliver an upgrade in a more current version.
3. A logical collection of new features is being delivered (e.g. - a developer wishes to deploy only work that was done between certain dates, or work that was completed by a specific developer). The RDK upgrade feature allows a developer to define an upgrade based on a logical collection of components.

Another method for deploying upgrades is OpenInsight's Check-in/Check-out feature. This feature is useful when development is taking place on site. A developer can create features and "check them out" to the deployed application. The next time users log onto the system, the new modifications are available. This method is recommended when only a small number of changes are necessary. It is a quick upgrade method which allows for the hand-selection/fine tuning of application components. It is not recommended for the deployment of major new features.

| DEPLOYING UPGRADES AT A GLANCE	
▲Scenario	➡Solution
▲Need to deliver upgrades to end users at various sites.	➡Use the Upgrade/Module Deployment feature of the RDK.
▲Need to deliver changes which are made at the site where the application is running.	➡Use the Check-in/Check-out feature of OpenInsight.

Maximizing Application Performance

Revelation Software recognizes the importance of application performance. With the Revelation Network Products, Revelation provides developers with the tools needed to protect, improve, and maximize the performance of business-critical applications.

Revelation Software has developed a suite of Network Products which provide the functionality mentioned above. The Revelation NLM and the Revelation NT Service are "add-on" products for Revelation's Advanced Revelation and OpenInsight environments. The Revelation Network Products dramatically increase performance and prevent data corruption from occurring. The flexibility and performance of the Revelation Linear Hash (LH) database combined with the functionality provided by the Revelation NLM and the Revelation NT Service, make these Network Products a "must" for any deployed application.

Once a developer has advanced to the stage of deployment, it is critical that the application runs as smoothly as possible. With the Revelation Network Products, the amount of network traffic generated by an application is cut by up to 80-90 percent. The Revelation NLM and NT Service typically provide 30 percent improvement in LH operations on LANs and 100 percent or more on WANs. The Network Products are the ideal solution for any developer wanting to optimize performance, increase stability and obtain the highest level data integrity protection for an application.

Performance Improvements with the Revelation NLM and NT Service
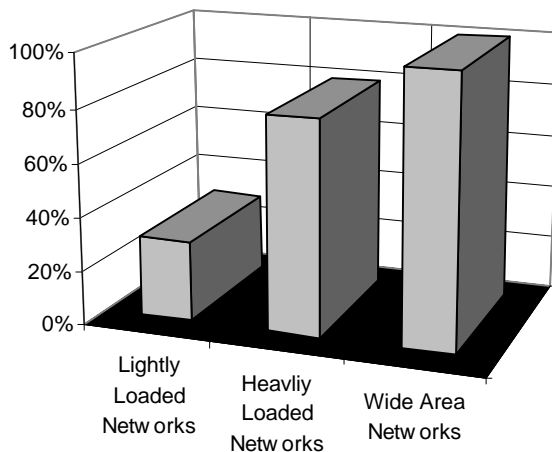
The Network Products are specifically designed for OpenInsight and Advanced Revelation applications. Each network product is designed to easily and economically deliver performance and integrity to business applications without any change to the underlying structure. Revelation Software recommends that developers use these Network Products on all deployed applications.

MAXIMIZING APPLICATION PERFORMANCE AT A GLANCE	
▲Scenario	➡Solution
▲Want to maximize application performance.	➡Install the appropriate Revelation Network Product. Revelation NLM for Novell NetWare Revelation NT Service for Microsoft NT