

Using the z/OS Installation Strategy (Installing a Portable Software Instance)

Abstract:

You hopefully have heard about the z/OS Installation Strategy? This is an undertaking that is across the entire z/OS industry (with strong participation from both IBM and ISVs) to provide a common installation and packaging method that you use from z/OSMF.

This self-directed education module will take you through each step needed to install a Portable Software Instance.

So, you've bought a great new product called "The Box III" from Hooli! You've acquired the file (from the Try It! Section on this website: <https://www.ibm.com/support/z-content-solutions/serverpac-install-zosmf/>). What's next? A very simple deployment with z/OSMF Software Management.

What level of z/OSMF do you need to package or install a PSI? Ensure you have the appropriate z/OSMF Software Management support installed:

z/OSMF Software Management requires the PTF that fixes APAR PH22280 as follows:

- z/OS V2.4 (HSMA244) = UI68122
- z/OS V2.3 (HSMA234) = UI68121
- z/OS V2.2 (HSAM224) = UI68123

z/OSMF Workflows requires the PTF that fixes APAR PH04817 as follows:

- z/OS V2.3 (HSMA237) = UI60040
 - z/OS V2.2 (HSMA227) = UI60042
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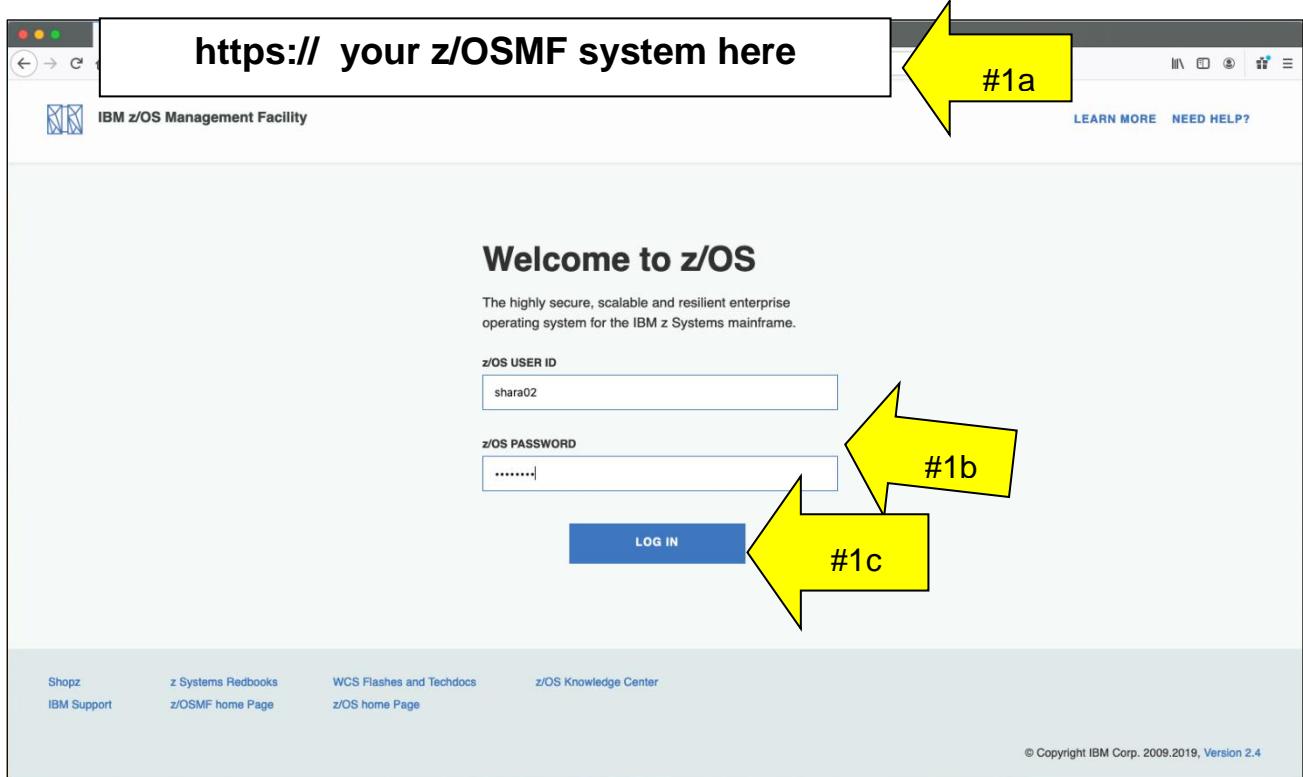
When you follow this self-directed education module, here is a high-level overview of what you will learn:

1. Logon to z/OSMF.
2. Install a Portable Software Instance provided from a software vendor using z/OSMF Software Management's deployment task.

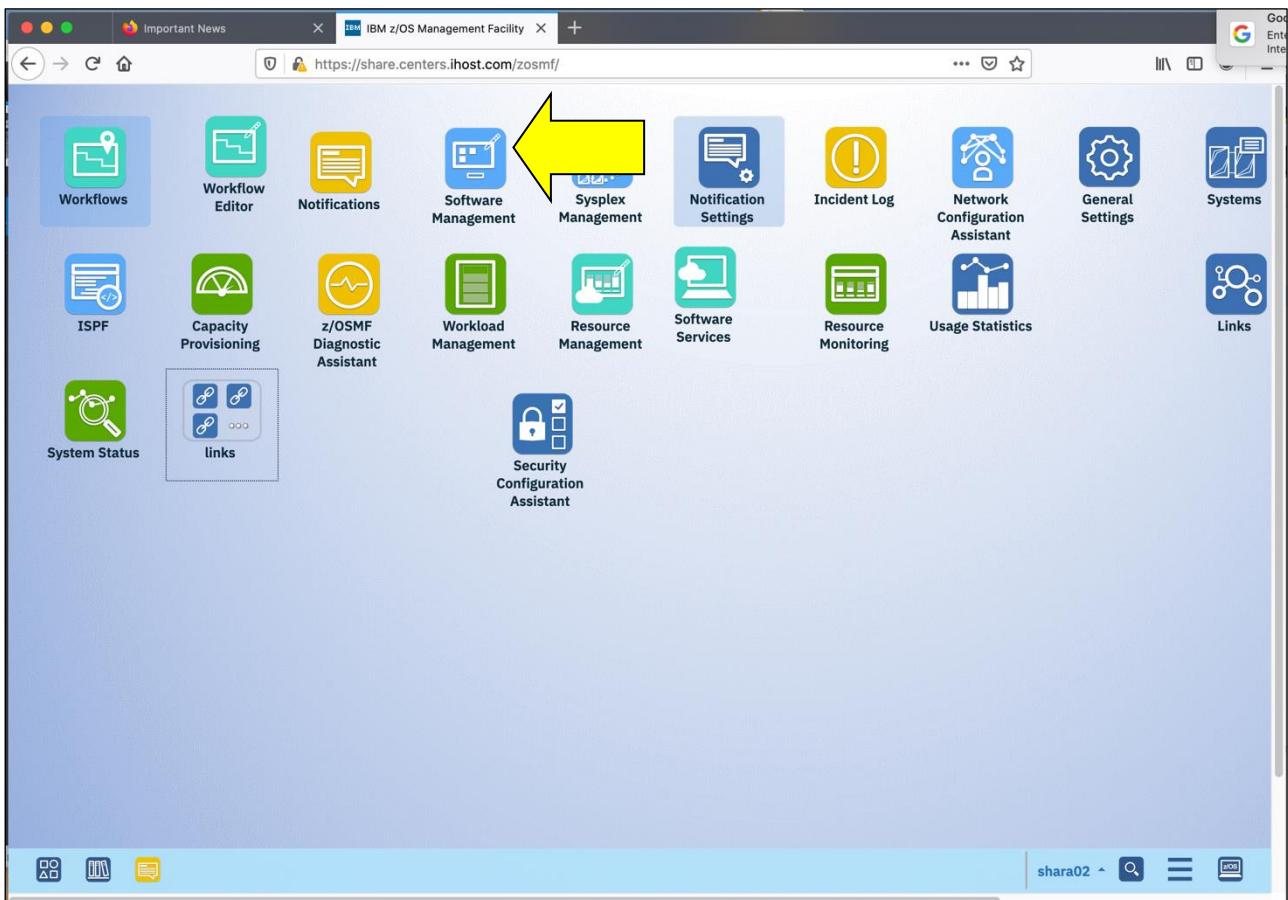
Logon to z/OSMF.

In this step, we will now go into z/OSMF to use the Software Management function. For these screen shots, we are using a z/OSMF V2.4 system.

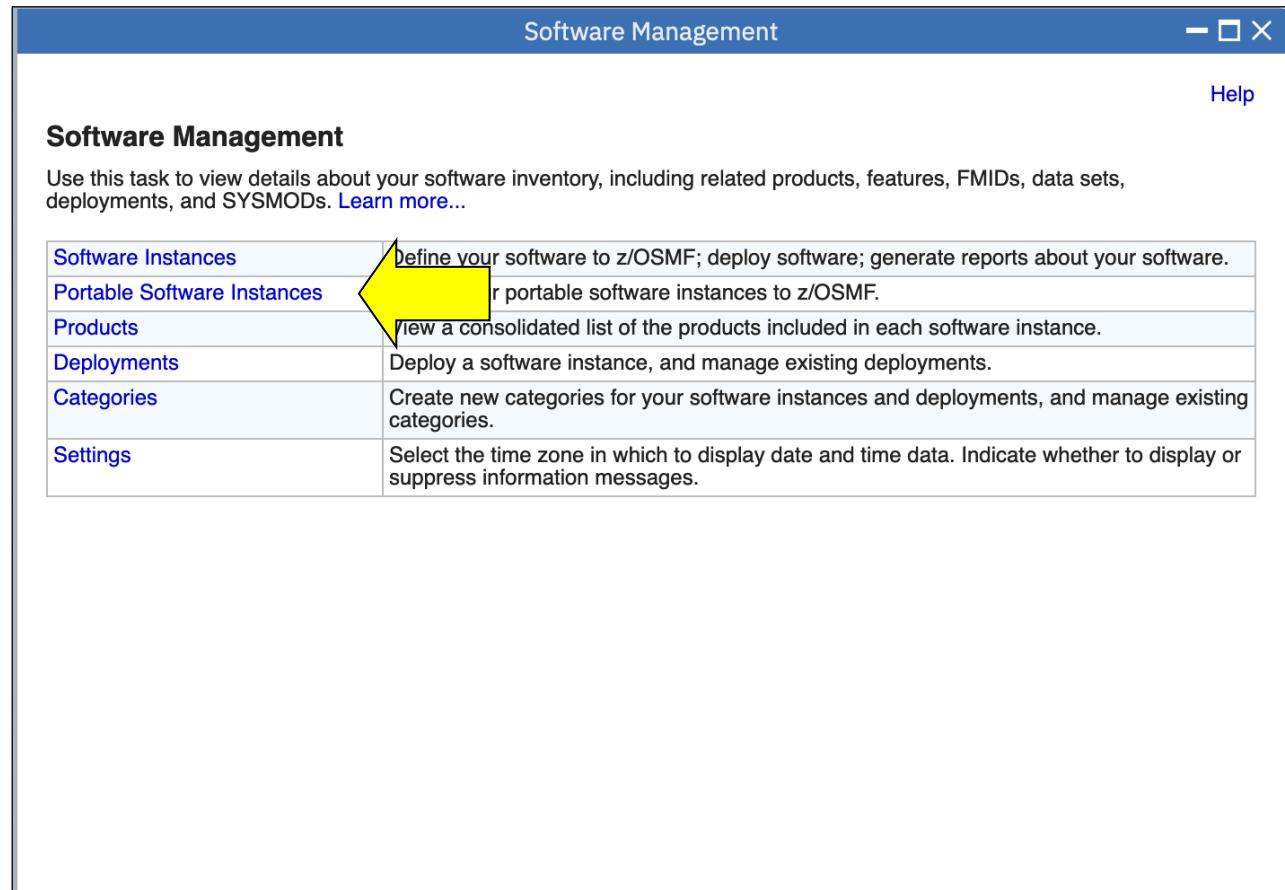
- a. Go to your z/OSMF system on a web browser. (If you want to follow this education module on your own system, that is fine, and encouraged!)
- b. Use your userid which is a regular z/OS userid on this system and has been given access to z/OSMF. There is *no* z/OSMF code on this workstation, all executables (except the web browser) is on the z/OS system.
- c. Click on “LOG IN”.



Click on “Software Management”.



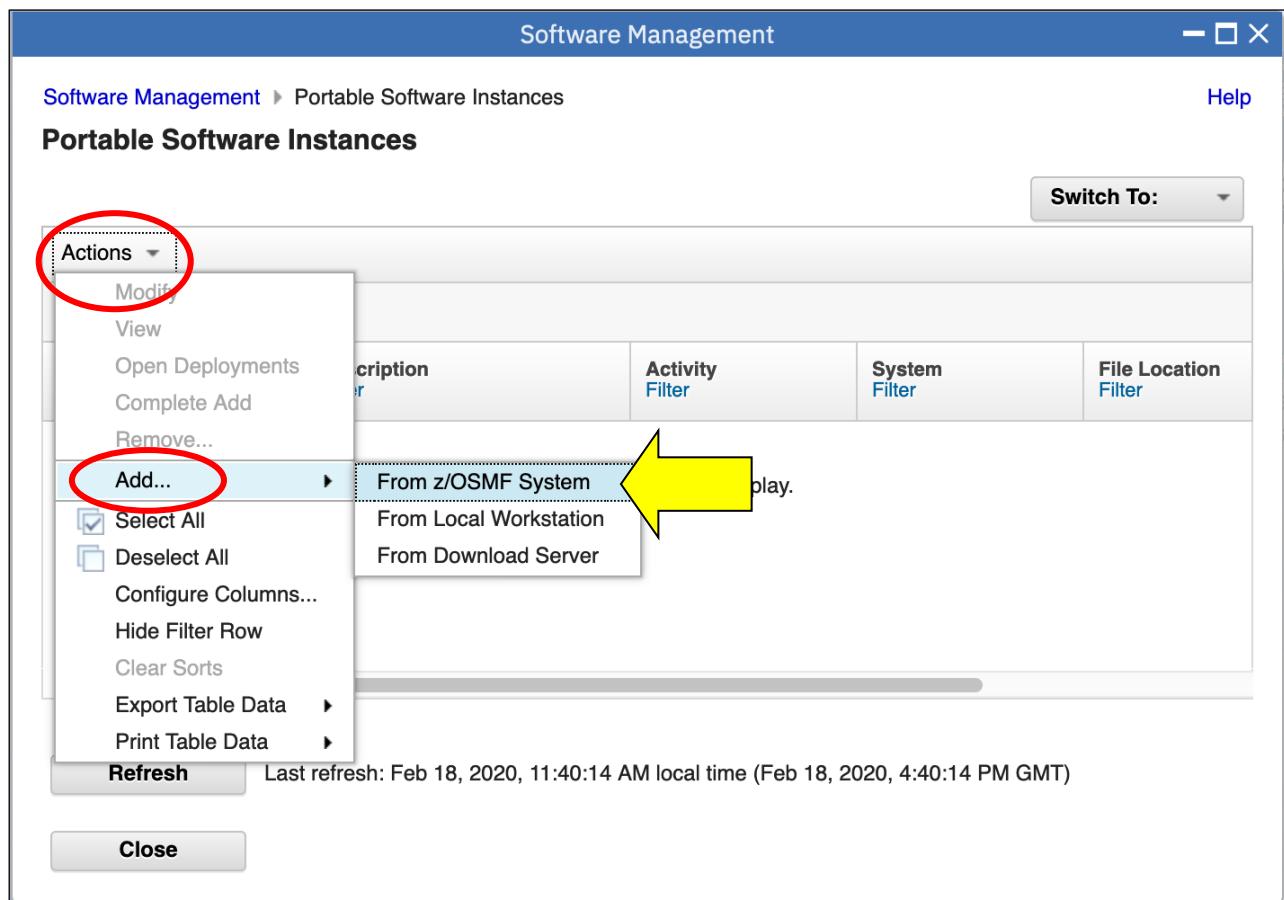
Click on “Portable Software Instances”.



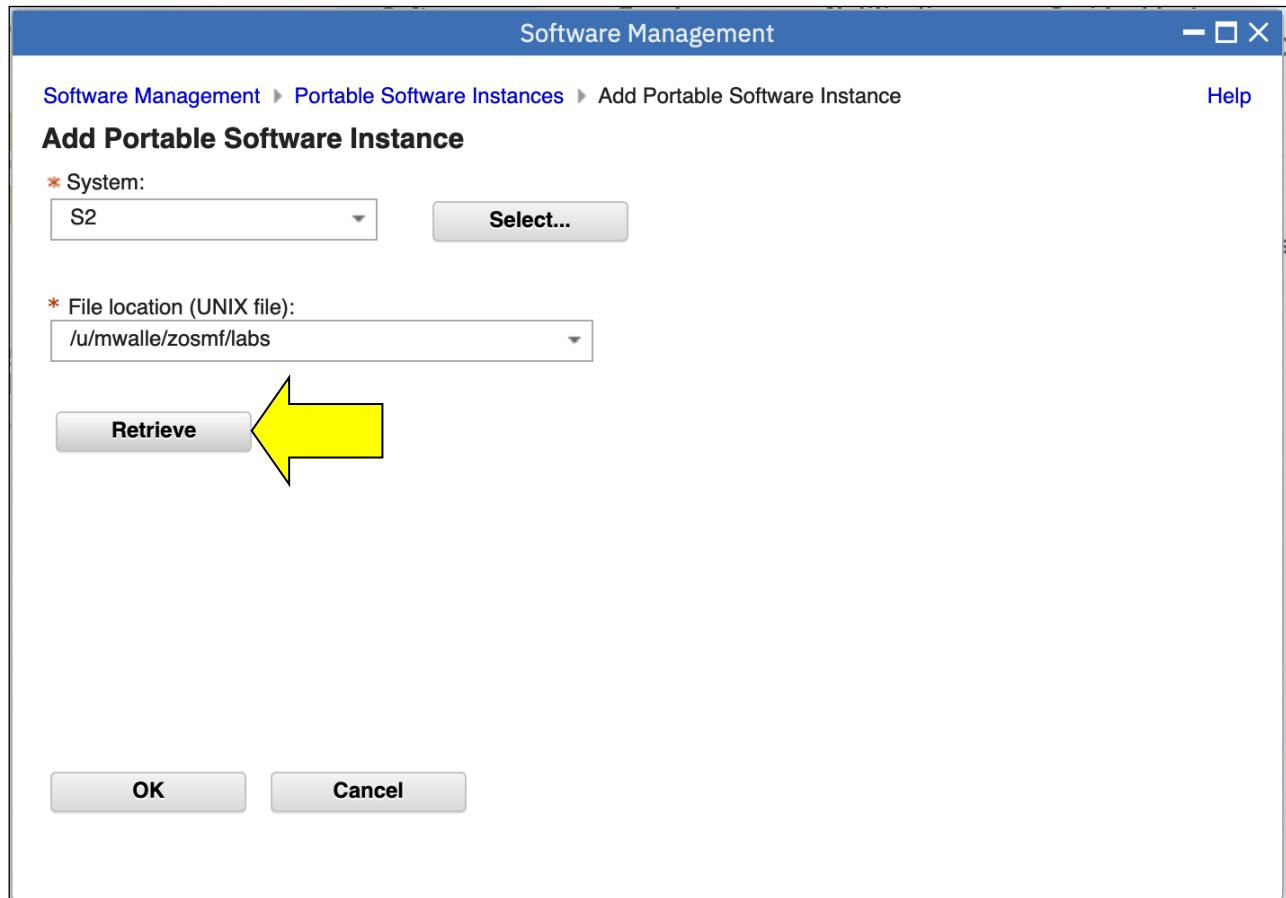
This is where all the Portable Software Instances (PSI) on this system can be found.

Now we will add a PSI(portable software instance) to the inventory for installing.

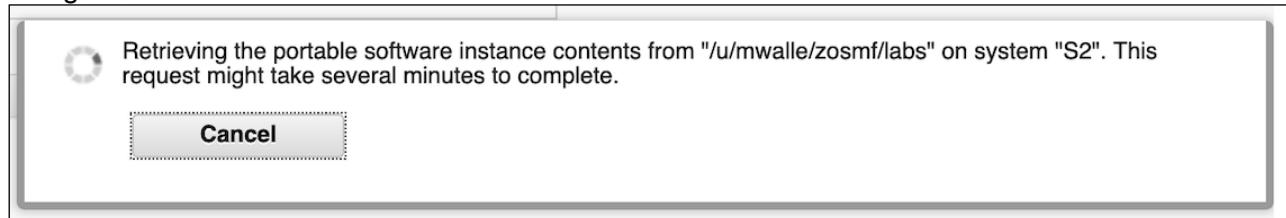
Go to **Actions -> Add -> From z/OSMF system**. You are going to add your PSI to the inventory for installing.



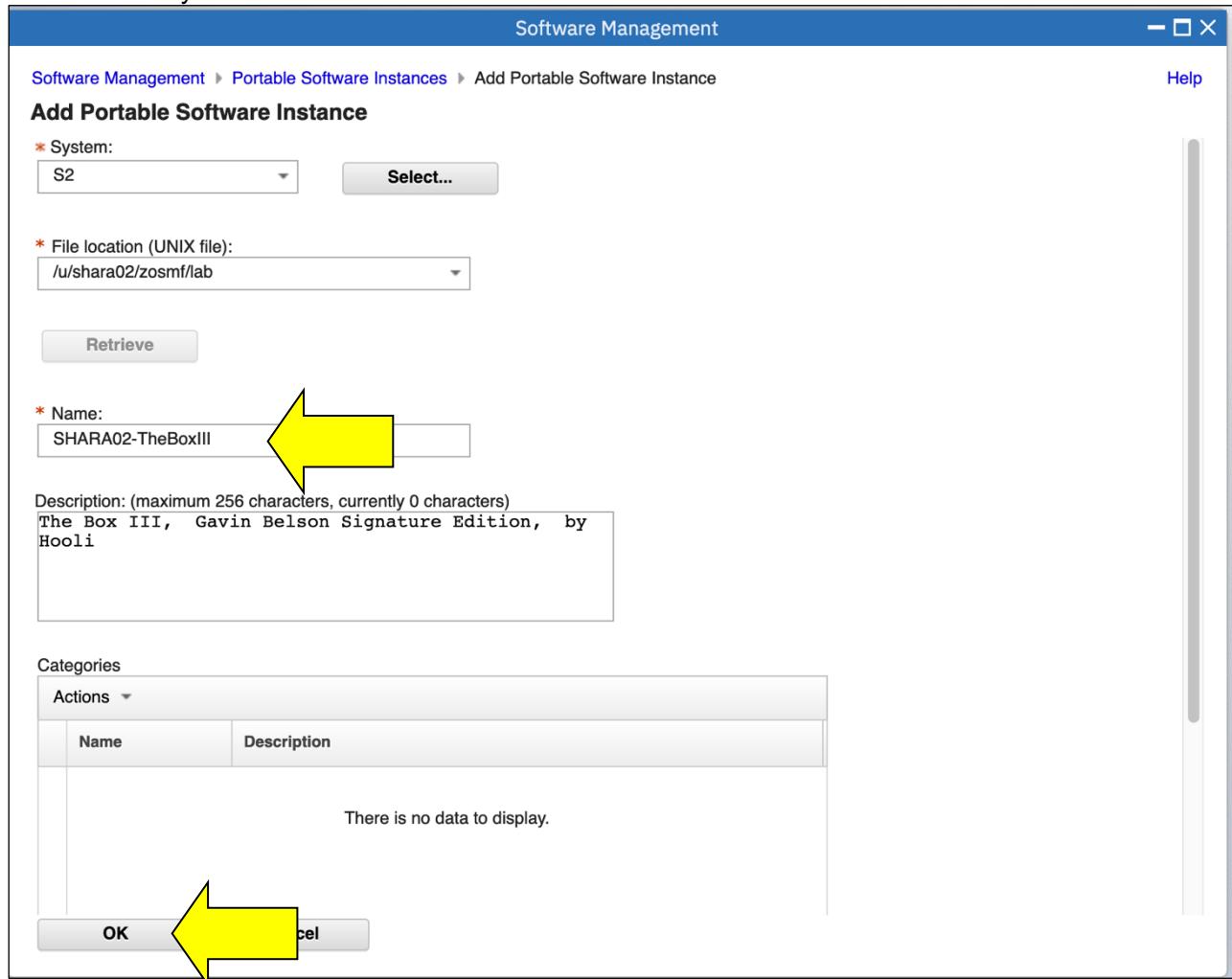
On the next screen, select the **System** as **S2** (the only choice for this sample system), and then provide the z/OS UNIX location **/u/mwalle/zosmf/labs**
Click on **Retrieve**.



It might take a moment or two:



When it has been successfully retrieved, you'll see some information (that you packaged with) in the PSI. Add your USERID to the Name. Click on **OK**.



Your PSI is ready to be installed!

The screenshot shows the 'Software Management' interface with the title 'Portable Software Instances'. A table lists one item:

Name Filter	Description Filter	Activity Filter	System Filter	File Location Filter	Category Filter
SHARA02-TheBoxIII	The Box III, Gavin Belson Signature Edition, by Hooli		S2	/u/shara02/zosmf/lab	

Let's get the install (deployment) started. On the far right, click on the **Switch To:** drop down and select **Deployments**.

The screenshot shows the same 'Software Management' interface, but the 'Switch To:' dropdown menu is open, revealing options: 'Software Instances', 'Portable Software Instances', 'Products', and 'Deployments'. The 'Deployments' option is highlighted with a blue selection bar and a yellow arrow points to it.

You are now in the Deployment section. You will take the PSI and copy it onto your system. This Deployment function is rather old in z/OSMF, so you might be familiar with it already. From the **Actions** drop-down, select **New**.

Software Management

Software Management > Deployments

Help

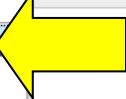
Deployments

To deploy software, create a new deployment by selecting **New** or **Copy** from the Actions menu.

Switch To: ▾

Actions	Description	Activity Filter	Categories Filter	Source Software Filter	Source System Filter
<ul style="list-style-type: none">ModifyViewCopy...Cancel...Remove...New...<input checked="" type="checkbox"/> Select All<input type="checkbox"/> Deselect AllConfigure Columns...Hide Filter RowClear SortsExport Table Data ▾Print Table Data ▾					

There is no data to display.



You have the mini-wizard for deploying (installing) the software instance. Select the first option, **Specify the properties for this deployment.**

Software Management

Software Management > Deployments > Deployment Checklist

Help

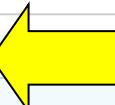
Deployment Checklist

To deploy software, complete the checklist.

Checklist

Progress	Step
⊕	Specify the properties for this deployment. Select the software to deploy.
	Select the objective for this deployment.
	Configure this deployment.
	Define the job settings. z/OSMF creates the deployment summary and jobs. <ul style="list-style-type: none">• View the deployment summary.
	Submit deployment jobs.
	Specify the properties for the target software instance.

Close



Fill in what you want to call the deployment. You have to pick a name that is unique since you can't have duplication deployment names. Perhaps put your assigned userid in the deployment name to make it unique. Click **OK**.

Software Management

Software Management > Deployments > Deployment Checklist > Specify Deployment Properties

Help

Specify Deployment Properties

Enter a name and optional description for this deployment.

* Name: SHARA02TheBoxIII

Description: (maximum 256 characters, currently 40 characters)
The installation of The Box III by Hooli

Categories

Name Filter	Description Filter	Activity Filter	Last Modified (Local) Filter	Modified By Filter	Locked (Loc Filter)
There is no data to display.					

Total: 0 Selected: 0

Refresh Last refresh: Feb 18, 2020, 1:11:37 PM local time (Feb 18, 2020, 6:11:37 PM GMT)

OK

Then progressing through the mini-wizard, select the next step: **Select the software to deploy.**

Software Management

Software Management > Deployments > Deployment Checklist

Deployment Checklist

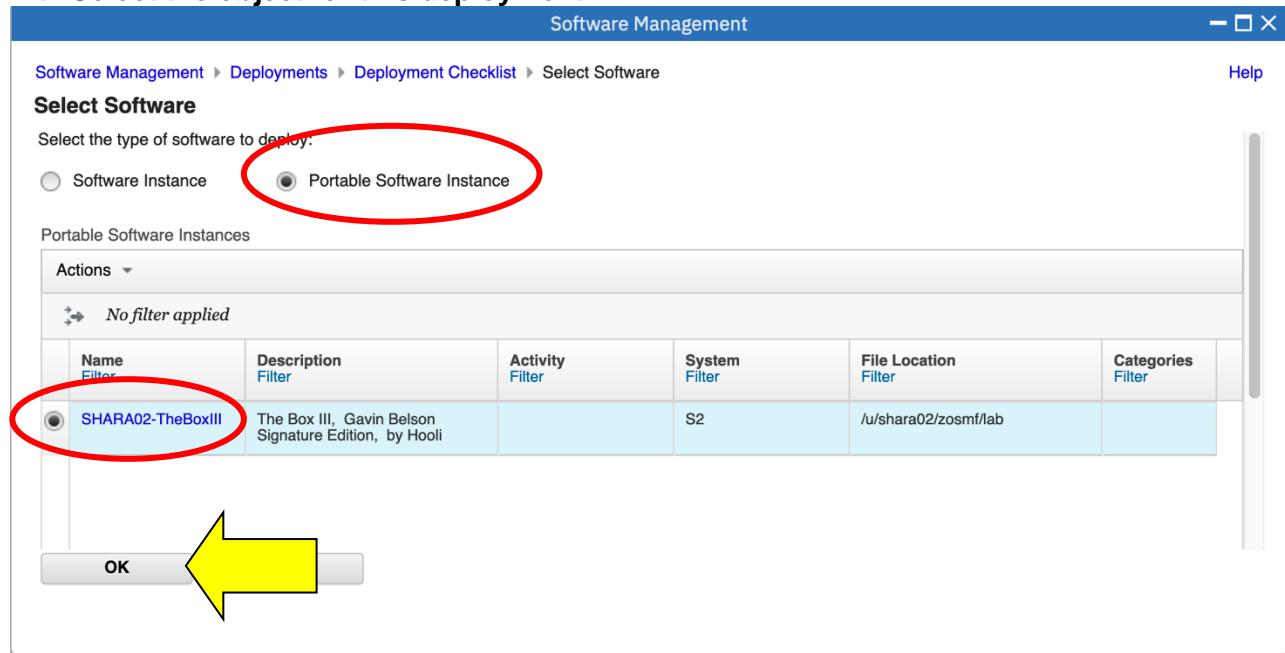
To deploy software, complete the checklist.

Checklist

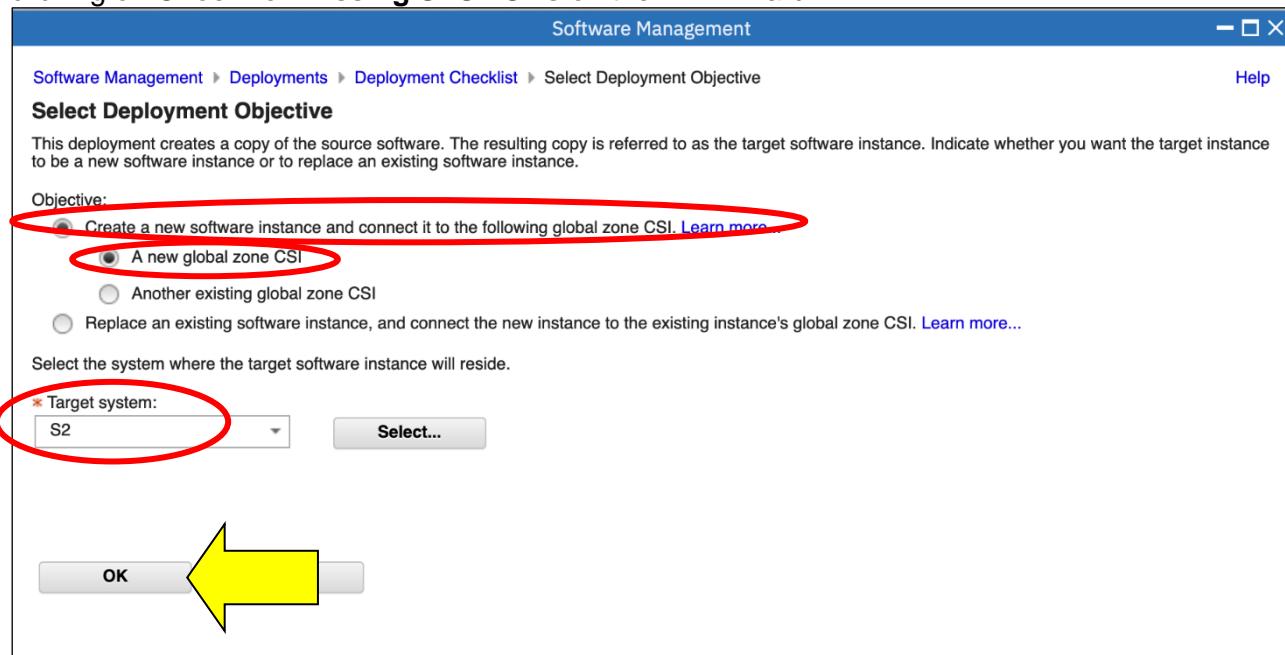
Progress	Step
<input checked="" type="radio"/>	Specify the properties for this deployment
<input type="radio"/>	Select the software to deploy.
	Select the objective for this deployment.
	Configure this deployment.
	Define the job settings. z/OSMF creates the deployment summary and jobs. <ul style="list-style-type: none"> View the deployment summary.
	Submit deployment jobs.
	Specify the properties for the target software instance.

Close

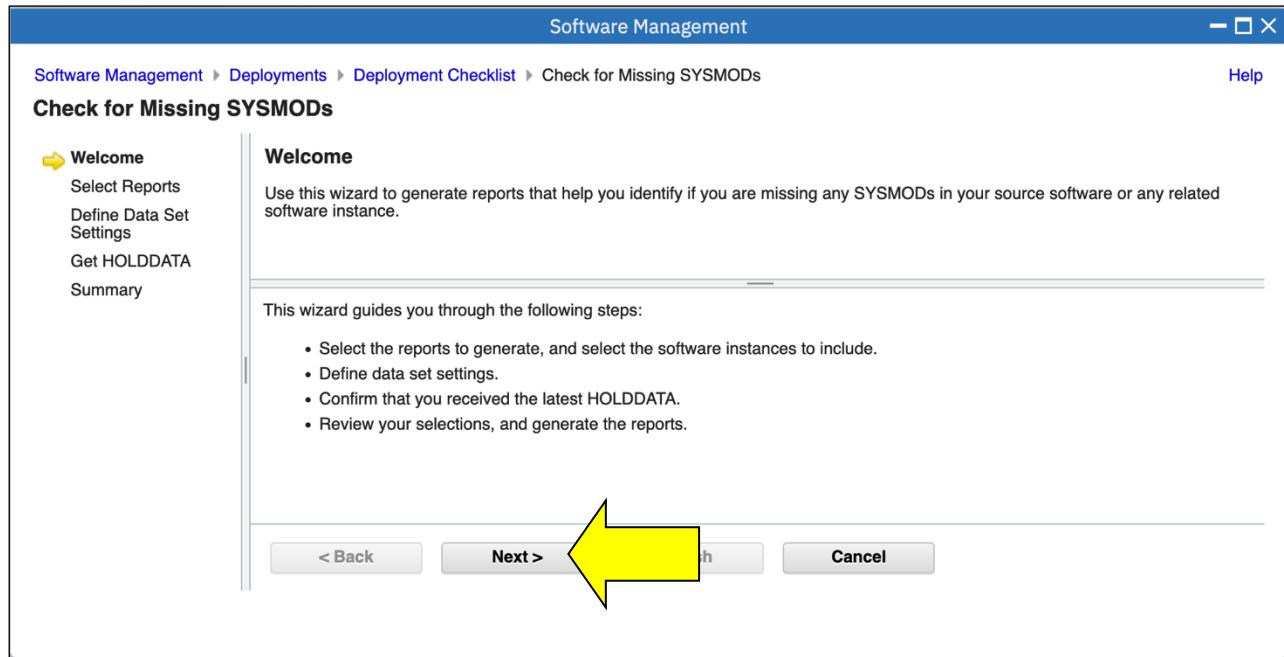
You want to select the **Portable Software Instance** you just received (the name you used when you added the Portable Software Instance above!). Then Select **OK** to continue. Then proceed with **Select the object for this deployment.**



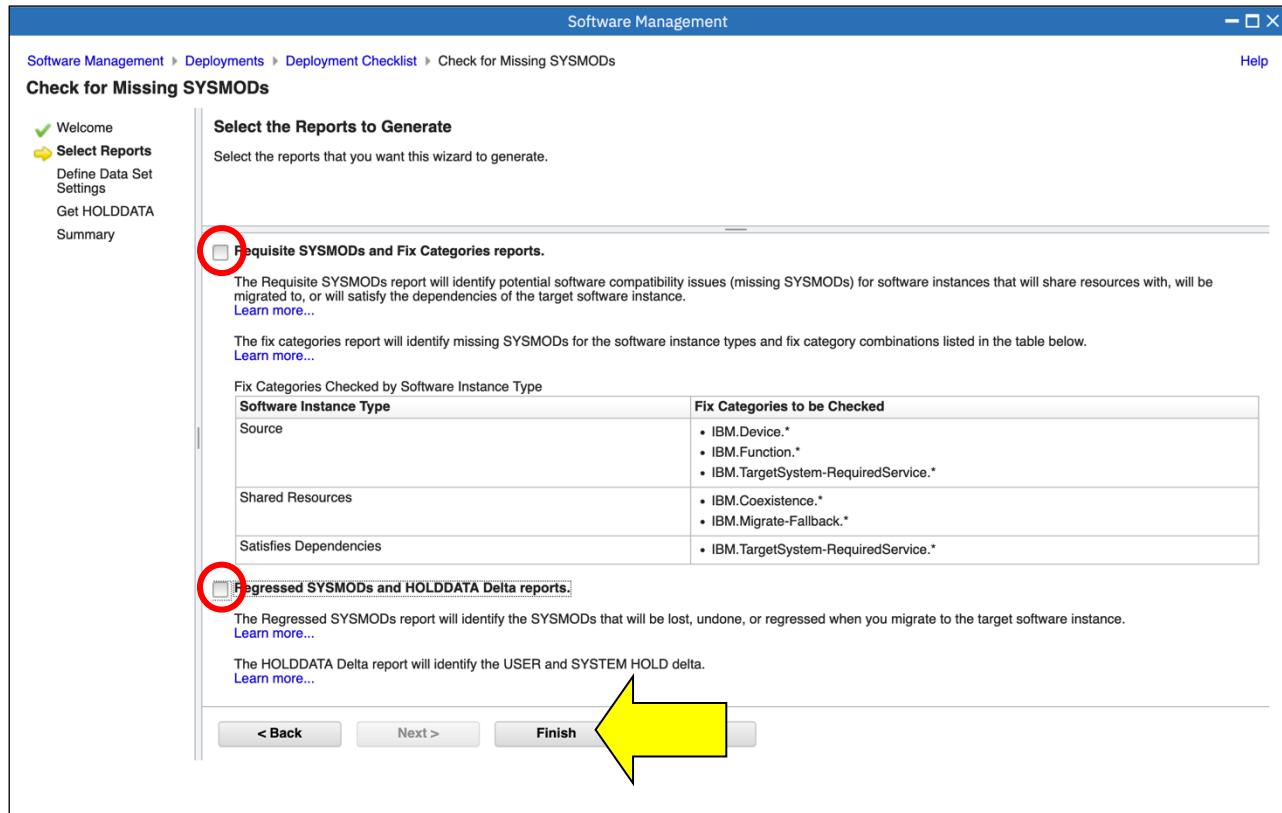
You are a customer, and you need to install this PSI. Select that you want to **Create a new software instance**, with **A new global zone CSI**, on your **S2** system. Then **OK**. Continue on by clicking on **Check for missing SYSMODs** on the mini-wizard.



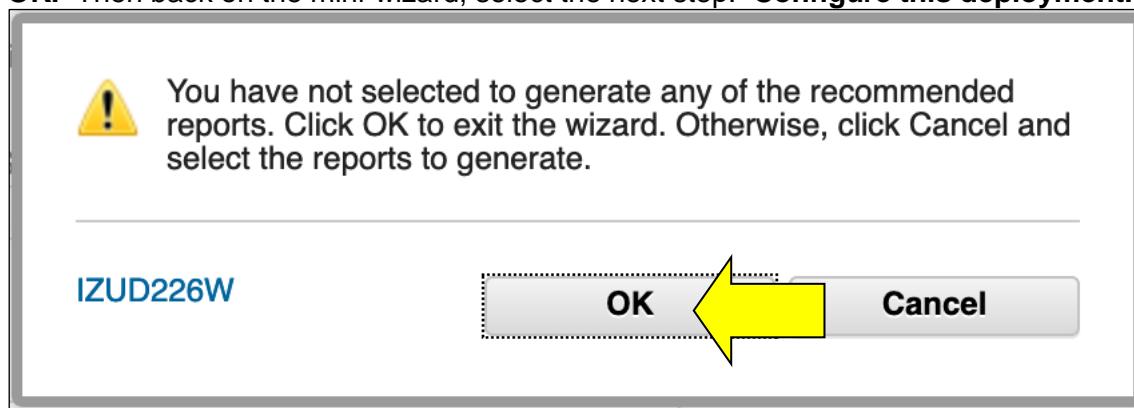
We are going to move through this older function very quickly, since it is not unique for PSI installations. Do note, however, what you are doing at each step during the deployment. Click on **Next**.



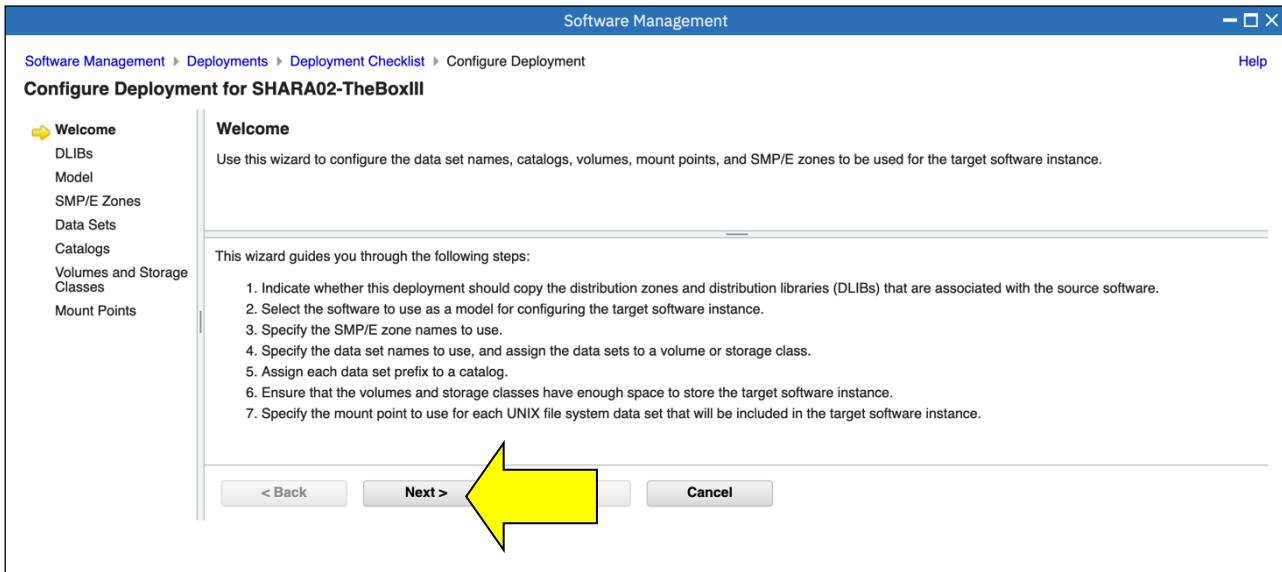
This is where you can run various SMP/E reports to see if any dependencies are missing or regressions would happen between this software instance and other software instances you already have. We are going to skip this portion, so uncheck the two boxes, and click on **Finish**.



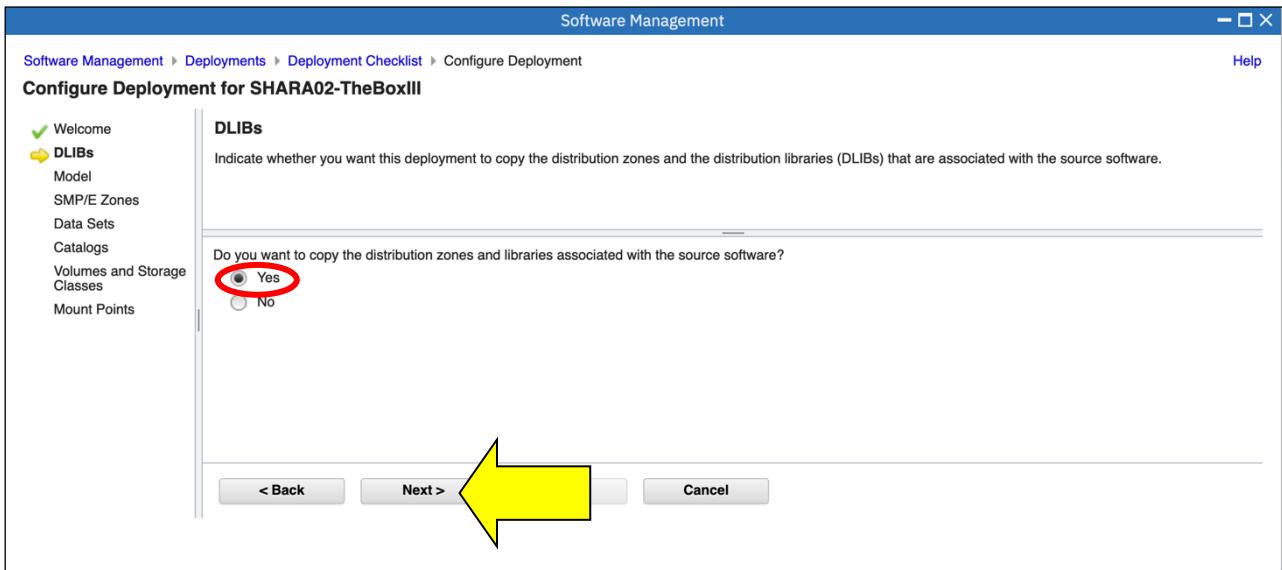
We understand that it is not recommended to skip the dependency and regression reports, so click **OK**. Then back on the mini-wizard, select the next step: **Configure this deployment**.



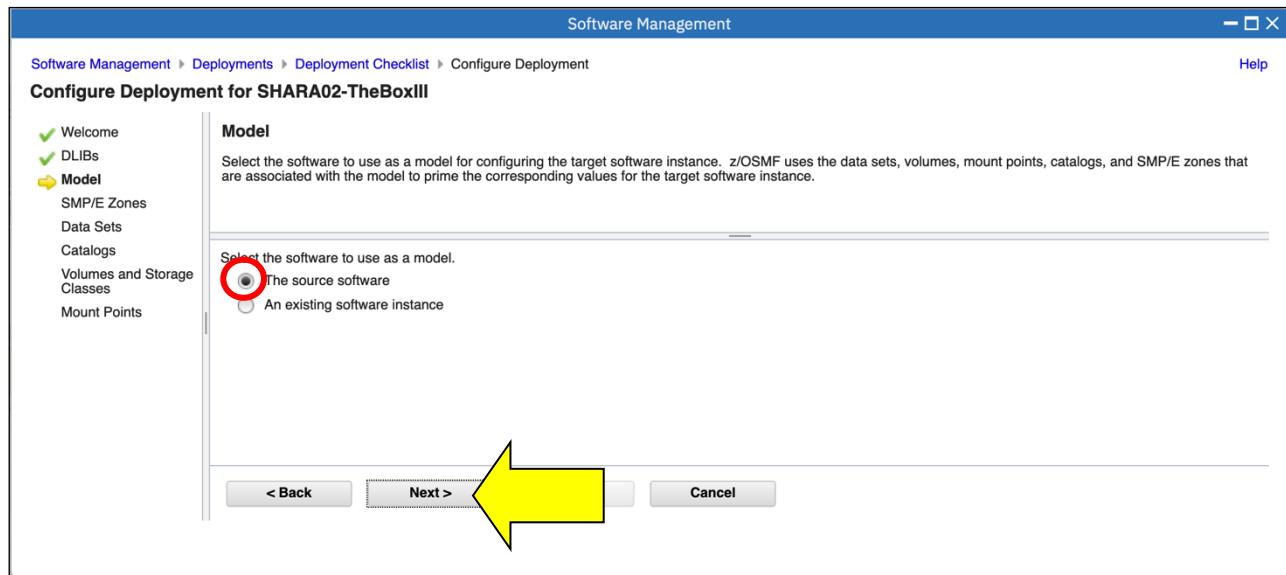
This is where you can do a lot of customization for how you want this PSI installed! After reading through all the items that we are going to (briefly) go through, click **Next>**.



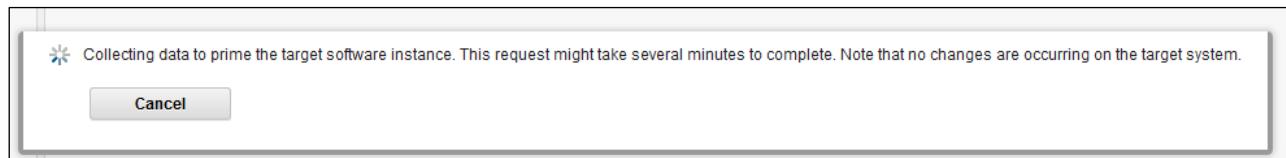
Select **Yes** because we want to take the DLIBs associated with the source software. Then **Next>**.



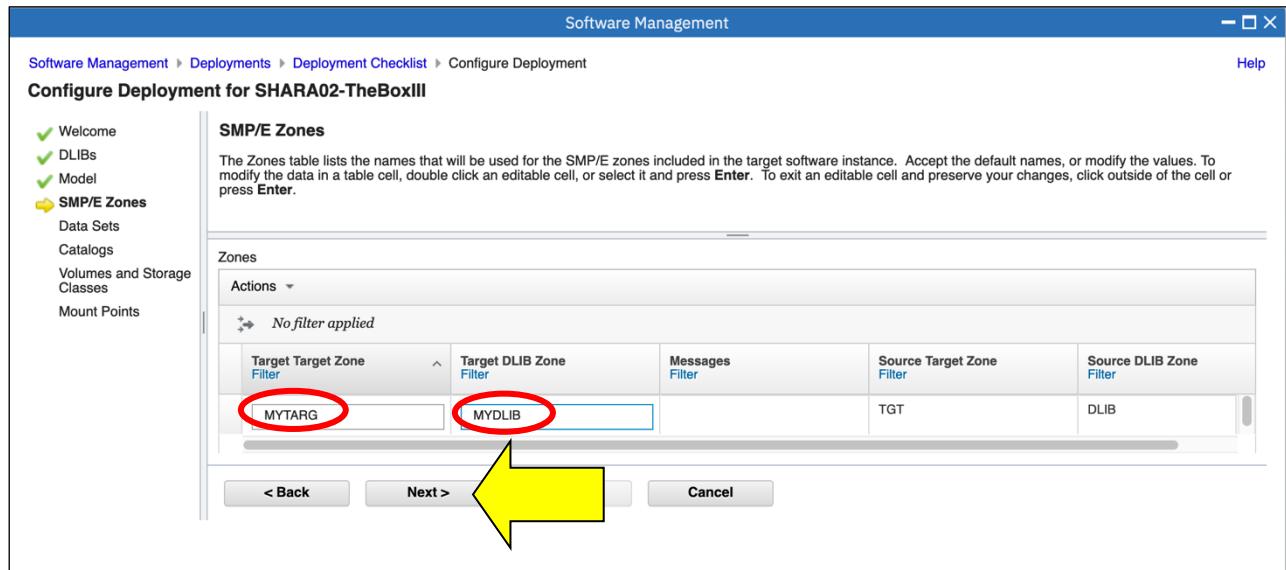
Assuming that this is the first time we've ever installed this product, we are going to model this deployment on what was sent to us. Select **The source software**, then click **Next>**.



Wait just a bit:



To show how easy it is to decide your own target and dlib zones names, enter something new here. Then click **Next>**.



This is where you could spend a lot of time customizing the names and placements of data sets in your environment. Notice something interesting here: this PSI contains both SMP/E and non-SMP/E data sets, proving that the PSI doesn't care what it contains, and can handle both SMP/E and non-SMP/E data sets just fine. Of course, it doesn't even need to contain any SMP/E installed products if the ISV didn't want to package their product with SMP/E.

Data Sets

The Data Sets table lists the names, volumes, and storage classes that will be used for the data sets included in the target software instance. Accept the default names, volumes, and storage classes, or use the **Modify** action to modify them.

Target Data Set Name	Target Volume	Target Storage Class	Data Set Category	Messages	Source Data Set Name
IBMSUSR6.HOOLI.SHOOLMOD	VSMPD1		Target		IBMSUSR6.HOOLI.SHO
IBMSUSR6.HOOLI.SMPLOG	VSMPD1		SMP/E, Global, Dlib, Target		IBMSUSR6.HOOLI.SMP
IBMSUSR6.HOOLI.SMPPTS	VSMPD1		SMP/E, Global, Dlib, Target		IBMSUSR6.HOOLI.SMP
IBMSUSR6.HOOLI.SMPSCDS	VSMPD1		SMP/E, Target		IBMSUSR6.HOOLI.SMP
IBMSUSR6.HOOLI.WORKFLOW	VSMPD1		Workflow		IBMSUSR6.HOOLI.WOF
IBMSUSR6.HOOLI.ZFS	VSMPD1		Target		IBMSUSR6.HOOLI.ZFS

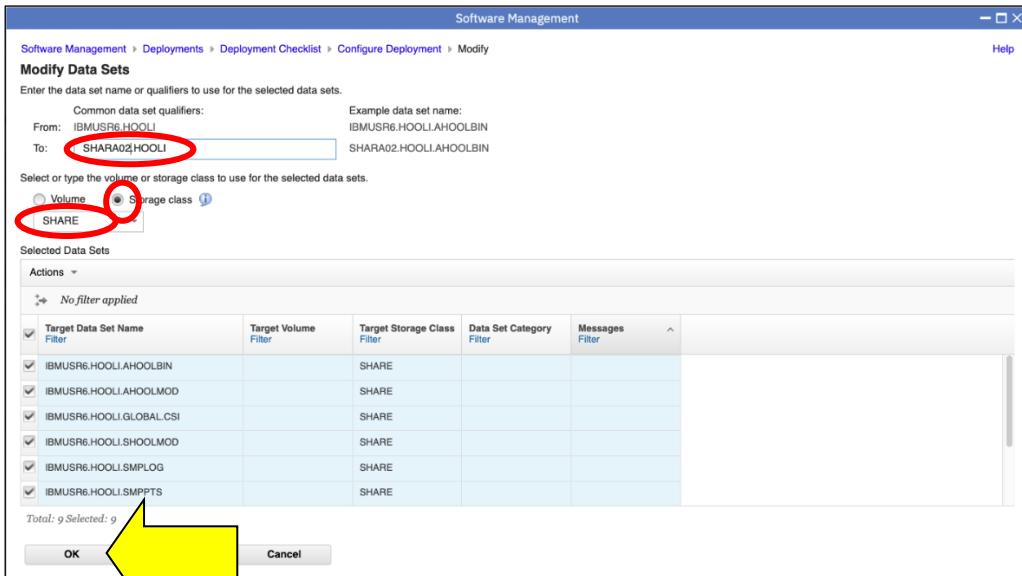
Total: 9 Selected: 0

< Back Next > Finish Cancel

You will need to change the Target Volume for all the datasets listed. Click on the upper left checkbox to select all the data sets, then Click **Action -> Modify**.

The screenshot shows the 'Configure Deployment for SHARA02-TheBoxIII' screen in the Software Management application. On the left, a navigation tree includes 'Welcome', 'DLIBs', 'Model', 'SMP/E Zones', 'Data Sets' (which is expanded), 'Catalogs', 'Volumes and Storage Classes', and 'Mount Points'. The main area is titled 'Data Sets' with a sub-instruction: 'The Data Sets table lists the names, volumes, and storage classes that will be used for the data sets included in the target software instance. Accept the default names, volumes, and storage classes, or use the **Modify** action to modify them.' Below this is a table with columns: Actions, Target Volume Filter, Target Storage Class Filter, Data Set Category Filter, Messages Filter, and Source Data Set N Filter. The 'Actions' column contains a dropdown menu with options: 'Select All' (checked), 'Deselect All', 'Configure Columns...', 'Hide Filter Row', 'Clear Sorts', 'Export Table Data', and 'Print Table Data'. A yellow arrow points to the 'Modify' option in this menu. The table lists nine datasets, all of which have the 'Select All' checkbox checked. The datasets are: IBMUSR6.HOOLI.SHOOLMOD, IBMUSR6.HOOLI.SMPLOG, IBMUSR6.HOOLI.SMPPTS, IBMUSR6.HOOLI.SMPSCDS, and IBMUSR6.HOOLI.WORKFLOW. Each dataset has 'VSMPD1' listed under 'Target Volume Filter' and 'Dlib' listed under 'Target Storage Class Filter'. The 'Data Set Category Filter' column shows 'Target' for the first dataset and 'SMP/E, Global, Dlib, Target' for the others. The 'Messages Filter' and 'Source Data Set N Filter' columns show 'IBMUSR6.HOOLI.' for all datasets. At the bottom of the table, it says 'Total: 9 Selected: 9'. Below the table are buttons for '< Back', 'Next >', 'Finish', and 'Cancel'.

Change the **To:** from IBMUSR6.HOOLI to <YourID>.HOOLI, select **Storage class** and enter **SHARE** for the type, then click **OK**.



If you wanted to investigate more functions like renaming or moving data sets, select the data set(s) and then do **Actions->Modify**. To move through this education module quickly, though, we won't show that. It is pretty intuitive once you select the data set. Spend time on this option if you like. Click on **Next>** when you are done.

	Target Volume Filter	Target Storage Class Filter	Data Set Category Filter	Messages Filter	Source Data Set Name Filter
VSMPD1			Target		IBMSUR6.HOOLI.SHM
VSMPD1			SMP/E, Global, Dlib, Target		IBMSUR6.HOOLI.SMF
IBMSUR6.HOOLI.SMPPTS	VSMPD1		SMP/E, Global, Dlib, Target		IBMSUR6.HOOLI.SMF

Here is where you would ensure the cataloging is as desired. If you want to investigate, just select the name, and then **Actions ->** and what you'd like to do. Click **Next>** to continue.

The screenshot shows the 'Software Management' interface for 'Deployment Checklist' under 'Configure Deployment'. The left sidebar has a checklist with items like 'Welcome', 'DLIBs', 'Model', 'SMP/E Zones', 'Data Sets', and 'Catalogs' (which is expanded). The main area shows a table titled 'Target Data Set Name Prefixes' with one row. The 'Actions' dropdown menu is open, circled in red, and a yellow arrow points from the 'Next >' button at the bottom left towards it.

Action	Catalog the Data Sets?	Catalog Name Filter	Catalog Type Filter	Messages Filter
Yes (Required)	CATALOG.SHMASTER.CAT	MASTER		

Next up is Volumes and Storage Classes. Since we updated this in the **Data Sets** step, this product will use Storage Classes. You could change volumes or Storage Classes here if you wanted. Keep going. Click **Next>**.

Software Management > Deployments > Deployment Checklist > Configure Deployment

Configure Deployment for SHARA02-TheBoxIII

Help

Volumes and Storage Classes

The Target Volumes and Target Storage Classes tables list the volumes or storage classes where each target data set or new user catalog will reside. Accept the default volumes and storage classes, or use the **Modify** action to modify them.

Target Volumes

Actions ▾

No filter applied

Volume Filter	Total Capacity (MB) Filter	Current Allocated Space (MB) Filter	Current Allocated Space (%) Filter	Messages Filter	Allocated Space After Deployment (MB) Filter	Allocated Space After Deployment (%) Filter	Allocated Space Delta (MB) Filter	Planned Threshold (%) Filter	Initialize Volume Filter	Catalog Method Filter	Indi Ent Filter
There is no data to display.											

Total: 0 Selected: 0

Target Storage Classes

Actions ▾

No filter applied

Storage Class Filter	Space Required (MB) Filter
SHARE	1.36

Refresh Last refresh: Feb 18, 2020, 3:30:46 PM local time (Feb 18, 2020, 8:30:46 PM GMT)

< Back Next > Cancel

We are now at the last configurable change to do for the deployment: **Mount Points**. Select the mount point listed, click **Actions -> Modify Target Mount Point**.

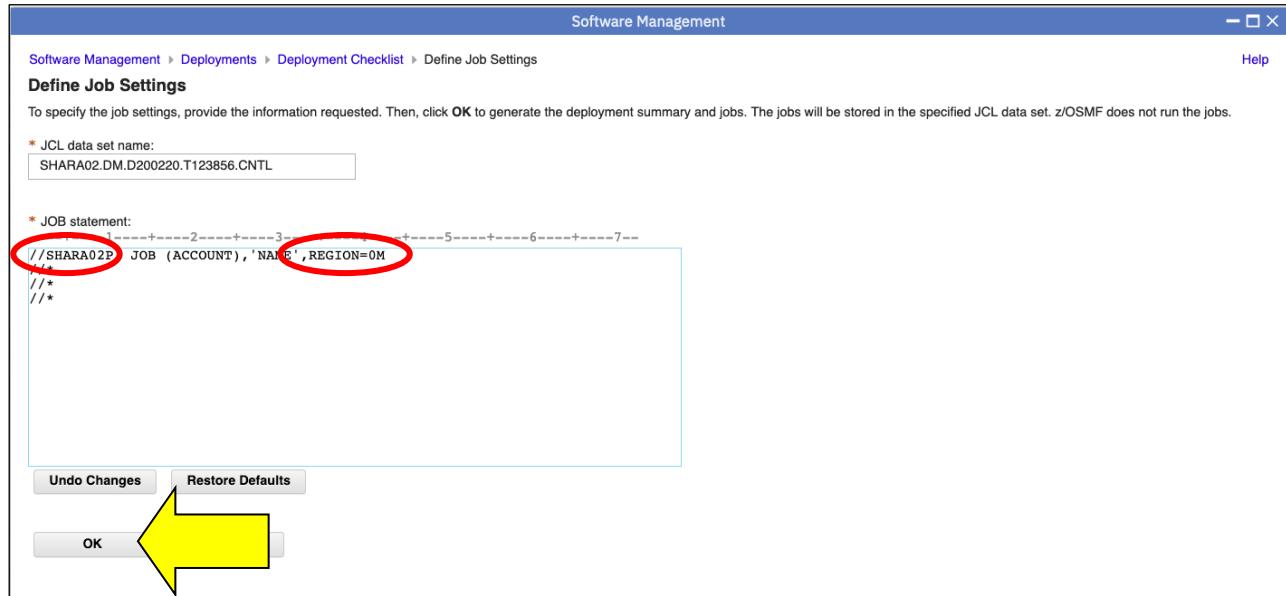
The screenshot shows the 'Software Management' interface with the path: Software Management > Deployments > Deployment Checklist > Configure Deployment. The main title is 'Configure Deployment for SHARA02-TheBoxIII'. On the left, there is a navigation tree with items like Welcome, DLIBs, Model, SMP/E Zones, Data Sets, Catalogs, Volumes and Storage Classes, and Mount Points. The 'Mount Points' item is selected. The main content area is titled 'Mount Points' and contains a table with one row. The table has columns for 'Target Data Set Name', 'Source mount point', and 'Source Data Set Name'. The data is: IBMUSR6.HOOLI.ZFS, /u/ibmusr6/hooli, IBMUSR6.HOOLI.ZFS. Below the table, there is a 'Actions' dropdown menu with options like 'Select All', 'Deselect All', 'Configure Columns...', 'Hide Filter Row', 'Clear Sorts', 'Export Table Data', and 'Print Table Data'. A yellow arrow points to the 'Modify Target Mount Point' option in this menu. At the bottom, there are buttons for '< Back', 'Next >', 'Finish', and 'Cancel'.

Change the To: to /u/<yourid>/hooli, and click **OK**. Then on the next screen click **Finish**.

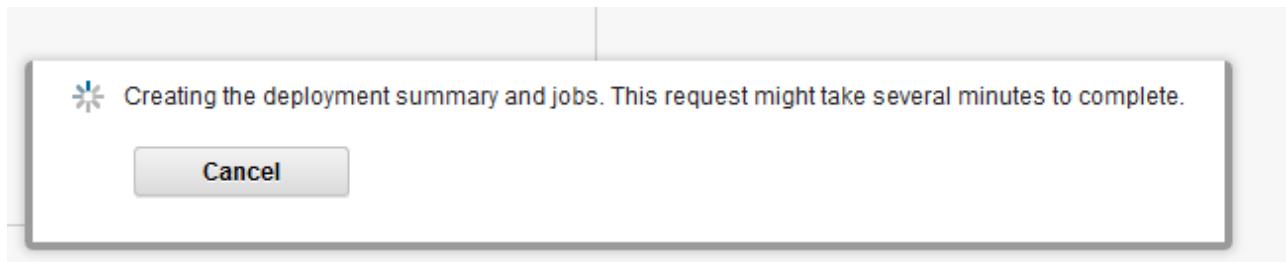
The screenshot shows the 'Software Management' interface with the path: Software Management > Deployments > Deployment Checklist > Configure Deployment > Modify Mount Point. The title is 'Modify Target Mount Point'. It asks to enter a new target mount point for the selected mount points. There are fields for 'From:' (set to /u/ibmusr6/hooli) and 'To:' (set to /u/shara02/hooli). Below these, a table shows 'Selected mount points' with one row: Target mount point /u/ibmusr6/hooli, Target Data Set Name IBMUSR6.HOOLI.ZFS, Source mount point /u/ibmusr6/hooli, and Source Data Set Name IBMUSR6.HOOLI.ZFS. A yellow arrow points to the 'OK' button at the bottom left of the dialog. At the bottom right, there is a 'Help' link.

Back on the Deployment Checklist, we are moving right along. Click on **Define the job settings.** z/OSMF creates the deployment summary and jobs.

The deployment process we just went through will create a series of jobs to run. You can indicate where you want the jobs stored, and the JOB statement to use. For now, update the **JOBNAME** and also add **REGION=0M** then click on **OK**.



Jobs are created:



Back on the Deployment Checklist, click on **Submit deployment jobs**.

In the deployment window, select the first job, and click **Actions -> Submit Job**. You can read the description of what each of the jobs will do.

The screenshot shows the 'Software Management' interface with the title 'Submit Deployment Jobs'. The 'Actions' dropdown menu is open, and the 'Submit Job' option is highlighted with a yellow arrow. The main table lists three deployment jobs:

Job Description	System	Status	Messages	Job Name
Unzip Data Sets: Extract the target software instance data sets from the portable software instance archive files, into the location defined by the deployment configuration, using temporary and unique data set names.	S2			
Rename Data Sets: Rename the target software instance data sets from their temporary and unique names to their desired names defined by the deployment configuration, and update catalog entries for the data sets as needed.	S2			
Update CSI Data Sets: Update the entries within the SMP/E CSI data sets to reflect the target software instance zone names, data set names and locations, and UNIX directory prefixes.	S2			

Total: 3 Selected: 1

Refresh Last refresh: Feb 20, 2020, 12:56:26 PM local time (Feb 20, 2020, 5:56:26 PM GMT)

Close

Click Refresh, eventually the Status will move to complete. To see the Job output, select the job, click **Actions -> View -> Job Output**. Go ahead and submit the other 2 Jobs. Click **Close** when you have completed all three jobs.

The screenshot shows the 'Software Management' interface with the title 'Submit Deployment Jobs'. The URL in the address bar is 'Software Management > Deployments > Deployment Checklist > Submit Deployment Jobs'. The top right corner has a 'Help' link. Below the title, there's a 'Messages' section with 0 errors, 0 warnings, and 1 info message. A blue box displays the info message: 'Job "SHARA02P" (JOB14763) has been submitted.' On the right, there are 'Close All' and 'Close' buttons. Below the messages, a note says: 'Review the jobs created for this deployment, and submit the jobs in sequential order. When all the jobs are complete, click Close to proceed to the next step in the deployment checklist.' Underneath, it shows 'JCL data set name: SHARA02.DM.D200220.T123856.CNTL' and 'Target system: S2'. A table titled 'Jobs' lists two entries:

	Action	System	Status	Messages	Job Name
	View Submit Job Purge... Cancel... Override Complete <input checked="" type="checkbox"/> Select All <input type="checkbox"/> Deselect All Configure Columns... Hide Filter Row Clear Sorts Export Table Data Print Table Data	S2	<input checked="" type="checkbox"/> Complete		SHARA02P
	Unzip Data Sets: Extract the target software instance data sets from the portable software instance archive files, into the location defined by the deployment configuration, using temporary and unique data set names.	S2			Rename Data Sets: Rename the target software instance data sets from their temporary and unique names to their desired names defined by the deployment configuration, and update catalog entries for the data sets as needed.

At the bottom left are 'Refresh' and 'Close' buttons. The status bar at the bottom says 'Last refresh: Feb 20, 2020, 12:59:24 PM local time (Feb 20, 2020, 5:59:24 PM GMT)'.

Back on the Deployment Checklist, click on **Perform workflows**.

In the Perform Workflow window, you will see there are 3 workflows. Select the first workflow, About your order, and click **Actions -> Open**

The screenshot shows the 'Perform Workflows' window with three workflow entries:

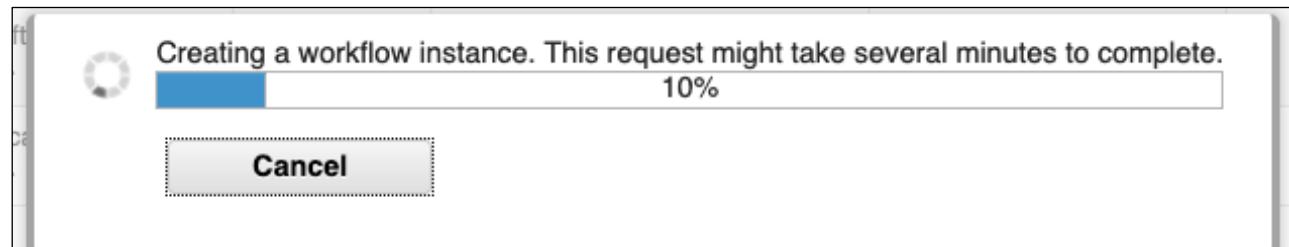
Actions	Description	Messages	Status	Percent Complete	Owner
<input checked="" type="checkbox"/> Open	Information about your ServerPac order.			0%	
<input type="checkbox"/> Deselect All	Configure the software in your ServerPac order.			0%	
<input type="checkbox"/> Configure Columns...	Installation verification for your ServerPac order.			0%	

Total: 3 Selected: 1

Refresh Last refresh: Feb 20, 2020, 1:06:32 PM local time (Feb 20, 2020, 6:06:32 PM GMT)

Close

This action will create the workflow “About your order”. Once created, it will bring you into that workflow.



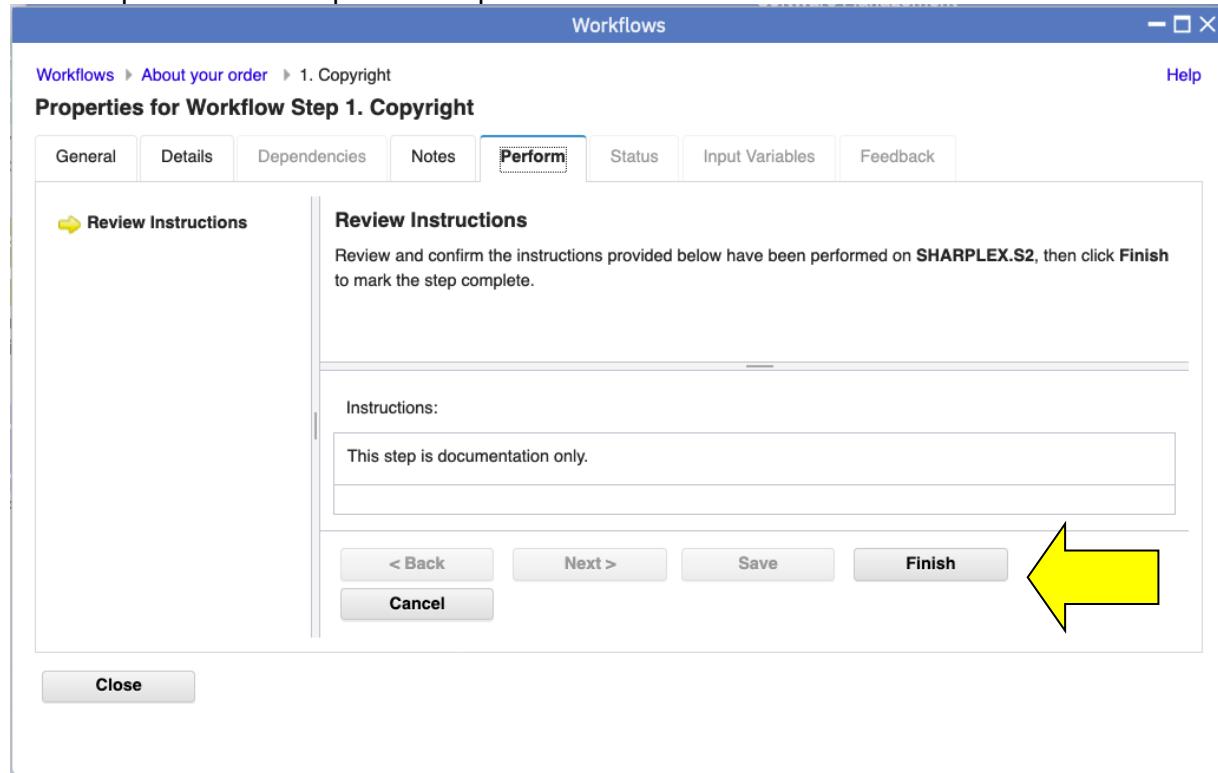
In the Workflow, **About your order**, You will see two steps, **Copyright** (a Leaf Step) and **About Your Order** (A Parent Step), and if you click on the + next to **About Your Order**, you will see several additional leaf steps.

To perform the step, select the step, then click on the title, (example click on **Copyright**)

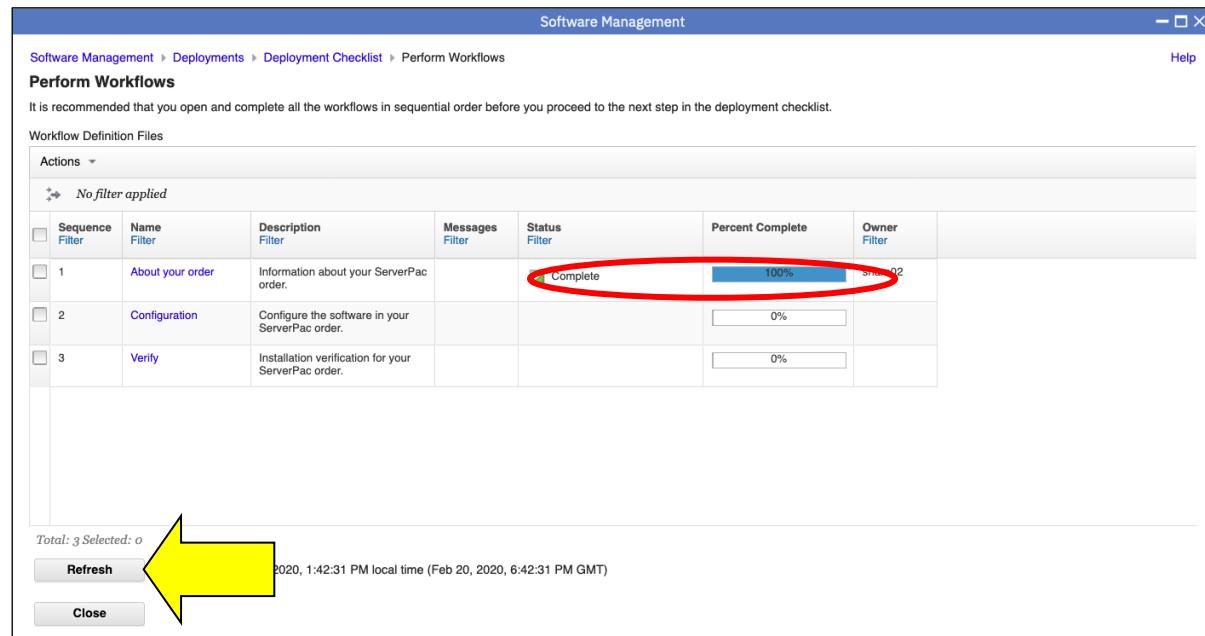
The screenshot shows the 'Workflows' application interface. The main title bar says 'Workflows'. Below it, the path 'Workflows > About your order' is shown. On the right, there are 'Notes' and 'History' links. The main content area is titled 'About your order'. It displays various workflow properties: Description (Information about your ServerPac Order: OT00123), Owner (shara02), System (SHARPLEX.S2), Is Callable (Cannot be called by another workflow), and Contains Parallel Steps (No). Below this, a section titled 'Workflow Steps' lists eight items. The first item, 'Copyright', has a yellow arrow pointing to it from the left. The second item, 'About Your Order', has a red circle around its title. The other six items are: Ready (No. Filter 1), In Progress (No. Filter 2), Ready (No. Filter 2.1), Ready (No. Filter 2.2), About your ServerPac, Order Information, and Order Information. At the bottom, there are buttons for 'Return to Workflows' and 'Refresh', and a note that the last refresh was on Feb 20, 2020, at 1:38:21 PM local time (Feb 20, 2020, 6:38:21 PM GMT).

Action	State Filter	No. Filter	Title Filter	CalledWorkflow Filter	Automated Filter	Owner Filter
<input checked="" type="checkbox"/>	Ready	1	Copyright		No	shara02
<input type="checkbox"/>	In Progress	2	About Your Order			
<input type="checkbox"/>	Ready	2.1	About your ServerPac		No	shara02
<input type="checkbox"/>	Ready	2.2	Order Information		No	shara02
Total: 8 Selected: 1						

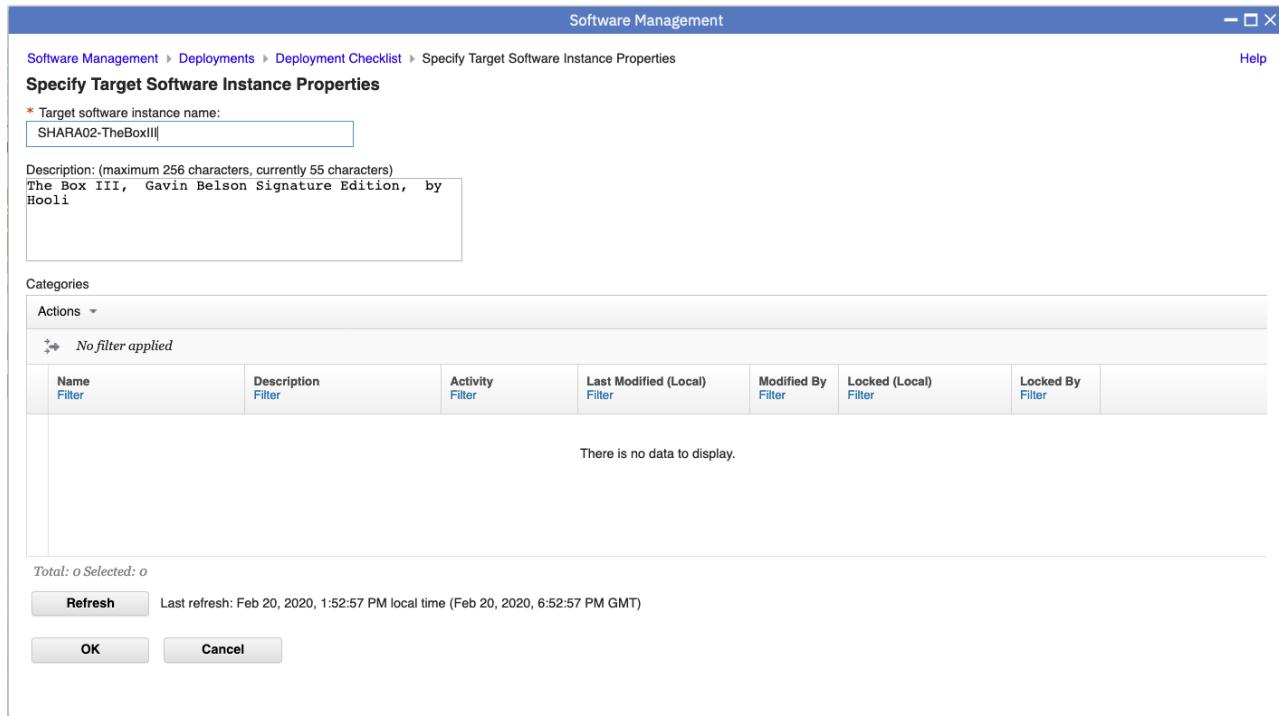
The **Copyright** is informational only, go ahead and click on the different tabs. When you get to **Perform**, click on **Finish**. The rest of the steps in this workflow are also informational. Complete each step until all the steps are complete.



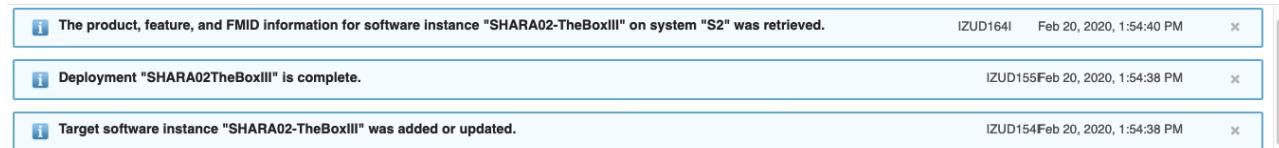
Go back to **Software Management**, **Perform Workflow** and click **Refresh**, You will see that the About your order step will be marked Complete. Complete all three workflows. (Note: Some steps will have JCL jobs to run) and click **Close**.



Back on the Deployment Checklist, click on **Specify the properties for the target software instance**. Click **OK**.



Congratulations!! You have just deployed a Portable Software Instance. You should will now get 3 messages. You can **Close** out of this window.



Clean up

After you've done all the poking around that you like on this deployment, it would be nice of you to delete your deployment you just made to keep unnecessary deployments cleaned off the system. Click on your own deployment, then Actions -> Remove. (Make sure to check to delete the workflow instances associated with the selected deployment)

From the Software Management window, go back to the Portable Software Instances, select your PSI and click Actions -> Remove.

Thank you for being a good user on our system!

What about using z/OSMF to help with the customization at this point?

Indeed! We would like, once the deployment jobs have been run and have been successful, to launch into a product-provided Workflow that accompanied the product to help with customization. That portion, however, is not ready to show in this education module at this time. However, just keep that in mind when you think about how many parts of z/OSMF can help with your overall install: not just putting the code in libraries (Software Management deployment), but beyond that with customization (z/OSMF Workflow).