

Validation and SmartBox Data

K2 Package and Deployment New Feature

4.6.10 June 2015

Deploying Application elements to a different SharePoint environment

Once you have created a K2 Application in a SharePoint List or Library, you can create a package of the K2 Application elements. This package can then be deployed to lists or libraries in other sites, web applications, site collections or a completely different SharePoint environment. This topic describes how to use the K2 package and deployment tools to create and deploy packages.

Permissions

To create and deploy a package of the artifacts of a K2 for SharePoint List or Library, ensure that the user deploying the package has the following rights in the target K2 environment.

- Export Rights in K2
- SmartObject Publish rights. A check is performed to validate if SmartObject Publish rights have been set on specific SmartObjects that have been generated in the K2 Application.

Included and Excluded Artifacts

The following table lists the K2 artifacts that are included or not included in deployment packages created with the Package and Deployment tool. You can assume that anything not explicitly listed as included in this table will not be included in the deployment package and may need to be migrated from the source environment to the target environment separately using the appropriate tools or interfaces for that component.

Note that the actual artifacts included in the package are based on selections used when the package is created, and you may need to manually add or remove selected items from the package depending on the artifacts used in your application. K2 will attempt to do a "best guess" as to all the K2 artifacts required for your Application but you should always double-check the artifacts identified by K2 for inclusion.

K2 Artifact	Included in P and D Package?	Notes
Data - SmartObjects	Yes	Even SmartObjects used by the workflow will be included.
Workflows	Yes	When workflows were created outside of the SharePoint Application designer environment (for example with K2 Designer or K2 Studio), you may need to select those workflows manually for inclusion in the package. If they are somehow referenced, P and D will discover the dependency and auto-include them.
Forms and Views	Yes	Only SmartForms Forms and Views are included in the package. Custom user interfaces created with another technology are not included.
Custom SmartForms Controls	Yes	As of K2 4.6.9, custom controls are included in the package.
Reports	Yes	Only the generated reports for the Application are included by default. If you have created custom Forms and Views for reporting purposes, you

		may need to select those items manually. Any custom reports created with another technology (such as SSRS) will not be included in the K2 package.
SmartBox SmartObject Data	User Configurable	SmartBox SmartObject data is excluded by default. This can be manually configured during package creation. Packaged data can then be included or excluded when deploying the package.
Roles	Yes	Roles are deployed as empty. You need to add Role members after deploy- ment.
Service Objects	Yes	
Categories	Yes	
Service Instances	By Reference Only*	SharePoint Service Instances (along with SAP, Salesforce, and all other Service Instances) are included by reference only. In other words, the package contains the GUID or System Name of the Service Instances required by the SmartObjects in the package. If a service instance is found on the target that matches by service instance Name or GUID, it is automatically selected and you cannot select a different Service Instance. If no matching Service Instance is found it will show up as a missing reference.
Custom Ser- vice Instances	Yes	Only Custom Service Instances built using the Smartobject Service SDK can be inlcuded in the package.
Service Types and Service Brokers	By Reference Only*	Service Types and the associated Brokers must already exist in the target environment
Environment Library Fields	By Reference Only*	Environment Fields other than Miscellaneous (Misc) need to exist on the Target. Miscellaneous fields are included in the package.
Workflow Per- missions	No	The deploying user account automatically gains Admin rights on the work- flow. After a workflow is deployed, use the K2 Management site or K2 Work space to set workflow permissions for the deployed workflow definition. This only needs to happen the first time a workflow is deployed since work- flow permissions are version-agnostic.
Custom Ser- vice Brokers	No	Any customizations must be copied over and installed on the target K2 environment using the appropriate deployment mechanisms for those cus- tomizations.
Custom SmartForm Themes	No	Any customizations must be copied over and installed on the target K2 environment using the appropriate deployment mechanisms for those cus- tomizations.
Custom Work- flow Wizards	No	Any customizations must be copied over and installed on the target K2 environment using the appropriate deployment mechanisms for those customizations.

* By Reference Only means the definition of the item is not included, only a reference to the item to ensure it exists on the target environment.

How to Create a Package using K2 for SharePoint

A K2 Package can be created from the K2 Application option of the SharePoint List or Library

Caution

When using the Package and Deploy tool to create or deploy a package in K2 for SharePoint, do not click the Back button in the browser to navigate back. Doing so may result in increased memory usage on the K2 server due to session management. The correct way to cancel out of the Deploy Package screens is to click the Cancel button at the bottom of the screen.

Step 1: Create Package

Select the **Create Package** option from the Package menu. A list of the K2 artifacts associated with this list or library will be presented.

Employee	Source			
K2 Application	↔ New • ⊘ Edit ⊗ Delete ⓐ Delete	All 🕞 Run 🕑	Form Settings	🖲 Package 🕞
A K2 application has been created for this list	Name	Data Type	Status	🔆 Create Package
or library containing the items listed to the	EmployeeSource	SmartObject		🚖 Deploy Package
right. Existing items can be edited or deleted, or new items can be added to this application.	EmployeeSource Attachments	SmartObject		
	🛅 EmployeeSource Add Attachments	View		
	T EmployeeSource Attachments List	View		
	📑 Display EmployeeSource	View		
	📑 Edit EmployeeSource	View		
	📑 New EmployeeSource	View		
	Display EmployeeSource	Form		
	Edit EmployeeSource	Form		
	New EmployeeSource	Form		
	A EmployeeSource Workflow	Workflow	Deployed	

Step 2: K2 artifacts

All K2 artifacts for the list or library are pre-selected. SmartBox data is excluded by default. Click on the SmartObject and use the **Package Data/Exclude Data** option to enable or disable the data packaging for that SmartObject. Click **Next** to continue creating the package.



If Validation warnings occur, hover over the **Status** message for more information. When Validation errors are reported, click on the artifact presenting an error and use the **Details** button, or double click on the artifact for more information. Errors must be fixed before the package can be created.

Validation Results				×
Name	Туре	Details		
🛅 Edit List VR	View	🛕 Checked out by the current user 'K2:DENALLIX\Administrator'. Latest checked out version will be used		
🔲 New List VR	Form	🛕 Checked out by the current user 'K2:DENALLIX\Administrator'. Latest checked out version will be used		
📩 Display List VR	View	Display List VR' View is referencing the 'Save' method on the 'SMO1_3' SmartObject that could not be f	four	
🛅 Edit List VR	View	Edit List VR' View is referencing the 'GetList' method on the 'SMO1_3' SmartObject that could not be for	ounc	
		Details OK		

Step 3: K2 Service Instances

K2 Service Instances may also be included in the package as additional items. We recommend that service instances are packaged by 'Reference Only". Click on the **Exclude** option to change the Status of the service instance from **Add to Package** to **Package by Reference**. Some K2 Service Instances are automatically excluded and packaged by reference only. System Items may also be listed by clicking on the **Show/Hide System Items** option.

Additional Items ۲ The following additional items are included in the package. These items may need configuration in order to be deployed successfully. Variables should be created for any environment-specific value associated with these additional items. Click Edit Properties to see the list of values that you might need to define as variables. If the list is empty, it means there are no out-thebox configurable items. Exclude C Edit Properties Hide System Items Name Status Type Category 📇 From Address Field Add to Package 📇 Mail Server Field Add to Package IIII List (Test1) ListSetting Test1 Add to Package 🛃 Docs Test1\Test1 Workflow Process Add to Package 合 Test1 ServiceObject Add to Package 🔯 WFSetting for Docs Test1\Test1 Workflow WorkflowSetting Add to Package Package Fields/Variables The following variables are used in this package. These are displayed to users deploying this package to their site, allowing them to specify values for items that might have different values in their environments. 🕂 Add 🕜 Edit 🛞 Delete Name Type Value Used By (Count) X SQL User Name Text

Variables can be added to the Package to help configure service instances, and workflow process Data and XML Fields.

Adding a Variable:

- 1. Click on the Add option of the Package Fields/Variables screen.
- 2. Fill in the **Variable Name** and a **Description** that identifies what the variable is for. Click on the **Type** drop down and select the data type. If there is a known value of this variable for the deployment environment, enter

that in the **Default Value** text box.

Additional Items			
	Create Variable		
The following additional its successfully. Variables sho Edit Properties to see the l	Variable Name: *	SQL User Name	
no out-the-box configurat	Description.	SQL User Name	
🕀 Exclude 🕜 Edit Pro			
Name			
CBData on LOCALHOS	Type:	Text	·
	Default Value (optional):		
Package Fields/Varia			
The following variables are them to specify values for i		Г	
🕀 Add 🕜 Edit 🛞 De			OK Cancel
Name	Type V	'alue Used By (Count)	

Assigning Variables:

1. To assign a variable to a field, select the service instance or workflow Data/XML field and click on the **Edit Prop**erties button. Select one of the properties and click on the **Assign Variable** button.

Additional Items	Edit Properties (CBData on LOCALHOST)			□ ×
The following additional items are inclu	⊘ Assign Variable ⊗ Revert to Value			^
successfully. Variables should be create Edit Properties to see the list of values t	Name	Туре	Value	
no out-the-box configurable items.	III Guid	Guid	77bae5af-c5ff-475b-a198-4d448246ffac	
🕀 Exclude 🕜 Edit Properties 😁	🛛 IsExtendible	Yes/No	False	
Name	🕞 Impersonate	Yes/No	True	
CBData on LOCALHOST	A UserName	Text	(empty)	
	A Password	Text		
	A SecurityProvider	Text	(empty)	
	A Extra	Text	(empty)	
Package Fields/Variables	A On Different SQL Server	Text	false	
The following variables are used in this p	$\underline{\mathbf{A}}$ Non-word character replacement for object	Text	-	
them to specify values for items that mig	A TypeMapping	Text		'>
🕀 Add 🕜 Edit 🛞 Delete	A Command Timeout	Text	30	
Name	A Database Maximum Decimal Value	Text	23,9	
X SQL User Name	A Database	Text	CBData	
	A Server	Text	LOCALHOST	
	A Use parameters for stored procedures	Text	true	\sim

2. You can either add a new variable, or use an existing variable.

	Assign Variable (UserName)			×		Cancel	
Additional Items The following additional items are in successfully. Variables should be cri Edit Properties to see the list of valu no out-the-box configurable items.	Specify whether to create a new variable of default value that the person deploying the environment. Create New Variable Variable Name: *	or use an existing one. For new variables you can specify a description an nis package will see. They can still change the value of the variable for the	d a	~	, t	Cancel	□ ×
Name	Type: Default Value (optional):	Text					
Package Fields/Variables The following variables are used in t them to specify values for items that Add C Edit O Delete		SQL User Name Select an item	•				">
Name SQL User Name			Iancel				
	A Use parameters for stored proced	ures Text true					~

3. After clicking on the **OK** button, the variable will be assigned to the property. Scroll down and click on the **OK** button to close the Edit Properties window.

Edit Properties (CBData on LOCALHOST)				×
⊘ Assign Variable ⊗ Revert to Value				~
Name	Туре	Value		
III Guid	Guid	77bae5af-c5ff-475b-a198-4d448246ffac		
🖗 IsExtendible	Yes/No	False		
🖄 Impersonate	Yes/No	True		
A UserName	Text	X Variable: SQL User Name		
A Password	Text			
A SecurityProvider	Text	(empty)		
A Extra	Text	(empty)		
A On Different SQL Server	Text	false		
$ar{\mathbf{A}}$ Non-word character replacement for object	Text	-		
A TypeMapping	Text		">	
A Command Timeout	Text	30		
A Database Maximum Decimal Value	Text	23,9		
A Database	Text	CBData		
A Server	Text	LOCALHOST		
▲ Use parameters for stored procedures	Text	true		~

Click **Next** to continue to the creation of the K2 package.

Your package is downloading		1
If the package has not downloaded after 30 seconds, please click here		
Do you want to open or save Show_SI_DemoList_Administrator.kspx from k2.denallix.com? Open Save 🔻 Cancel 🗙	Back Finish	•

Step 4: K2 Package file

You may now save the created K2 Package file.

How to Create a Package using the Microsoft Management Console

Step 1: K2 Package and Deployment

Open K2 Package and Deployment from Start > All Programs > K2 blackpearl > K2 Package and Deployment

Step 2: Create

Ensure that the relevant Server is highlighted. Select **Create a New Package** from the Actions pane on the right.

🕵 K2 Package and Deployment - [Console Root\LC	CALHOST]			_ 🗆 🗙
🔀 File Action View Window Help				_ 8 ×
🗇 🔿 🙍 🖬 🛛 🖬				
Console Root	📑 🔐 New 🛃 Edit 📑 Delete 🛃 Refresh		Actions	
	Server	Status	LOCALHOST	-
	n DLX:5555	Running	DLX:5555	
			í Create New Package	
			📫 Edit Package	
			🔮 Deploy Package	
			View	•
			New Window from Here	
			🛋 Rename	
			Q Refresh	
			7 Help	

Once the **Create Package** window has loaded, enter the name of the package in the Package Name text box, plus a description of what will be defined within the package. Use the **Browse** button to navigate to the location where the package will be saved.

🗜 Create Package	
Packaging	
Package Name:	Expense Claim
Description:	
Location:	
	C:\Users\Administrator\Documents Browse
	 Automatically include dependent items
0	Back Next Finish Cancel

Step 3: Add Items

- 1. Click on **Next** to navigate to the **Add Items** window.
- 2. Click **Add Items**. The K2 Package and Deployment tool will query the K2 Server and compile a list of K2 artifacts which can be packaged. The status of all artifacts which are currently checked out will be marked with a red exclamation mark. If K2 artifacts are not checked in, K2 Package and Deployment will not be able to reference them for packaging.
- 3. Expand the SharePoint node and browse to the list or library you want to package. Select the K2 Application artifacts (SmartObjects, Forms, Workflows and Reports) that must be included in the package.

Note

You do not need to package the artifacts in the Management node as these are automatically created when the K2 Application is registered on a SharePoint site. It is also not necessary to package any specific Environment Fields when creating a package of K2 for SharePoint.

🚼 Add Items				
Select the items that should be added into the package				
💈 🕼 Select All 🛛 🔂 Clear All				
Name	Туре	Status	Properties	Data
🖽 🖳 🧰 Active Directory	Category		Name	Turne Velue
🕞 🔲 📄 SharePoint	Category		Name	Type Value
🗄 🔲 🛅 portal.denallix.com	Category			
🚊 🔚 🛄 Lists	Category			
	Category			
🖃 🐨 🔽 🚞 Expense Claims	Category			
Display Expense Claims	Form			
🐨 📝 📩 Display Expense Claims	View			
	Form			
	View			
Expense Claims	SmartObject			
	View			
	SmartObject			
🐨 📝 📩 Expense Claims Attachments List	View			
	Workflow			
	Form			
🐨 📝 📩 Expense Claims Workflow Reports	View			
	Form			
	View			
🖃 🛄 🛄 Management	Category			
🗄 🗄 System	Category			
🗄 🖳 🛄 Task Allocation	Category			
🗄 🖳 📄 Workflow	Category			
🗄 🖳 📄 Workflow Notifications	Category			
🗄 🖳 📄 Workflow Reports	Category			
🗄 🗄 🗌 🚔 Additional Items (Uncategorized)				
•		E. F.		
0				
0				OK Cancel

Step 4: Finish Click **OK** and **Finish** to create the package.

ame	Туре	Status		Properties	Data D	ependencies	Used By
🔚 SharePoint	Category						
🚊 portal.denallix.com	Category			Name		Type	Value
E Lists	Category			Properti			
Expense Claims	Category				ystem Name	-	SharePoint
Display Expense Claims	View				isplay Name	-	SharePoint
Display Expense Claims	Form					String	26
Edit Expense Claims	View				escription	String	_
Edit Expense Claims	Form			🖀 🔤	sRoot	Boolean	True
🗄 Expense Claims	SmartObject						
Expense Claims	Service Object						
Expense Claims Add Attachments	View						
Expense Claims Attachments	SmartObject						
Expense Claims Attachments	Service Object		=				
····· 📑 Expense Claims Attachments List	View						
Expense Claims Workflow	Workflow						
····· 🛅 Expense Claims Workflow Reports	View						
🔲 Expense Claims Workflow Reports	Form						
····· 🛅 New Expense Claims	View						
New Expense Claims	Form						
··· 🚞 System	Category						
🖮 🛅 SharePoint Integration	Category						
👓 🖬 SharePoint Integration Event	SmartObject						
📟 🖬 SharePoint Integration Helper Methods	SmartObject						
🔤 SharePoint Integration Setting	SmartObject						
📟 💼 SharePoint Integration Settings Events	SmartObject						
📟 💼 SharePoint Integration Workflow	SmartObject						
📟 💼 SharePoint Integration Workflow Event	SmartObject						
SharePoint Integration Workflows Events	SmartObject						
🗝 🚔 Additional Items (Uncategorized)							
	Image		-				

How to Deploy a Package using K2 for SharePoint

A K2 Package can be deployed from the K2 Application option of the SharePoint List or Library.

Caution

When using the Package and Deploy tool to create or deploy a package in K2 for SharePoint, do not click the Back button in the browser to navigate back. Doing so may result in increased memory usage on the K2 server due to session management. The correct way to cancel out of the Deploy Package screens is to click the Cancel button at the bottom of the screen.



EmployeeSource

K2 Application

A K2 application has been created for this list or library containing the items listed to the
right. Existing items can be edited or deleted,
or new items can be added to this application.

🕀 New 🔻 🕜 Edit 🛞 Delete 適 De	lete All 🕟 Run	Form Settings	🖲 Package 🔻
Name	Data Type	Status	🔅 Create Package
EmployeeSource	SmartObject		😑 Deploy Package
EmployeeSource Attachments	SmartObject		
EmployeeSource Add Attachments	View		
EmployeeSource Attachments List	View		
📑 Display EmployeeSource	View		
📑 Edit EmployeeSource	View		
📑 New EmployeeSource	View		
Display EmployeeSource	Form		
Edit EmployeeSource	Form		
New EmployeeSource	Form		
🛱 EmployeeSource Workflow	Workflow	Deployed	

Step 1: Deploy Package

Click on the **Deploy Package** option from the Package menu item. The Deploy Solution package window will then show. Browse to where the K2 Package was saved and select the file. Click on **Open** to continue.

Deploy Solution					×
Select the package (.ksp	x) file to deplo	ıy.			
Package	(K2	w_EmployeeSource_Administrator.kspx Package & Deployment) 47 KB	Open Canc	el	

Step 2: Artifacts

The K2 Package will now load, and the artifacts within the package will be analyzed.

Processing Package	×
Working on it	
📀 Uploading Package	
Uploading the package to the K2 Server.	
S Updating Packaged Items	
Refactoring the packaged SharePoint items based on the current list or library.	
Analyzing Dependencies	
Determining and updating the dependencies based on the results of the refactoring.	
Resolving References	
Resolving remaining items and references.	

Step 3: Columns

Once the package is loaded, the **Columns** configuration screen will show. If the List or Library columns of the destination environment match the source environment, then the screen will automatically navigate to the **Additional References**.

TargetSiteColl				Newsfeed SkyDrive Sites	2
BROWSE				6	ż
∎ ⊦∙{	TargetSiteSo	urceList - D	eploy Package	Refresh Next Cancel	
	Columns				
	Columns and Lookups in the solu	tion package must be mappe	d to Columns and Lookups on the target list/library	y and site. Click here to edit the list or library.	
	Column (Package)	Type Field	Status ✓ OK	Column (this List/Library) ELkupCold	
	E LookupCol (Value)	Field	Column not found Click here to edit TargetSiteSourceList	Please select item 👻	
	III PortalLookupList	List	Missing Reference	Please select item	
				Refresh Next Cancel	

Use the destination Column drop down to select the matching column in this environment, or use the **Click here to** edit link to open the List or Library Settings screen so that you can add the required column. Use the **Refresh** button after changing settings so that the new properties are available.

Note

If you select a Column object that does not match the original List or Library, a warning will display informing you of

what columns are missing from the target.

					Newsfeed SkyDrive	Sites ?	
BROWSE						6	ł.
	TargetSiteSo	ourceList - [Deploy Package		Refresh Next Cancel		
- 4					Refresh Next Cancel		
	Columns						
	Columns and Lookups in the so	olution package must be mapp	ed to Columns and Lookups on the target list/library and	ite. Click here to edit the list or libr			
	Column (Package)	Туре	Status	Column (this List/Library)			
	E LookupCol	Field	✓ OK	E LkupCold	-		
	E LookupCol (Value)	Field	🗸 ОК	E LkupCold (Value)	٣		
	III PortalLookupList	List	🗸 ОК	TargetSiteLookupList	~		
					Refresh Next Cancel		

Click on **Next** once all the Columns show as **OK** in their Status property.

Step 4: Additional References

Once the **Columns** configuration is finalized, the **Additional References** configuration screen will show.

∎ ⊾∙{	TargetList - D	Refresh	Next	Cancel		
	Additional References					
	The following items are referenced in	the solution. Ensure each item's destination is correct	and configure how SmartBox D	ata, if present, sho	ould be han	dled.
	🕗 Configure 🛛 📀 Refresh					
	Packaged Item	Туре	Destination			Status
	SmartBox Service	Service Instance (SmartBox Service)	SmartBox Service			🗸 ОК
	portal.denallix.com	Service Instance (SharePoint 2013)	portal.denallix.com			🗸 ок
				Refresh	Next	Cancel

Use the **Configure** button to make any changes that are needed for this local environment. If SmartBox data was included in the package and you configure the parent SmartObject to use a SmartObject already deployed to the target environment (**Use Existing**), configure the SmartObject Data artifact to **Do not Deploy** to keep the data of the target environment, or **Overwrite** to write the packaged data to the target environment (overwriting the data already there). When deploying SmartObject Data artifacts with a new SmartObject (**Create New**) you have the option to **Deploy** or **Do not Deploy** the data.

If you have changed the configuration, then click on the **Refresh** button to re-analyze the artifacts in the package.

Configure Service Instance (Sma	rtBox Service)		· · · · ·		
Item:	SmartBox Service				
Description:					
Service Instance:	SmartBox Service	•			
Packaged Item	Туре	Action	Existing Item		Status
SMOWithData	SmartObject	Use Existing	SMOWithData	Ŧ	🗸 ОК
醥 SMOWithData Data	SmartObject Data	Overwrite	🖉 SMOWithData Data	Ŧ	🗸 ОК
SMOWithoutData	SmartObject	Overwrite		Ŧ	🗸 ОК
		Do not Deploy			
(i) Can't find what you're looki	ng for?			Refresh	OK Cancel

Тір

Some Service Instances are package specific and are not configurable. The drop down for those Service Instances will be grayed out.

When all the Additional References and Service Instances are correctly configured, click **Next** to continue.

EmployeeDest - Deploy Package						
				Back	Next	Cancel
	Variables			۲		
	package. Review the exis	for each package variable ting default values, if any, a s for any remaining variable	nd make changes as	ne		
	Name	Description	Value			
	No items to display.					
				Back	Next	Cancel

Step 5: Variables

If there are **Variables** configured within the K2 Package, use this screen to edit the value of the variable to match this environment. Click **Next** to continue.

Emp	bloyeeDest	- Deploy Pa	ackage		Parla	- Court
				Back	Deploy	Cancel
	Summarv					
	This solution package is now ready to deploy. Please review the summary below of the configuration that has been specified thus far. Click on Deploy to deploy this package, or click on Back to make changes.					
	Columns			۲		
	The following column mapp	ings were configured:				
	Column (Package)		Column (this List/Library)			
	pwdh		x00q			
	EmpRegionSource		EmpRegionDest			
	Value		Value			
	Variables			۲		
	This package contains the fo	llowing variables:				
	Name	Description	Value			
	No items to display.					
				Back	Deploy	Cancel

Step 6: Summary

A summary of the deployment will now display. If there are any issues, use the **Back** button to navigate back to the screen where that item can be configured. If everything is correct, click on the **Deploy** button to start the deployment of the package to this environment.

Step 7: Working

While the package is being deployed, the Working on it screen will show.

Processing Package	×	ξ
Working on it		
Deploying Package (18 of 24)		
The package is being deployed to the server. Depending on the complexity of this solution, this may take a few moments.		

Step 8: Report

Once the package has been deployed, a summary report will show. If any errors occurred they will be reported here. Use the **Download Log File** button to save a local copy of the deployment log (the log file can be used to troubleshoot an issue. Click on **OK** to conclude the deployment process.

EmployeeDest - Deploy Package	
Summarv The solution package has been deployed.	۲
29 items were deployed successfully 1 items failed deployment	
Download the log file for more information.	ок

If any artifacts failed to deploy, use the log file to investigate what the problem is. Once the problem is resolved (i.e. the Mail Server is back online), click on the **Retry** button to re-deploy the package.

How to Deploy a Package from the Microsoft Management Console

Step 1: Environment

Requirement: On the target environment install K2 for SharePoint and deploy the K2 Application to the App Catalog using the AppDeployment.exe available in [Install Directory]:\Program Files (x86)\K2 blackpearl\K2 for SharePoint 2013 Setup. Create the exact same list or library (column names, fields and content types must match) in the target environment. You do not have to integrate into the list or library, just add the K2 App and run the configuration on the target environment, this will create a required service instance for you to rebind the service object to. If the target SharePoint environment's site is not set up to mirror the source SharePoint environment at deployment, missing references will be encountered and will need to be resolved before the package can be deployed.

Step 2: K2 Package and Deployment

Open K2 Package and Deployment from the Start menu. Select **Deploy Package** from the Actions pane on the right.

K2 Package and Deployment - [Cons	ole Root\LOCALHOST]		
File Action View Window He	lp		- 8 ×
Console Root	🗄 🖹 New 📝 Edit 🖡	Delete 🙋 Refresh	Actions
	Server	Status	LOCALHOST 🔺
	DLX:5555	Running	DLX:5555
			📫 Create New Packa
			📫 Edit Package
			🔮 Deploy Package
			View 🕨
			New Window fro
			🛒 Rename
			G Refresh
			🛛 Help

Use the **Browse** button to locate and load the K2 Deployment Package into the **Select Package** dialog screen.

👫 Select Package		
Select the package you wish to deploy		
File Name:		
	C: \Users\Administrator\Documents\Expense Claim.kspx	Browse
Name:	Expense Claim	
Description:		
Options		
Packaged Items:		
Packaged Items:	Automatically select all items (recommended)	
	Manually select specific items	
Analyze:	 Full: An analysis to determine if the packaged items exist on the server and comparison of their structures (recommended) 	
	 Partial: An analysis to determine if the packaged items exist on the server 	
	Continue deploying packaged items if one or more items cannot be deployed	
	Remember my settings	
0	Back Next Finish	Cancel

Step 3: Deploy Package

Click **Next**. The **Deploy Package** window will open. You will need to assign variables, resolve conflicts, and solve dependency issues at this point. If your site and portal have the same name you will not see any missing references or conflicts.

The following will show as missing references and will need to be remapped if your site or portal names are different:

• Service Objects: The SharePoint List or Library will show as a missing reference and must be rebound to the matching SharePoint List or Library in the target environment. If for example the source environment is https://portal.denallix.com and in the target environment you map it to https://sales.denallix.com, then the service instance missing reference also needs to be mapped to same service instance for https://sales.denallix.com. In the Properties column, right click on the missing Reference, select Configure, then expand the tree to open the SharePoint environment objects screen to select the object to map that property to in the target environment.

🔆 Configure 👻 🔎 Analyze 🛛							
lame	Туре	Action	Status 🔺	Properties	Dependencies	Used B	у
🗏 🐨 🚺 SharePoint	Category			Name			Type Value
🖃 🐨 🚺 portal.denallix.com	Category			🕞 G	etListItem		read
🖹 🐨 🔽 Lists	Category			📔 🕞 G	etListItemByTitle		read
🖻 🐨 🚺 🚞 Expense Claims	Category				etListItemByNam	e	read
····· 🔽 🛅 Display Expense Claims		Create New View	💟 Ready		reateListItem		create
Display Expense Claims		Create New Form	💟 Ready	🕞 u	IpdateListItem		update
Edit Expense Claims	View	Create New View	Ready		eleteListItem		delete
📝 🛅 Edit Expense Claims	Form	Create New Form	💟 Ready		ecycleListItem		execute
🖃 🐨 🔽 🍙 Expense Claims	SmartObject	Create New SmartOb	A Missing Reference		estoreListItem		execute
🔽 🎒 Expense Claims	Service Object	Create New Service	Missing Reference		CopyListItem		execute
🗹 🛅 Expense Claims Add		Create New View	Ready		lovel.istItem		execute
🖃 🐨 🝙 Expense Claims Atta		Create New SmartOb	1 Missing Reference	II 2 "	CopyListItemFrom		execute
🔤 📝 🎒 Expense Claims	-	Create New Service	🕒 Missing Reference 🛛 🗉		loveListItemFrom		execute
	View	Create New View	🛇 Ready	Referen			execute
	Workflow	Create New Workflow	📀 Ready		Expense Claima		CharoDoint List
	View	Create New View	📀 Ready		Content Type	<u>%</u> (Configure
	Form	Create New Form	📀 Ready		= · · ·		
🔽 📩 New Expense Claims	View	Create New View	📀 Ready		Title	0	nclude
New Expense Claims	Form	Create New Form	📀 Ready		Modified	O E	Exclude
🖳 🔽 📋 System	Category				Created		Create New Version
🖃 🔽 🚞 SharePoint Integration	Category					1.20	reate New Version
	SmartObject	Use Existing SmartOb	📀 An identical object was f			rg l	Jse Existing Version
📝 🝙 SharePoint Integration Help	SmartObject	Use Existing SmartOb	An identical object was f				-
	SmartObject	Use Existing SmartOb	An identical object was f		Modified By	<u>Þ</u> /	Analyze
🔽 🝙 SharePoint Integration Setti	SmartObject	Use Existing SmartOb	An identical object was f		Modified By (Va Version	-	SharePoint Field
	SmartObject	Use Existing SmartOb	📀 An identical object was f		Attachments		SharePoint Field
	SmartObject	Use Existing SmartOb	An identical object was f		Link to Item		SharePoint Field
🐨 📝 📄 SharePoint Integration Work	SmartObject	Use Existing SmartOb	An identical object was f		Folder		SharePoint Field
🗄 🐨 🕼 Additional Items (Uncategorized)					Name		SharePoint Field
🐨 📝 🚓 GreyArrowRight	Image	Use Existing Image	📀 An identical object was f 🔻		iname III		SharePoint Field
	III						

- When selecting the list or library to bind to, all lists and libraries on the site where the K2 app has been deployed to will display.
- When resolving conflicts at deployment time, only the following items shown as missing references can be resolved on the screen
 - The List itself which will open the tree view
 - The service instance
 - Fields although shown as missing references, cannot be remapped, they are there only to show which fields are missing, and will be removed after a matching list is chosen, If a list with missing fields has been selected the correct fields missing references will automatically be matched and will disappear and the



missing ones will still show as missing references.

System artifacts are linked to SmartObject associations and should already exist in the target environment. If they show as a missing reference, configure them to use the existing ones.

- 1. Check that all needed artifacts and dependencies have been checked for inclusion in the deployment package. The total number of items to be deployed appears in the lower left corner of the window.
- 2. All conflicts must be resolved before the package can be deployed to the new environment. If a conflict cannot be resolved, the artifact or dependency causing the conflict must be de-selected. Once all conflicts have been resolved, run the Analyze All option to update the tool's internal status check.

Step 4: Deploying

- 1. Click Next. K2 Package and Deployment will interrogate both the K2 artifact definitions and the K2 environment to be deployed to.
- 2. The Deploy Package Deploying window will load. This is a list of the packaged items and their readiness status. The time taken to deploy the package's artifacts and dependencies will be shown in the right-hand column once deployment is complete. Where a status icon to the left side of a deployed item shows a green check mark, the item has been successfully deployed.

E Deploy Package - Deploying DemoPackage01		- • •
Description		Duration
College (NvdB) Category		0
		Save Log
0	Back Next Einish	<u>Cancel</u>

Note

Deployment times may vary depending on the size of packages to be deployed. To avoid inconvenience, it is recommended that large packages are deployed only after regular working hours.

3. If an artifact fails to deploy due to circumstances beyond K2 Package and Deployment's control, a red exclamation mark will be displayed next to the artifact that fails to deploy:

Description	Duration	Retry
Upper DemoPackage01	0	Retry All
😲 NickTable 1 on DLX Service Instance : A network-related or instance-specific error occurred while establishing a connection to S	14 s	Retry
😲 [dbo]. [Nick Test Table 1] SmartObject : Dependancy could not be created: System.Exception: Dependancy could not be create	181 ms	Retry
📀 [dbo]. [Nick Test Table 1] Item View	1 s	
📀 [dbo]. [Nick Test Table 1] List View	678 ms	
📀 [dbo]. [Nick Test Table 1] Editable List View	1 s	
📀 [dbo]. [Nick Test Table 1] Form	1 s	
📀 Default Category	68 ms	
		Save Log

4. If such a deployment failure occurs, double-click on the artifact responsible to view an explanation for the failure:

Description		Duration	Retry
🕒 DemoPackage01		0	Retry All
• NickTable 1 on DLX Service Instance : A network-related or instance-specific error occurred while estab	lishing a connection to S	14 s	Retry
. [United and the second second and the second and	ancy could not be create	181 ms	Retry
📀 [dbo]. [Nick Test Table 1] Item View		1s	
📀 [dbo]. [Nick Test Table 1] List View		678 ms	
📀 [dbo]. [Nick Test Table 1] Editable List View		1s	
📀 [dbo].[Nick Test Table 1] Form		1 s	
📀 Default Category		68 ms	
A network-related or instance-specific error occurred while establishin Server. The server was not found or was not accessible. Verify that the i and that SQL Server is configured to allow remote connections. (provid error: 40 - Could not open a connection to SQL Server)	instance name is corre	ct	
	OK Show D	etails	
			Save Loo

5. When the reason for the deployment failure has been rectified, click on the **Retry** or **Retry All** link next to the relevant artifact or dependency to re-attempt deployment.

Caution

If the K2 Server has been rebooted since the deployment of the package, using the Retry option will not work.

- 6. If a deployment log needs to be created and saved, click the **Save Log** button. The **Save As** window will open, allowing you to re-name and save the log file.
- 7. Close the **Deploy Package Deploying** window. This will conclude the deployment process.

Editing a Package

Editing a package will allow you to update the artifacts in the package or add new artifacts to the package. When editing a package, you only need to select the artifacts that have changed. For example, if columns are added to a SharePoint List or Library and the SmartObjects and forms in the K2 Application are regenerated, customized or modified, you can select these in the edit package and they will default to create new versions and these can then be overwritten in the package.

The same is true at deployment time: select the modified artifacts in the package that you want to deploy.

Considerations

 K2 for SharePoint 2013 has a much lighter footprint in SharePoint compared to previous SharePoint integrations. In prior SharePoint integration, K2 had custom web services using SharePoint APIs to integrate with SharePoint. With K2 for SharePoint 2013, K2 only integrates with Microsoft CSOM brokers and presents the user interface using an iframe. Missing references in a deployment are purely due to this integration, as the service object is based on the names, internal names, guid etc. of the list columns. Some of these will never be the same on the target site. Package and Deployment is therefore used to remap them in order to deploy a working SmartObject.

- 2. If custom view and forms are used, the term store and term set GUIDS must be manually set after deployment.
- 3. If you package a K2 App where the SmartObject Property is based on a taxonomy field (Managed Metadata) the Term Store and Term Set will not be included in the package. The user must ensure that the target environment is setup correctly with the necessary Term Store and Term Sets.
- 4. Categories in SharePoint when deploying across environments, renaming of categories will occur. For example: On the source Environment (http://portal.denallix.com/)

You Integrated K2 with a list called "Sales"

Your category structure will resemble the following:

- SharePoint
 - Portal.denallix.com
 - Lists
 - Sales
 - Sales Smo1
 - Sales Form1
 - Etc.

On the Target Environment (http://sales.denallix.com/sites/main)

You deploy your package, and rebind your list to "SalesX"

Your category structure will resemble the following:

- SharePoint
 - sales.denallix.com
 - Lists
 - SalesX
 - Sales Smo1
 - Sales Form1
 - Etc.

Note

- 1. The artifact names will still contain the original lists name.
- 2. When clicking on your list 'SalesX' and then the K2 Application icon, the Artifact page breadcrumb will still show as 'Sales' list as this is based on the category name.
- 5. In certain scenarios when remapping to a list or library that does not match the definition in the source environment the SharePoint field items will remain in conflict. You will need to cancel the package, fix the definition and then deploy the package again.
- 6. If multiple servers are added to the K2 Package and Deployment console, ensure that all the servers are running the same version of K2.

Artifacts included in the K2 Package

K2 Package and Deployment can package the following K2 artifacts created in the context of K2 for SharePoint:

- K2 SmartObjects
- K2 Forms
- K2 Workflows
- K2 Workflow Reports

Artifacts not included in the K2 Package

K2 Package and Deployment will not package the following:

- SharePoint Lists or Libraries
- SharePoint items (data in the list or libraries)
- SharePoint fields, columns or content types
- SmartObject data
- Report data

Caution

Do not rename the system names of SharePoint auto-generated SmartObjects, views and forms.

Important considerations about deploying Application elements

This topic provides important information on deployment and re-deployment of application elements.

Data

If you have generated Data (SmartObjects) for a SharePoint List or Library and then subsequently make changes to that List or Library (for example adding or removing a column), the generated SmartObject will be out of sync with the changed List/Library. To fix this, you need to re-generate the SmartObject to sync the changes. See the K2 for SharePoint 2013 User Guide **Changes to a SharePoint List or Library Structure** topic for more information.

In practical terms, SmartObjects are not version-aware and any Forms, Workflows or other items that make use of a SmartObject will always use the latest deployed version of that SmartObject. While this is normally not a problem if you are adding properties or methods to a SmartObject, deleting or changing an existing SmartObject property or method might affect existing Forms or Workflows.

Forms

While K2 retains an audit trail of Form and View changes, in practical terms Forms and Views are not version-aware and the latest deployed version of the Form/View will always be used. When Forms are associated with a workflow (for example to start the workflow or in a User Task), the workflow will always use the latest version of the deployed Form. Workflow versions are not bound to Form versions and existing workflow instances will use the latest deployed version of Forms and Views.

Workflows

When a workflow is deployed, a new version for the workflow is created and this new version will be set as the default workflow version when starting new instances of the workflow. Workflows are version-aware and any existing instances of the workflow are not automatically upgraded to the new version; they will continue to run on the version of the workflow that they were started against.

Terms of Use

Acceptance of Terms

THIS DOCUMENTATION IS SUBJECT TO THE FOLLOWING TERMS OF USE ("TOU"). SOURCECODE TECHNOLOGY HOLDINGS INC. RESERVES THE RIGHT TO UPDATE THE TOU AT ANY TIME WITHOUT NOTICE. THE MOST CURRENT VERSION OF THE TOU CAN BE REVIEWED BY CLICKING ON THE "TERMS OF USE" LINK IN THE TABLE OF CONTENTS.

Copyright

© 2008-2015 SOURCECODE TECHNOLOGY HOLDINGS, INC. ALL RIGHTS RESERVED. SOURCECODE SOFTWARE PRODUCTS ARE PROTECTED BY ONE OR MORE U.S. PATENTS. OTHER PATENTS PENDING. SOURCECODE, K2, K2 BLACKPEARL, K2 SMARTFORMS AND APPIT ARE REGISTERED TRADEMARKS OR TRADEMARKS OF SOURCECODE TECHNOLOGY HOLDINGS, INC. IN THE UNITED STATES AND/OR OTHER COUNTRIES. THE NAMES OF ACTUAL COMPANIES AND PRODUCTS MENTIONED HEREIN MAY BE THE TRADEMARKS OF THEIR RESPECTIVE OWNERS.

Third-Party Integration

SOURCECODE MAY MODIFY, ADJUST OR REMOVE FUNCTIONALITY IN THE K2 SOFTWARE IN RESPONSE TO CHANGES MADE TO VERSIONS OF THE RELEVANT MICROSOFT OR OTHER THIRD PARTY PRODUCTS. THIS DOCUMENTATION MAY PROVIDE ACCESS TO OR INFORMATION ON CONTENT, PRODUCTS, AND SERVICES FROM THIRD PARTIES. SOURCECODE TECHNOLOGY HOLDINGS INC. IS NOT RESPONSIBLE FOR AND EXPRESSLY DISCLAIMS ALL WARRANTIES OF ANY KIND WITH RESPECT TO THIRD-PARTY CONTENT, PRODUCTS, AND SERVICES.

Notice regarding content of this documentation

WHILE EFFORTS WERE MADE TO VERIFY THE COMPLETENESS AND ACCURACY OF THE INFORMATION CONTAINED IN THIS DOCUMENTATION, THE DOCUMENTS AND RELATED GRAPHICS CONTAINED IN THIS DOCUMENTATION COULD INCLUDE TECHNICAL INACCURACIES OR TYPOGRAPHICAL ERRORS. SOURCECODE TECHNOLOGY HOLDINGS INC. MAY MAKE IMPROVEMENTS AND/OR CHANGES IN THE DOCUMENTATION AT ANY TIME AND WITHOUT NOTICE. ERRORS AND INACCURACIES MAY BE REPORTED IN WRITING TO DOCUMENTATION@K2.COM