

Codeless Control Center User Manual

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1. Introduction

Introduction

The new Codeless Control Center brings fully automatized lifecycle management for the Codeless Environments and will help the Codeless Team manage the entire lifecycle of an environment in a visual-oriented manner.

This management will be intensively automatized so that human errors are reduced to a minimum. Also, processes that used to take us hours and hours, now can be performed in a matter of minutes.

Benefits

Here are some highlights of what the new tool will help us achieve:

- User-friendly Model Release making (just a few clicks)
- Easy Model Release installation/deployment
- Easy, fully automatized Codeless Software installation

Risks

As with all automatized systems, CCC must be used with caution and all actions monitored and verified. Even if an installation can be created with only a few clicks, a manual check at the end of the process must be made so that we constantly know that the environment that is being worked on is still in good shape.

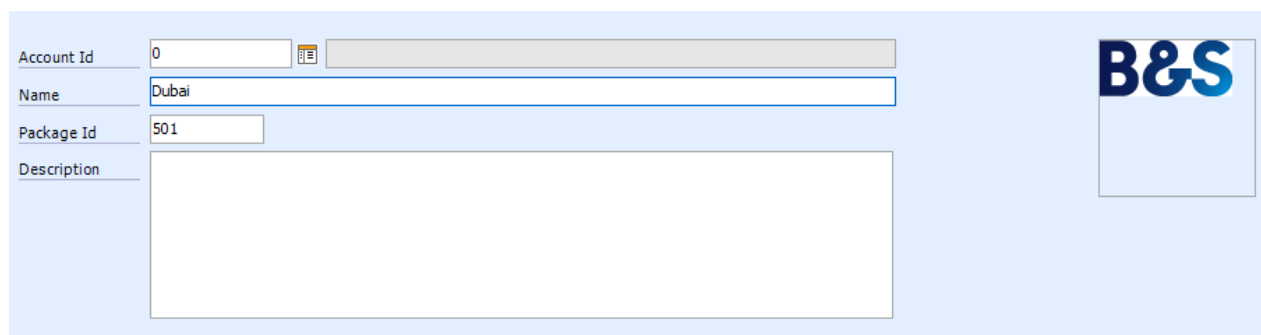
2. Environments

Environments

The Codeless Control Centre structures data related to an environment in Packages, Branches and Environments.

Package Registration


To register a Package go to function 4007 and add a new object. Here you must specify the package name and id. Optionally, you can add a description and a logo.



Account Id	0	
Name	Dubai	
Package Id	501	
Description		

Branch Registration

Next step is to create a branch for your Package. Go to 4004 and register a new object. Enter the name of the branch and select the package.

Branch Id	527175102		
Name	Main		
Package Id	270386119		Dubai
Package Id number	501		

Servers Registration

An environment has several servers associated with it, where different components are installed. An Environment uses four types of servers: - **Application Server** – usually hosts the Codeless Server, Client, Reporting Services and any custom web site


- **Background Server** – where the Codeless Task Scheduler and Queue Processor Service are installed
- **File Server** – where the server files are saved
- **Database Server** – hosts the environment database

You can have different server types targeting the same physical machine, or distinct machines. Each type has specific settings that must be set. To create a new Server, go to function 4009, and add a new entry. Select the type of the Server and press ok. Next you will have to provide the server settings. All servers have a name that you must specify. Also, for any type of server you can specify a default backup location.

Application Server

For this kind of server IIS must be configured on the actual machine and you must set the following properties:

- **Server Name** – the name or IP address used to reach the server through HTTP
- **Install Root** – the location where the Server, Client, Reporting Services are installed (usually inside the IIS wwwroot folder)
- **Load Balancer** (optional) –if you have multiple servers configured in load balancing, you can create a special type of Server called a Load Balancer, and associate it with all the load balanced servers

Account Name	Codeless		
Server Type	Application Server		
Server Name	impctc		
Install Root	C:\inetpub\wwwroot		
Load Balancer	0		
Back-up Location	C:\inetpub\wwwroot\backup		

Background Server

For this kind of server IIS must be configured on the actual machine and you must set the following properties:

- **Server Name** – the name or IP address used to reach the server through HTTP
- **Install Root** – the location where the Task Scheduler is installed
- **Web Install Root** – the location where the Queue Processor Service is installed (usually inside the IIS wwwroot folder)

Account Name	Codeless
Server Type	Background Server
Server Name	impiis0
Install Root	C:\Codeless Task Scheduler
Back-up Location	C:\Codeless Task Scheduler\backup
Web Install Root	C:\inetpub\wwwroot
Web Back-up Location	C:\inetpub\wwwroot\backup

File Server

For this kind of server you must set the following properties:

- **Server Name** – in this case, it is only a symbolic name to identify the server
- **Server Files** – the location for storing the server files
- **Modeler Files** – the location for storing the modeller files (normally this is used only on development environments)

Account Name	Codeless
Server Type	File Server
Server Name	77.60.77.17
Server Files	F:\Server Files
Modeler Files	F:\Modeler Files
Back-up Location	F:\backup

Database Server

For this kind of server you must set the following properties:

- **Server Name** – the name of the actual machine that hosts the actual SQL Server installation
- **Instance name** – the name of the SQL server instance

Account Name	Codeless
Server Type	Database Server
Server Name	impsql4
Instance Name	sql2008r2
Back-up Location	E:\backup

Environment Configuration

After all servers for an environment are configured, you can create the **Environment Configuration**, using function **4107**. You have to select the branch id, the Type of the environment, and (optionally) the environment it will be updated from. Set the **Last date of refresh** to **one day before** the current date.

Environment Configuration (4107)

Branch Id	877923086	LearnCCC	Main
Type	Development	Extension	
Model ID	968162144	LearnCCC	
Inherits From	0		

1. Servers 2. CIC Names 3. General Setting Values 4. Custom Setting Values 5. Custom Setting Types 6. CIC Monitoring 7. Environment Info

Monitored By CIC Manage: None

Last date of refresh*: 16/11/2012 12:00:00 AM

Lastfile version: 1

In the 1st tab – **Servers** – select the four servers associated with the environment: application server (can also be a load balancer), file server, background server and database server.

1. Servers 2. CIC Names 3. General Setting Values 4. Custom Setting Values 5. Custom Setting Types

ApplicationServer Id	457189259	impctc
FileServer Id	594479830	impctc
BackgroundServer Id	240300379	impctc
DatabaseServer Id	921117977	impctc\sql2008r2

3. Migrating an existing environment

Migrating an existing environment

In order to get an existing environment to run with the CCC, a series of steps are needed to be performed first.

Prerequisites

Codeless Installer Service must be installed on the machine where the environment will be hosted.

IMPORTANT! Please note that a full backup of the existing environment must be made (databases and Codeless software components).

Update Databases

Both Model and Runtime databases need to be updated:

- Model to minimum version **15.57**
- Runtime to minimum version **03.47**

Runtime fixes

Run the Runtime fixes up to minimum version **17**. The files are located here: \\impfile\Codeless Packages\Server Files\CodelessRuntime\Scripts

ServiceBus plug-in

Deploy and register the ServiceBus plug-in using minimum version **1.6.1.0**.

Re-run update script

Run again the environment update script **03.19**, but **without setting the DB version** back:

```
UPDATE System_Attribute
SET System_Attribute.Persistent = Metadata.T004_CLASS_ATTRIBUTUT.PERSISTENT
FROM System_Attribute
INNER JOIN Metadata.T004_CLASS_ATTRIBUTUT
ON System_Attribute.AttributeID = Metadata.T004_CLASS_ATTRIBUTUT.ATTRIBUTUT_ID
```

Install the Codeless Runtime Software

Install manually the Codeless Runtime Software minimum version 3.1.2.0.

Register the environment in CCC

Add all the servers needed and register the environment in CCC. Once registered, click the **Add missing General Settings** button so that the settings values are filled with the actual values that are configured for the migrated environment (if everything obeys the naming conventions).

In order to make use of the **Server Package Updater** on the **development environment** also, a series of prerequisites must be met:

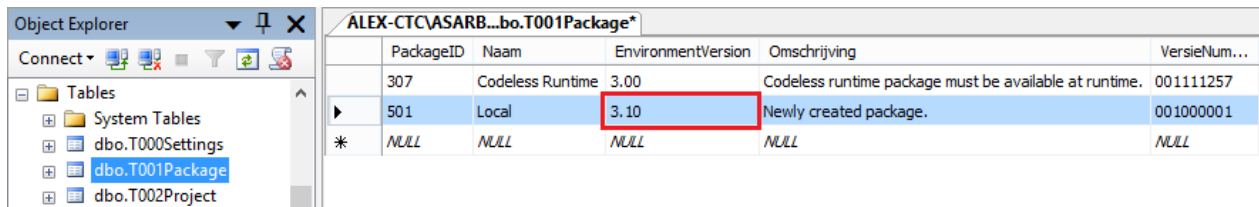
Codeless Server Tools version

For the Modeler to be able to call the Server Package Updater, Codeless Server Tools version 3.3.3 (minimum) must be installed.

Package Environment Version

Because the Modeler automatically launches the Package Updater functionality after building the changes made in a model, a setting must be changed in the Model Database so that the Server Package Updater is used:

[Model Database] > T001Package > EnvironmentVersion column must be set to **3.10**

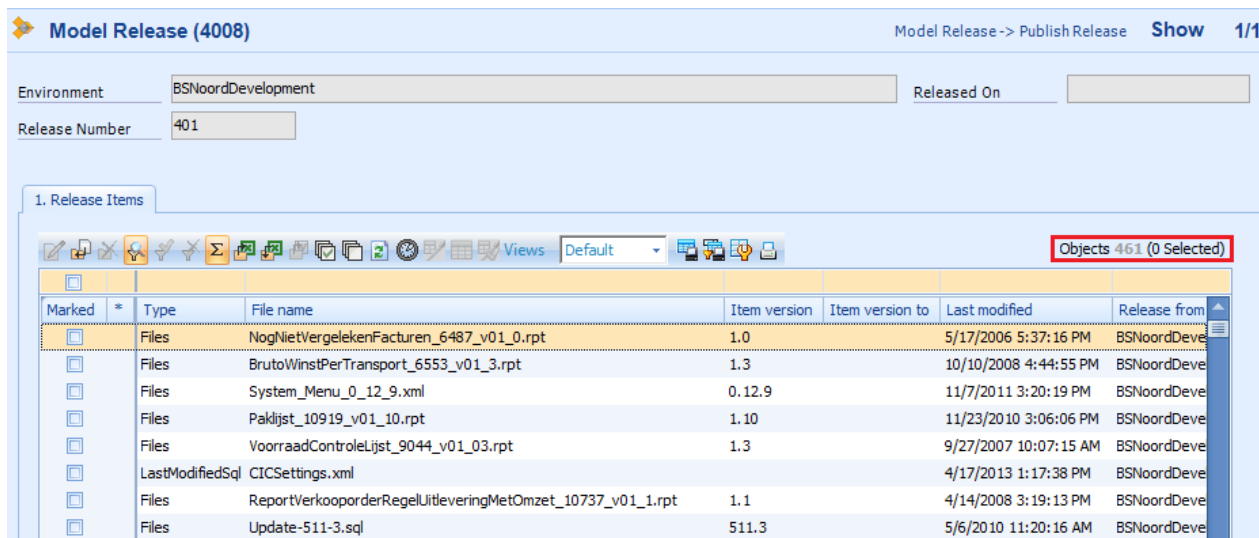


PackageID	Naam	EnvironmentVersion	Omschrijving	VersieNum...
307	Codeless Runtime	3.00	Codeless runtime package must be available at runtime.	001111257
501	Local	3.10	Newly created package.	001000001
*	NULL	NULL	NULL	NULL

NOTE: This package should **not** be opened with the Desktop Codeless Control Center anymore, as it would revert the setting.

4. Publishing the first Model Release for newly migrated environment

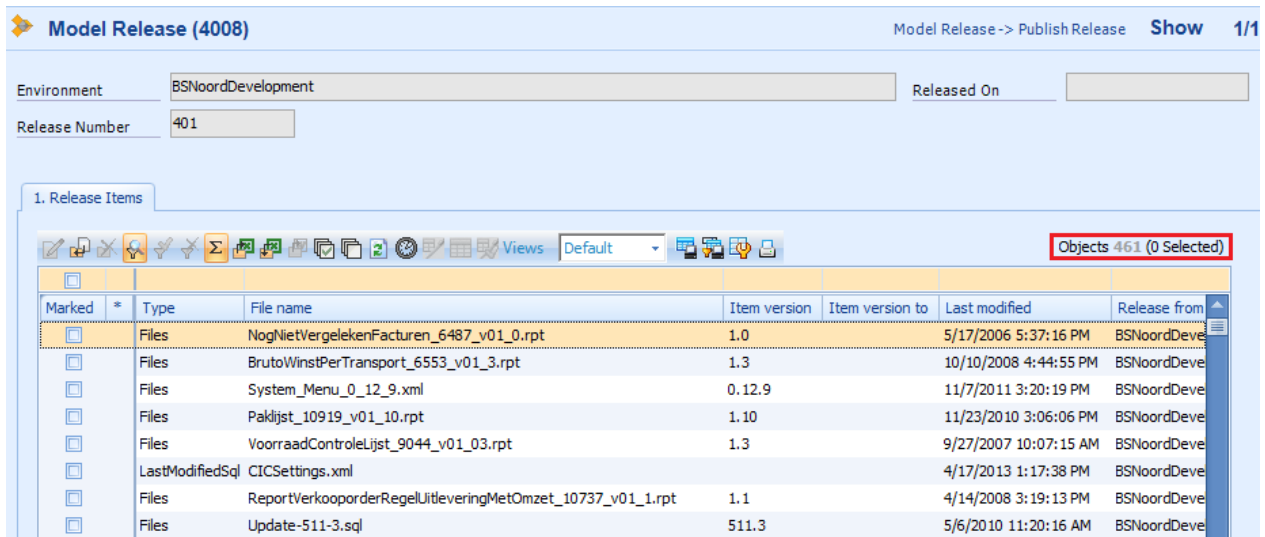
For creating a new release go to **Publish Release** function (4111) and open the newly migrated environment environment. In the **Publish Releases** tab add a new entry; that will open function Model **Release** (4008), where you can press Enter to create a draft.



Marked	*	Type	File name	Item version	Item version to	Last modified	Release from
<input type="checkbox"/>		Files	NogNietVergelekenFacturen_6487_v01_0.rpt	1.0		5/17/2006 5:37:16 PM	BSNoordDeve
<input type="checkbox"/>		Files	BrutoWinstPerTransport_6553_v01_3.rpt	1.3		10/10/2008 4:44:55 PM	BSNoordDeve
<input type="checkbox"/>		Files	System_Menu_0_12_9.xml	0.12.9		11/7/2011 3:20:19 PM	BSNoordDeve
<input type="checkbox"/>		Files	Pakijst_10919_v01_10.rpt	1.10		11/23/2010 3:06:06 PM	BSNoordDeve
<input type="checkbox"/>		Files	VoorraadControleLijst_9044_v01_03.rpt	1.3		9/27/2007 10:07:15 AM	BSNoordDeve
<input type="checkbox"/>		LastModifiedSql	CICSettings.xml			4/17/2013 1:17:38 PM	BSNoordDeve
<input type="checkbox"/>		Files	ReportVerkooporderRegelUitleveringMetOmzet_10737_v01_1.rpt	1.1		4/14/2008 3:19:13 PM	BSNoordDeve
<input type="checkbox"/>		Files	Update-511-3.sql	511.3		5/6/2010 11:20:16 AM	BSNoordDeve

Once the draft is created, it will have multiple **Release Items**, many of them will have already been deployed manually (before the conversion to CCC). The goal is to have a first release that contains all the items that have been published previously (manually) that will never be installed.

So, go one by one through the items and delete the ones that have not been already deployed. For the **range** type, make sure to set the correct margins.



Finally press the Publish button to move the release from **Draft** state to **Published**. All files for the new release can be found archived as an attachment.

Make sure you will not install this release on any of the environments.

After publishing the first release, create a new one and include the item that will be installed from now on, as you'd normally do with any release.

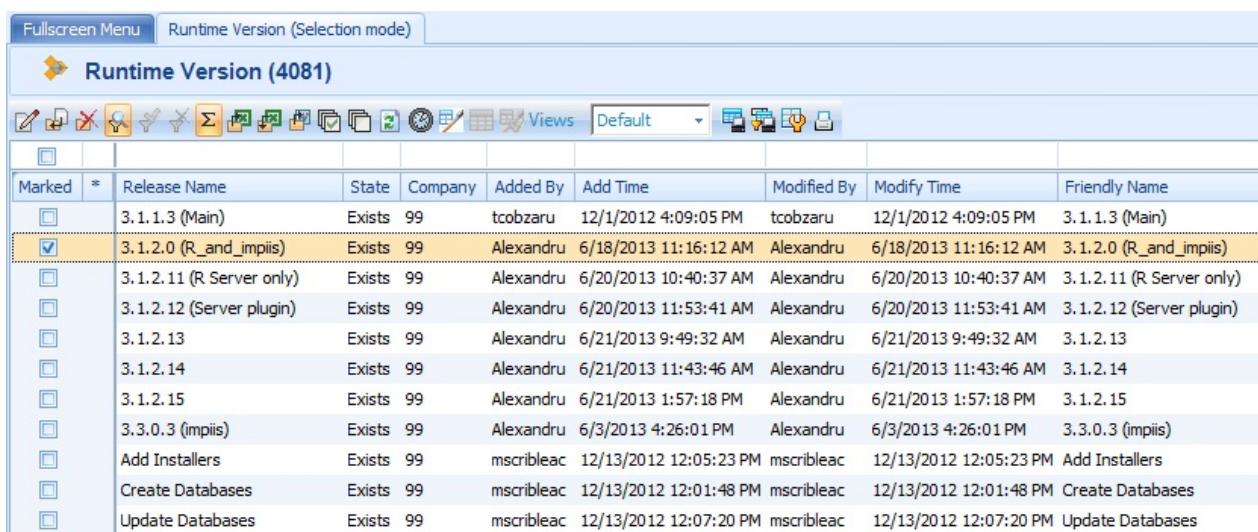
5. Codeless Runtime

A Codeless Runtime Version represents a bundle of **Codeless Products** that are packaged together and shipped as a whole Software Solution.

This kind of packaging ensures quality and complete interoperability between the Codeless programs.

Runtime registration

Runtime Versions of Codeless Software are registered using function **4081**:



As stated above, a Runtime Version can have multiple Products:

Fullscreen Menu Runtime Version (Selection mode) Runtime Version (Datamode)

Runtime Version (4081)

Release Name: 3.1.2.0 (R_and_impis)

Release Date*: 6/18/2013 11:16:12 AM

1. Release Items 2. Add Release Items

Views: Default

Marked	*	Version	Patch Version	Friendly Name	Company	Added By	Add Time	Modified By	Modify Time	Product
<input type="checkbox"/>		3.1.2.0	0	3.1.2.0 (R_and_impis) - 0 - Client - 3.1.2.0	99	Alexandru	6/18/2013 11:17:45...	Alexandru	6/18/2013 11:17:45...	Client
<input type="checkbox"/>		3.1.2.0	0	3.1.2.0 (R_and_impis) - 0 - Server - 3.1.2.0	99	Alexandru	6/18/2013 11:17:57...	Alexandru	6/18/2013 11:17:57...	Server

Products are added via a process function that can be accessed in **Add Release Items** tab:

Fullscreen Menu Runtime Version (Selection mode) Runtime Version (Datamode)

Runtime Version (4081)

Release Name: 3.1.2.0 (R_and_impis)

Release Date*: 6/18/2013 11:16:12 AM

1. Release Items 2. Add Release Items

Views: Default

Marked	*	Product	Version	Patch Version	Default Activity Type	Default Activity Type Version	State
<input type="checkbox"/>		Client	3.1.0.0	0	ClientInstallation		1 Exists
<input type="checkbox"/>		Client	3.1.1.2	0	ClientInstallation		1 Exists
<input type="checkbox"/>		Client	3.1.1.3	0	ClientInstallation		1 Exists
<input type="checkbox"/>		Client	3.1.2.0	0	ClientInstallation		1 Exists
<input type="checkbox"/>		Client	3.1.2.13	0	ClientInstallation		1 Exists
<input type="checkbox"/>		Client	3.1.2.14	0	ClientInstallation		1 Exists
<input type="checkbox"/>		Client	3.1.2.15	0	ClientInstallation		1 Exists
<input type="checkbox"/>		Client	3.3.0.3	0	ClientInstallation		1 Exists
<input type="checkbox"/>		Create/Update Environment Installer	1	0	InstallerInstallation		1 Exists
<input type="checkbox"/>		Development Update Script	00.00	0	ModelDatabaseUpdate		1 Exists
<input type="checkbox"/>		Development Update Script	01.00	0	ModelDatabaseUpdate		1 Exists
<input type="checkbox"/>		Development Update Script	02.00	0	ModelDatabaseUpdate		1 Exists

Runtime Installation

IMPORTANT! Please note that a full backup of the existing environment Codeless Software must be made. See also chapter [Before Scheduling an Installation – MANUAL ACTIONS](#)

In order to install a Codeless Runtime Version on a specific environment, navigate to **Install Runtime** function (4114) and open the environment.

Fullscreen Menu Environment (Selection mode)

Install Runtime (4114)

Views: Default

Marked	*	Environment Id	Full Name	Package Name	Type	Extension	Branch Name	Codeless Version	Database Version
<input type="checkbox"/>		287929052	LearnCCCDdevelopment	LearnCCC	Development		Main	3.1.2.15	3.46
<input type="checkbox"/>		684559041	LearnCCCTest	LearnCCC	Test		Main	3.1.2.15	3.46

In the first tab, Runtime Installations, add a record and you'll be able to select the installation date and a specific release to be installed:

Fullscreen Menu EnvironmentInstallation (Datamode)

Installation (4090)

Environment: 287929052 LearnCCCDDevelopment

Installation Date*: 7/5/2013 12:01:43 PM This is the local time for the Server where the installation will take place.

Installation Type: Runtime Installation

Runtime Version: 3.1.1.3 (Main) Release Date: 12/1/2012 4:09:05 PM

1. Codeless Release Items 2. Activities

Views: Default

Marked	*	Product	Version	Patch Version	Company	Added By	Add Time	Modified By	Modify Time	Friendly Name
<input type="checkbox"/>		Client	3.1.1.3	0 99	tcobzaru	12/1/20...	tcobzaru	12/1/2012 ...	3.1.1.3 (Main) - 0 - Client - 3.1.1.3	
<input type="checkbox"/>		Reporting Services	3.1.0.9	0 99	tcobzaru	12/7/20...	tcobzaru	12/7/2012 ...	3.1.1.3 (Main) - 0 - Reporting Services - 3.1.0.9	
<input type="checkbox"/>		Server	3.1.1.3	0 99	tcobzaru	12/1/20...	tcobzaru	12/1/2012 ...	3.1.1.3 (Main) - 0 - Server - 3.1.1.3	

After selecting the release and refreshing the list, the release items will be displayed in the list.

Save the newly created object and the installation will be scheduled. The files will be copied and then the Codeless Installer Service will pick up and install them. If the Installer Service doesn't have access to the files, then they must be copied by hand.

6. Codeless Release

A Codeless Release comprises of multiple package-specific, model-defining items:

- Model Updates
- System Settings
- Plug-ins
- Reports
- Restful Settings
- Conditional Formatting Rules
- XML Types
- CIC Settings

Next, we will describe a scenario in which a release is created from the **Development** environment, then installed on the **Test** one.

Release Publishing

In order to create the model release out of the development environment, navigate to **Publish Release** function (4111) and open the object.

Fullscreen Menu Environment (Selection mode)

Publish Release (4111)

Views: Default

Marked	*	Full Name	Package Name	Type	Extension	Branch Name	Codeless Version	Database Version	Application Server	Database Server	Background Server
<input checked="" type="checkbox"/>		LearnCCCDDevelopment	LearnCCC	Development		Main	3.1.2.15	3.46	impctc	impctc/sql2008r2	impctc
<input type="checkbox"/>		LearnCCCTest	LearnCCC	Test		Main	3.1.2.15	3.46	impctc	impctc/sql2008r2	impctc

On the **Publish Releases** tab add a new release (in function 4008, hit ENTER to add the release items).

Fullscreen Menu ModelRelease (Datamode)

Model Release (4008) Model Release -> Publish Release **Show**

Environment LearnCCCDDevelopment Released On

Release Number 20

1. Release Items

Views: Default

Objects 1 (0 Selected)

Marked	*	File name	Releaseable Item	Item version	Item version to	Last modified	Type	Output folder	Release from
<input type="checkbox"/>		...	Model Updates (SQL)	1.0.28	1.0.28	7/4/2013 4:...	Range	Server Files\...	LearnCCCDDevelopment

^F1. Publish

The releasable items list is created, containing the items that changed since last release, in our case, the **Model Updates (SQL)** releasable item.

Open the releasable item and verify if the settings correspond to the desired ones:

Fullscreen Menu ModelReleaseItem (Datamode)

Release Items (4023)

Released item Id 82,871,990

Releaseable Item Model Updates (SQL)

Type Range

Release from LearnCCCDDevelopment

Release Id 20

Releasable item Id 253,213,025

File name

Item version 1.0.28

Item version to 1.0.28

Last modified 7/4/2013 4:00:45 PM

Environment Id 287,929,052

Output folder Server Files\Updates

Path \\impctc\Codeless Packages\Modeler Files\LearnCCCModel\Scripts

Released from 287,929,052

Install Release

IMPORTANT! Please note that a full backup of the existing environment database must be made.

See also chapter [Before Scheduling an Installation – MANUAL ACTIONS](#)

In order to install a release on a specific environment, navigate to **Install Release** function (4113). Go to the **Test** environment and open it.

Fullscreen Menu Environment (Selection mode)

Install Release (4113)

Now select the **Available releases** tab and import a model release.

Fullscreen Menu *Datamode (Add)	
Import Model Release (4106)	
Environment	684559041 LearnCCCTest
Release ID	0
Import Release	<input type="text" value="0"/> from LearnCCCDDevelopment
Release Date*	7/5/2013 12:11:31 PM

After the importing, add a record in first tab **Release Installations** function (4090) will open and you'll be able to select the installation date and a specific release to be installed:

Fullscreen Menu *Datamode (Add)	
Installation (4090)	
Environment	684559041 LearnCCCTest
Installation Date*	7/5/2013 3:54:48 PM <small>This is the local time for the Server where the installation will take place.</small>
Installation Type	Release Installation
Release Version	8
Release Date	6/20/2013 2:25:07 PM

2. Codeless Release Items 3. Activities											
Objects 1 (0 S											
Marked	*	Releaseable Item	Type	File name	Item version	Item version to	Last modified	Release from	Output folder	Company	Added By
<input type="checkbox"/>		Model Updates (SQL)	Range		1.0.16	1.0.18	6/20/2013 2:20:33 PM	LearnCCCDDevelopment	Server Files\Updates	99	Codeless...

After selecting the release and refreshing the list, the release items will be displayed.

Save the newly created object and the installation will be scheduled. The files will be copied and then the Codeless Installer Service will pick up and install them. If the Installer Service doesn't have access to the files, then they must be copied by hand.

7. Before Scheduling an Installation – MANUAL ACTIONS

Before Scheduling an Installation – MANUAL ACTIONS

As with the manual installations, the automatic ones also need backups before proceeding. In order to prepare the backups, you can take a look at the servers that the environment runs on. This information is present in the third tab of the environment object (in function 4006). Then, a **SERIES OF MANUAL ACTIONS** must be performed:

Environment Usage

Before making any kind of installation on the environment, ask the users to log out. This way you will prevent losing data or getting objects in inconsistent states.

ACTION: Send an email to the users to stop any activities on the environment.

Database Backup

Before installing a Model Release on an environment, a manual backup of the database is absolutely needed.

ACTION: From SQL Server Management Studio, create a database backup for the environment.

Installation Backup

Before installing newer versions of the Codeless Software on an environment, backups of the existing installations should be made. This way, if anything fails in the process of automatic installation, the software can be easily reverted to the previous version and the uptime of the environment is not affected that much.

ACTION 1: Archive and copy in a safe location the Codeless Server folder (this will include the configuration file and any plug-ins that are installed on the environment).

ACTION 2: Archive and copy in a safe location the Codeless ClickOnce Client folder.

ACTION 3: Archive and copy in a safe location the Codeless Reporting Services folder.

ACTION 4: Archive and copy in a safe location the Codeless Task Scheduler folder.

ACTION 5: Archive and copy in a safe location the environment-specific Server Files folder.

8. During the Installation Process – MANUAL ACTIONS

During the Installation Process – MANUAL ACTIONS

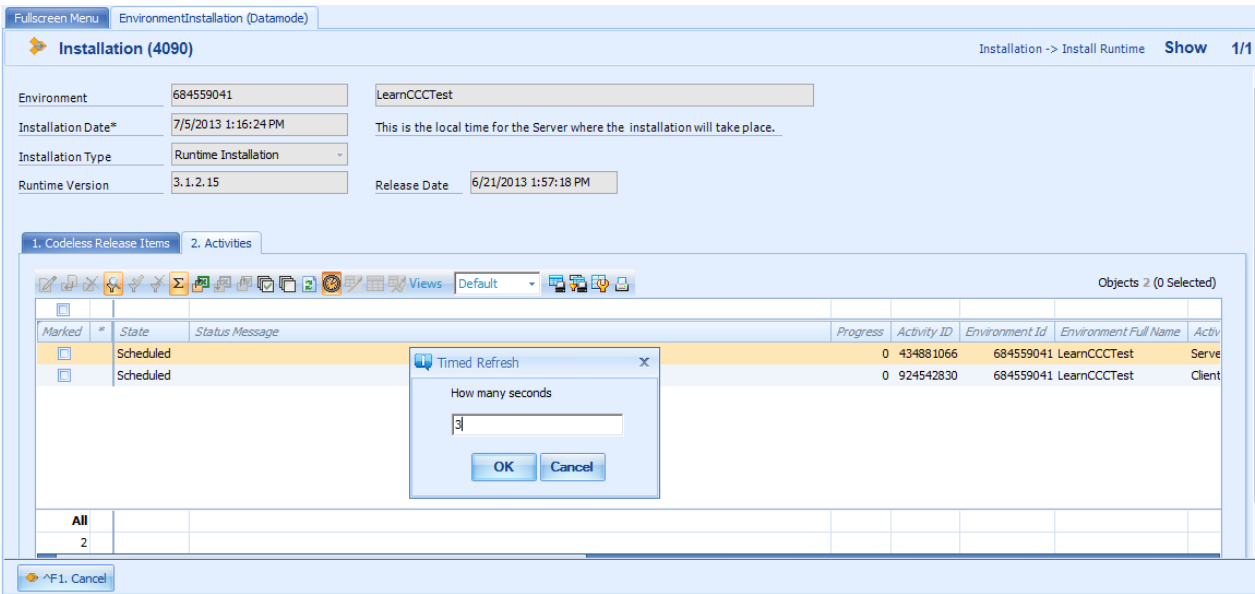
When the new installation object is saved (and automatically scheduled), if the **Installation Date** is reached, the installation process will begin.

In order to follow the progress, you can open the installation object and select the **Activities** tab. Progress of each activity can be followed by looking at the three columns that state it:

- State
- Status Message
- Progress

TIP: To get real time updates about the progress, set a **Timed Refresh** on the **Activities** tab. A value of one second should provide an accurate progress.

If an error status is reported, investigate the message and try to fix the problem. Then hit the **Reschedule** button.



For more hints, see chapter Troubleshooting.

9. After Installation Completes – MANUAL ACTIONS

After Installation Completes – MANUAL ACTIONS

Server

Version

ACTION: Open the **Version.aspx** page of the server and you will find information about:

- **Codeless Server Version** – this will modify if a Codeless Release is installed; make sure that the expected version is present
- **Plug-ins** – all the expected plug-ins must be present; if a Model Release is installed and if it contains plug-in changes, they should reflect here
- **Model Version** – this will be updated if a Model Release with update scripts is installed, verify that the value reflects the expectations
- **Database Version** – this will be updated only if a database update script is ran
- **Database Server** – should **NOT** change, verify that the correct version is still present after a Codeless Release which contains the Server is installed
- **Database Name** – should **NOT** change, verify that the correct version is still present after a Codeless Release which contains the Server is installed
- **User Files** – should **NOT** change, verify that the correct version is still present after a Codeless Release which contains the Server is installed

Logs

ACTION: After the environment has been running for a while in the new setup, check that there are no errors displayed in the logs.

ClickOnce Client

ACTION 1: Update or install the Codeless ClickOnce Client, start it and log in, then check the About box to see if the expected version has been deployed. **ACTION 2:** Also, check the actual functionality of the Client to see if it meets the model changes expectations.

Queue Processor

ACTION: Check that all the queues on the environment run properly. Check also the Queue Processor logs.

10. Troubleshooting

Troubleshooting

As CCC version 0.1 is more of a BETA release, some problems might occur. In order to overcome and workaround them, some steps are needed.

Deploying plug-ins

Scenario

A new Codeless Release must be installed on an environment that has plug-ins. After installing the new release, the plug-ins are missing.

Explanation

The Server installation first deleted all the old files and folders and there is no Plug-in Release implemented in version 0.1, so there is no way of deploying them after the installation.

Solution

There are two ways of making sure the plug-ins are deployed:

- a. By hand, once the installation completed (copying them into the “bin” folder of the newly installed Server).
- b. The Codeless Server release itself contains the plug-in binaries also (this implies specific releases for plug-ins subsets).

Installation fails

Scenario

A Codeless or Model Release is scheduled for installation (as described in the previous chapters) but right after creation it goes into an Error state.

Explanation

There might be some problems in the activities flow that generate this kind of behaviour.

Solution

Open the faulty installation object and click **Reschedule**.

General Settings not filled

Scenario

When adding an entry in function 4006 for an existing environment and pressing the **Add Missing General Settings** button, the General Settings have the default values, not the ones expected for the running environment.

Explanation

This usually happens when the installed (running) environment doesn't obey the naming conventions.

Solution

Either fill the settings by hand, or correct the naming of the environment components – this may impact the end users.

Article Sources and Contributors

1. **Introduction** *Source:* <http://hosting1.codeless.com/CodelessDevelopmentWiki/index.php?oldid=6770> *Contributors:* AnaTurcan
2. **Environments** *Source:* <http://hosting1.codeless.com/CodelessDevelopmentWiki/index.php?oldid=6793> *Contributors:* AnaTurcan
3. **Migrating an existing environment** *Source:* <http://hosting1.codeless.com/CodelessDevelopmentWiki/index.php?oldid=6829> *Contributors:* AnaTurcan
4. **Publishing the first Model Release for newly migrated environment** *Source:* <http://hosting1.codeless.com/CodelessDevelopmentWiki/index.php?oldid=6832> *Contributors:* AnaTurcan
5. **Codeless Runtime** *Source:* <http://hosting1.codeless.com/CodelessDevelopmentWiki/index.php?oldid=6844> *Contributors:* AnaTurcan
6. **Codeless Release** *Source:* <http://hosting1.codeless.com/CodelessDevelopmentWiki/index.php?oldid=6860> *Contributors:* AnaTurcan
7. **Before Scheduling an Installation – MANUAL ACTIONS** *Source:* <http://hosting1.codeless.com/CodelessDevelopmentWiki/index.php?oldid=6864> *Contributors:* AnaTurcan
8. **During the Installation Process – MANUAL ACTIONS** *Source:* <http://hosting1.codeless.com/CodelessDevelopmentWiki/index.php?oldid=6908> *Contributors:* AnaTurcan
9. **After Installation Completes – MANUAL ACTIONS** *Source:* <http://hosting1.codeless.com/CodelessDevelopmentWiki/index.php?oldid=6907> *Contributors:* AnaTurcan
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