Deployment Automation

Rintagi
Applications

User
Guide

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Overview

It cannot be over-emphasized the importance of deployment. When a developer completes unit testing, deployment is often needed to update the latest changes to testing servers for systems integration testing and user acceptance testing. Then the production server needs a deployment. The deployment is often packaged into an executable file called "Install.exe".

Rintagi itself requires deployment from time to time. Because it is self-generated, Rintagi can be upgraded frequently via its automated deployment package "Install.exe". It can then be used to upgrade its generated applications.

The following has been automated for the cloud version of Rintagi. This document is only for on-premises use only.

Release Content

During deployment, Rintagi overwrites the old programs with the new programs (including stored procedures). However, table structure changes must not be overwritten or the data integrity would be compromised. For this reason every time the data model is modified, Rintagi automatically creates the necessary change script to be executed upon the next release for all table structure changes.

For example, a change has been made to a table as follows:

Data Table and Columns

Command: Data Tier -> Table and Column

By clicking the icon, not only will the logical changes be implemented to the physical database, but a change script will be created and posted to the current version of the "Release Content".

Release Content

Command: Operation -> Version Manager -> Version Content

Schema Characteristic	Description
Version	The item belongs to this version release.
Order	The order of execution for this item within the version (ideally begins at 10 for each tier and continues at intervals of 10).
Tier	Selects the appropriate tier this item represents. Current selections are Data, Client and Rule although only Data is being used here.
Language	Selects the appropriate computing language that this item is written in. This is not relevant when Data is the chosen tier.
Framework	Selects the appropriate framework that this item is written for. This is not relevant when Data is the chosen tier.
Db Provider	Selects the appropriate database provider that this item is written in.
Relative Path	The relative path for client/rule tier items ending with "\". Null represents current path. This is not relevant when Data is the chosen tier.

Item Name	The program name or a description for one-time script.
Multi-Design Db	Check this if the same table appears in all design databases. Otherwise, table appears in application database only. This is checked only for Rintagi databases.
Remove	Check this if this item is to be removed instead of added/updated. This is not relevant when Data is the tier chosen.
Script	Paste the Unicode content representing this item here; Use [[?]] to substitute the namespace, i.e. [[?]]Design.
Screen	The screen from which this item is generated, if applicable. This is not relevant when Data is the tier chosen.
Report	The report from which this item is generated, if applicable. This is not relevant when Data is the tier chosen.
Wizard	The wizard from which this item is generated, if applicable. This is not relevant when Data is the tier chosen.
Custom	The custom structure from which this item is generated, if applicable. This is not relevant when Data is the tier chosen.

Release Tracking

When ready to deploy, assign a date to the release with a version number higher than the last one. All the scripts from the above release contents will be executed during all future deployments as they are now dated later than the version number found in the applications to be upgraded.

Release Tracking

Command: Operation -> Version Manager -> Version Tracking

Release Tracking

Export RichText Undo All Save ?

3. 20   1 of 5   Module: Administration

Main Info | Read Me

Major Version #*:   3
Minor Version #*:   20
Release Date:
Deployment: No Document currently available.

Release Content*:
3. 20:D: 10:*:*:M: Add column ApplytoMst to ScreenFilter
3. 20:D: 20:*:*:M: Add column AccessCd to RptMemFld
3. 20:D: 30:*:*:M: Add table CtAccess
3. 20:D: 40:*:*:M: Add column AccessCd to DshFld
3. 20:D: 50:*:*:M: Add column MenuDesc to Menu
1

Release Tracking

Export RichText Undo All Save ?

3. 20   1 of 5   Module: Administration

Main Info | Read Me

Prerequisite:

Read Me:

This is the miscellaneous notes for this release.

Schema Characteristic	Description
Major Version #	The major version number for this release (between 1 to 9999).
Minor Version #	The minor version number for this release (between 0 to 9999).
Release Date	The date for this release (should not be filled until ready to release).
Deployment	Click the icon on the right to upload a document or click the trash icon to delete unwanted documents immediately.
Release Content	Click the appropriate link to 'view'/'add'/'edit' release content.
Prerequisite	This describes the prerequisite for this release.
Read me	The miscellaneous notes for this release. This is particularly useful for additional requirements that have to be implemented manually.

Prepare Release

To package a release, a developer with administrative rights may access the following screen. Typically four items need to be established for each release:

```
RC:3.19.80922:New Intranet Runtime [NPDT]
RC:3.19.80922:New Intranet Prototype [NPTY]
RC:3.19.80922:Intranet Runtime [PDT]
RC:3.19.80922:Intranet Prototype [PTY]
```

The above is to satisfy the following scenarios respectively:

1. First instance of deployment to a production site,

2. First instance of making an exact copy of the application for prototyping purpose,

3. Upgrade an existing production site,

4. Upgrade an existing prototype application.

There is another scenario for upgrading the Rintagi portion of the application for development purpose which will be covered in the last chapter.

Prepare Release

Command: Generation -> Deployment -> Prepare Release

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Prepare Release   Export   RichText   New   Copy   Undo All   Save   Delete

RC:3.19.80922:New Intranet Runtime [NPDT]

Main Info | Script | Comment

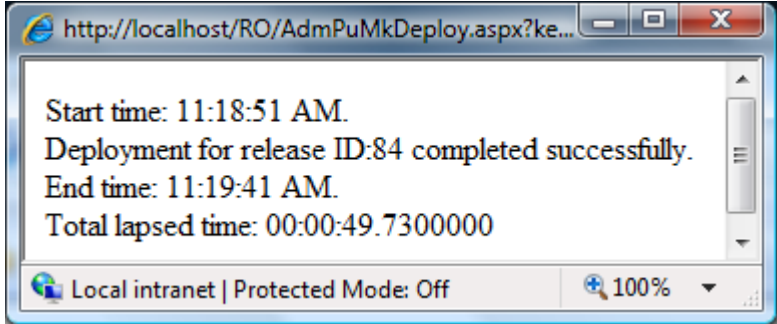|				
Release Id:	86	Release O/S*:	Microsoft Windows	Create Package:
Release Name*:	New Intranet Runtime	Entity*:	robocoder corporation	Deploy Path: E:\DeployRC\
Release Build:	3.19.80922	Release Type*:	New Production Upgrade	
Release Date:	Monday, September 22, 2008			

10   1 of 1   Filter All   On

Tier Type*	Run Order	Objects to deploy*	Source Object	Objects Exempted	Source Client	Source Rule	Source Data	Target Data	S.Proc Only*	Encrypt*	Delete_All
Client	10	*.*		data	RC DotNet 3.5 C#				n/a	☐	Delete
Data	30	RCDesign	Custom |CustomDtl |Printer |Printer_MemberId |Printer_UsrGroupId |ReportLstCri |RptTemplate |ScreenLstInf |ScreenLstCri |ServerRule				RC MsSql Local	RC MsSql Local	All but S.Proc.	☑	Delete
Data	40	RCDesign					RC MsSql Local	RC Sybase Local	n/a	☐	Delete
Data	50	RCAp |RCAr |RCAsset |RCBen |RCCmon |RCCrm |RCGls |RCHrs |RCPay |RCPer |RCPms |RCXrs					RC MsSql Local	RC MsSql Local	Port Everything	☑	Delete
Data	60	RCCmon					RC MsSql Local	RC Sybase Local	n/a	☐	Delete
Data	70	RCApD |RCArD |RCAssetD |RCBenD |RCCmonD |RCCrmD |RCGlsD |RCHrsD |RCPayD |RCPerD |RCPmsD |RCXrsD |RCCmonD	Custom |CustomDtl |ReportLstCri |RptTemplate |ScreenLstInf |ScreenLstCri |ServerRule |Template |Usage |WebRule				RC MsSql Local	RC MsSql Local	All but S.Proc.	☑	Delete

Schema Characteristic	Description
Release Id	The internal identification that uniquely represents this release.
Release Name	A brief description for this release.
Release Build	The unique number in the format (Major#.Minor#.Build#) where Major# and Minor# are user-defined and Build# is the last digit of year plus month and date of release. This will be automatically updated.
Release Date	The date for this release. This will be automatically updated.
Release O/S	The operating system for this release.
Entity	The entity of this release as defined in earlier volumes.
Release Type	This is the release type of this release. The five available choices are: 1. Developer Upgrade: Strictly for Rintagi use only, 2. Prototype Upgrade: Upgrade to existing prototype application, 3. Production Upgrade: Upgrade to existing production, 4. New Prototype: First time deployment to prototyping

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	computer,
	5. **New Production:** First time deployment to production site.
Create Package	Click this icon to prepare a deployment package for this release. After several minutes a popup screen will show a successful preparation message like the one below: ![Popup window screenshot: http://localhost/RO/AdmPuMkDeploy.aspx?ke... Start time: 11:18:51 AM. Deployment for release ID:84 completed successfully. End time: 11:19:41 AM. Total lapsed time: 00:00:49.7300000 Local intranet | Protected Mode: Off 100%]
Deploy Path	The deploy path defined by the entity.
Script	The SQL script to be executed at the end of each Data Tier upgrade. This is rarely used as Release Content has covered most of the requirements.
Comment	This is a comment on this deployment package. This is rarely used as Release Tracking has covered this requirement.
Tier Type	The tier type of this release. Current selections are Client, Rule, Data, and Service.
Run Order	The unique execution order for this release item.
Objects to deploy	The objects to deploy separated by '|' or 'n/a' for not applicable.
Source Object	The alternate source object to be used, if applicable.
Objects Exempted	The objects to be exempted separated by '|', if applicable. For a new installation; only the data is exempted.
Source Client	The source for Client Tier deployment.
Source Rule	The source for Rule Tier deployment.
Source Data	The source data-source for Data Tier deployment.
Target Data	The target data-source for Data Tier deployment.

S.Proc Only	The choice to be made on database deployment. Current selections are:
	1. **All but S.Proc**: Selected when deploying design databases,
	2. **n/a**: Selected when deploying non-data related tiers,
	3. **Port Everything**: Selected when deploying application databases to a new environment. Do not choose this when source procedures are encrypted,
	4. **S.Proc Only**: Selected when deploying application databases to an existing environment. Do not choose this when source procedures are encrypted.
Encrypt	5. Check if target procedures should be encrypted. Do not attempt to deploy stored procedures when source procedures are already encrypted.

Compile Release

After all the above release items are fully prepared, if this is a new application and this is first compilation of the installer, the installer needs to be compiled manually by including the four newly created directories of contents into the project and embedding all the resources.

After the first successful compilation, developers with administrative rights may compile this release by using the following wizard screen:

Compile Release

Command: Generation -> Deployment -> Compile Release
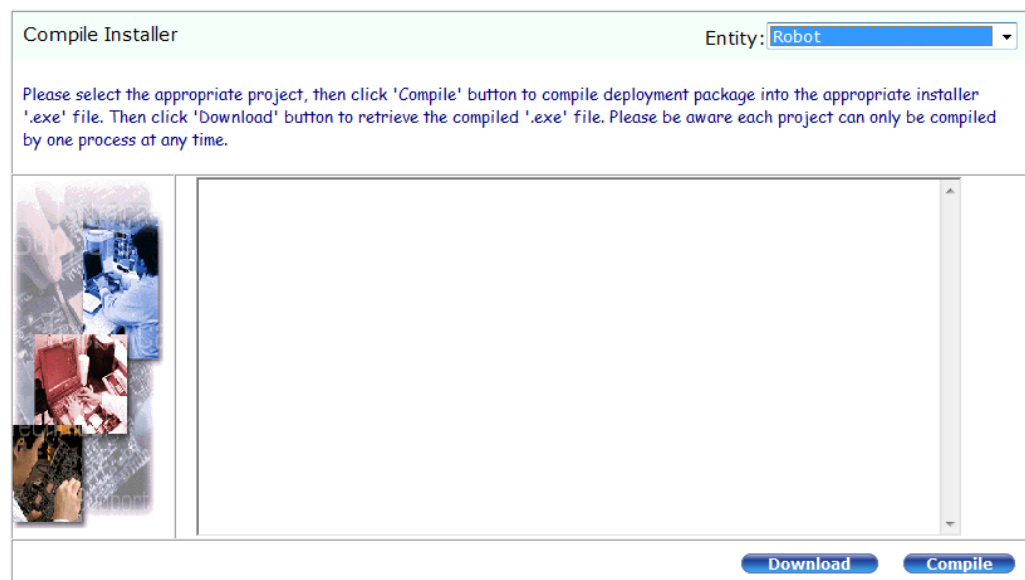
Clicking the "Compile" button will trigger the compilation process for this release. After several minutes the single installer executable "Install.exe" will be ready in the

bin\release directory within the "DeployPath" specified in the Entity table. A success message will be displayed as follows:

Clicking the "Download" button will compress the file "Install.exe" and prompt to save as an "Install.zip" file.

Install Release

Installation is easily accomplished by executing Install.exe at a preferred directory. There are two types of install packages. One package is for Rintagi to upgrade Rintagi changes to its applications to bring them up-to-date (Rintagi Installer). The other package is for the applications to install to other computers (Application Installer).

Please make sure the Operating System user running these installers has administrative rights.

For Developer installation, please make sure NETWORK SERVICE user has all rights to folders C:\Inetpub\wwwroot, C:\Rintagi and C:\Deploy?? where ?? is the namespace of your application.

The following chart summarizes the steps to perform various types of deployment scenarios:

Deployment Scenarios	Create New	Upgrade Existing
Development: An application with source code and compiler for development purpose.	Execute the latest Rintagi Installer. Choose ⦿ Developer and check ☑ New .	Execute the latest Rintagi Installer. Choose ⦿ Developer and uncheck ☐ New .
Prototype: An application with source code and compiler; it is usually a duplicate of the above for prototyping purpose.	Select ⦿ Prototype and check ☑ New . Then execute the Rintagi Installer of the same version and choose ⦿ Developer and uncheck ☐ New .	On the Application Installer, select ⦿ Prototype and uncheck ☐ New . Then execute the Rintagi Installer of the same version and choose ⦿ Developer and uncheck ☐ New .

Production: An application with object code only for testings (Systems Integration Testing and Users Acceptance Testing) and production purposes.	Select ⊙ Production and check ☑ New . Then execute the Rintagi Installer of the same version and choose ⊙ Production and uncheck ☐ New .	On the Application Installer, select ⊙ Production and uncheck ☐ New . Then execute the Rintagi Installer of the same version and choose ⊙ Production and uncheck ☐ New .

The following is an example of the Rintagi Installer:

The following is an example of the Application Installer:

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The [i] icon provides the prerequisites and manual notes for all of the releases within the last 18 months.

The [?] icon provides the following instructions:

System Requirements (Assuming the main web site, web service site and DBMS are all running on one server and not separate servers):

Computer with 1.4 GHz or higher processor (2 GHz or faster is recommended)

Minimum 1GB of RAM (2 GB or more is recommended)

15 GB of free hard disk space

Operating Systems: Windows Server 2003 Service Pack 2, or Windows Server 2008, or Windows 7.

Simplified Instructions for new Rintagi developer (Administrative rights required):

Step 1: Add IIS 6/7 feature in Windows (must select ASP.NET 2.0 + sub-feature)

Step 2: Download and install Visual Web Developer 2008 Express Edition, or Visual Studio 2008 standard or higher with SP1;

Step 3: Download and install SQL Server Express 2005/2008/ 2010 with Advanced Service, or install SQL Server 2005/2008/ 2010;

Step 3a: Configure SQL Reporting Service via "Configuration Tools -> Reporting Services Configuration" found in the start menu;

Step 3b: Use http://localhost/Reports and http://localhost/ReportServer for the manager/web service URL respectively;

Step 4: Download and install Microsoft Visual J#2.0 Redistributable Package;

Step 5: Download and install Windows SDK for Windows Server 2008 and .NET Framework 3.5;

Step 6: Download and install Microsoft Ajax Control Toolkits 2.0;

Step 7: Download and install Crystal Reports Basic for Visual Studio 2008 (skip if Visual Studio 2008 standard or higher is installed);

Step 8: Configure ASP.NET Webpart by running: C:\WINDOWS\Microsoft.NET\Framework\v2.0.50727\aspnet_regsql.exe;

Step 8a: Create SQL login user "Persona" with password "Persona" and give full right(dbo) to database "aspnetdb" created;

Step 9: Install Rintagi via "Install.exe";

Running Install.exe:

1. Check "New" if a new application is to be created;

2. "db Path" is where the physical database will be created;

3. "Developer" is for creating or upgrading development application;

4. "Production" is for creating or upgrading production application;

5. "NameSpace" should be limited to at most three characters representing a unique application;

6. "Web Server" is used to populate Web.config and is assumed to be the same for the Web server, Web Service Server and Report Service Server;

7. "?" is additonal help;

8. "i" is release notes;

9. "!" is installation log which only shows up after installation is completed;

10. "Client Tier" is the virtual directory for the main web site;

11. "Web Service Tier" is the web service web site;

12. "Reporting Service URL" is the URL for SQL Reporting Service web service (replace "ServerName" with the appropriate web server);

13. "Rule Tier", if visible, is the path where Business Facade, Access Layer, etc. are located;

14. "Server Name, User Name and Password" are the credential for the SQL server;

15. "Client" and "Server" are paths for Backing up Client programs and existing databases (Backup prior to upgrading);

After running Install.exe, if new development application:

1. Try login to the new application using user name "John Doe" and password "JohnDoe" as systems administrator;

1. Verify all settings in Web.config of the Web Server and Web Service Server are correct, if necessary;

2. Rename ??TmplD design database name to desired database name and add relevant data database as a pair;

   For example, if namespace is "XX" and application name is "Abc", ??TmplD should be renamed to "XXAbcD" and create a corresponding database called "XXAbc";

3. Adjust entries in maintenance tables: Systems, Entity, ClientTier, RuleTier, and DataTier, if necessary;

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