z/OS installation strategy education – for installing software

Introduction:

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.

In this module, we will show how to install (as a customer would) a **z/OSMF Software Management Portable Software Instanc**e (PSI, for short) which is for a product. This product is composed of two pieces:

- The SMP/E-packaged FMID called **HMLW100.**

- A collection of data sets. It just so happens that we have a very good real-life example of a non-SMP/E packaged function: the **z/OS Cloud Data Access Beta**.

Available in a separate education module is how to package these two pieces into a product, to create a Portable Software Instance, if you wanted to play the role of a software vendor.

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 V2.2 with PTF UI44516 , or*

- *z/OSMF V2.1 with PTF UI42018*

What exactly are we deploying (installing) for this module?
This imaginary product we are deploying is two very different "elements" to show the power of this new z/OS Installation Strategy. Here's the details on what composes our sample PSI:

1. A beta product called **z/OS Cloud Data Access Beta.** This beta product contains the following six data sets which can be found on the example system:
    a. MWALLE.PSI.CDA.H
    b. MWALLE.PSI.CDA.LINK
    c. MWALLE.PSI.CDA.LPA
    d. MWALLE.PSI.CDA.PANELS
    e. MWALLE.PSI.CDA.PDSE.LOAD
    f. MWALLE.PSI.CDA.REXX
2. An imaginary SMP/E-packaged product (FMID **HMLW100**) that is already SMP/E applied and ACCEPTed into an SMP/E CSI. This is to show that you could deploy any preinstalled FMID you wanted. This preinstalled SMP/E-packaged product is composed of the following data sets:
    a. MWALLE.PSI.AMLWHFS : dlib data set associated with the product.
    b. MWALLE.PSI.CSI   : CSI data set from the install
    c. MWALLE.PSI.SMPLTS   : associated SMPLTS

        d. MWALLE.PSI.SMPMTS : associated SMPMTS
        e. MWALLE.PSI.SMPPTS : associated SMPPTS
        f. MWALLE.PSI.SMPSCDS : associated SMPSCDS
        g. MWALLE.PSI.SMPSTS : associated SMPSTS
        h. MWALLE.PSI.ZFS   : file system where the product is installed.

When you follow this module, here is a high level overview of what you will learn:

1. Logon to z/OSMF with your appropriate id and password.

2. z/OS Customer view: install a PSI provided from a software vendor using z/OSMF Software Management's deployment task.

1. Logon to z/OSMF.

In this step, we will now go into z/OSMF to use the Software Management function. For this module, we are using a z/OSMF V2.3 system.

a. Go to your appropriate z/OSMF URL for your enterprise.

b. Using the appropriate userid and the password, logon to z/OSMF.

c. Click on "Log in". (Do not click on "Use desktop interface", to match this module.)

    d. Click on "Software", to untwist the choices, then "Software Management" to launch the function.

    e. You can click on the "close" arrow head (in the red circle) below to show Software Management as the full screen.
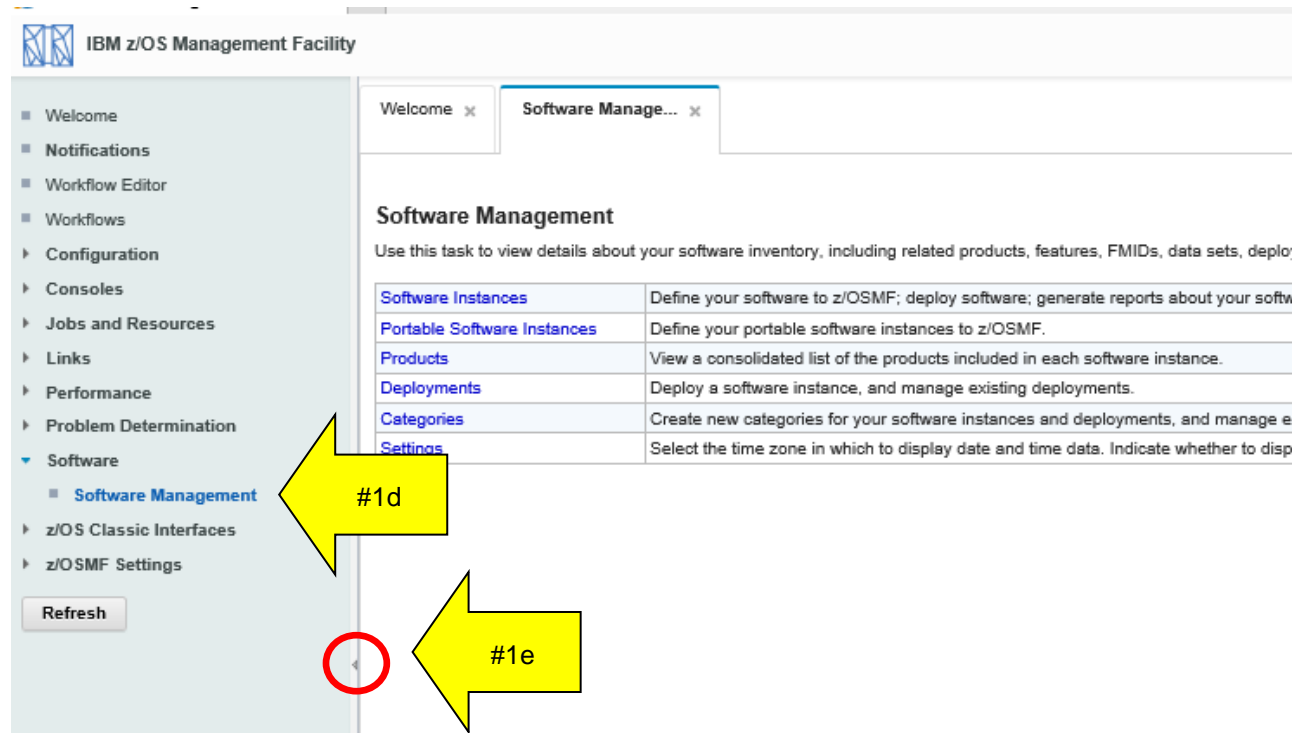
Let's assume you've bought a great new product from Kitty Corp! You've acquired the file (somehow, possibly via GIMGTPKG) following the instructions from the vendor. (It might mean that you've un-archived it into your z/OS UNIX file system if you received it as a single pax archive file). What's next? A very simple deployment with z/OSMF Software Management.

Ensure that you are on the primary Software Management screen, and select **Portable Software Instances**
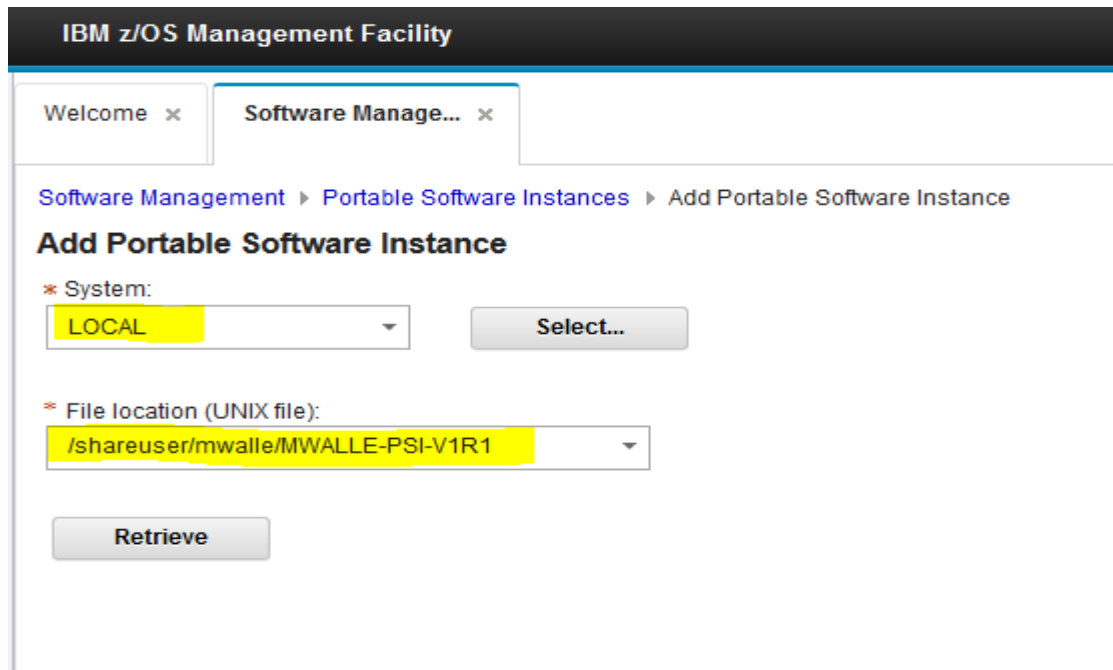

This is where all the Portable Software Instances (PSI) on this system can be found.

- The example shown will be from a z/OS UNIX location **/shareuser/mwalle/MWALLE-PSI-V1R1** .

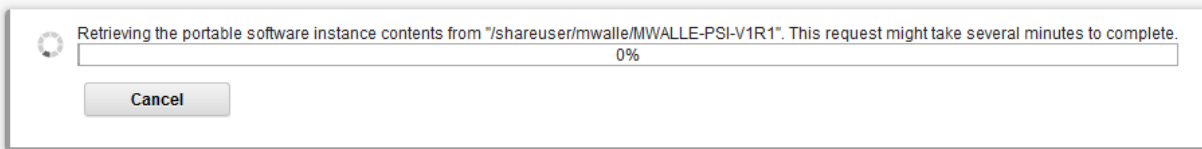You know where you PSI has been stored (from one of the bullets above). Go to **Actions -> Add**. You are going to add your PSI to the inventory for installing.
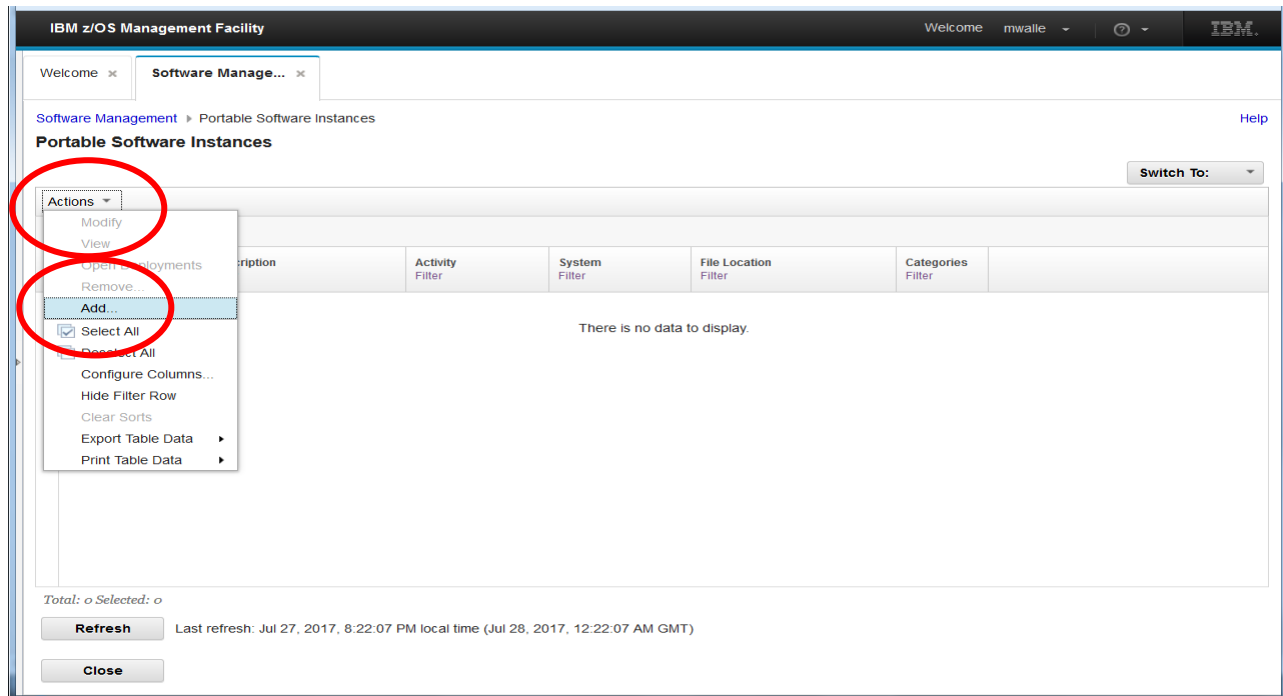
On the next screen, select the **System** as **Local** (or whatever is appropriate for your system), and then provide the z/OS UNIX location where you had your PSI. For this example, it is **/shareuser/mwalle/MWALLE-PSI-V1R1**
Click on **Retrieve.**

It might take a moment or two:

> Retrieving the portable software instance contents from "/shareuser/mwalle/MWALLE-PSI-V1R1". This request might take several minutes to complete.
>
> 0%
>
> **Cancel**

When it has been successfully retrieved, you'll see some information (about that product) in the PSI. Click on **OK.**

Welcome ✕   Software Manage... ✕

Software Management ▸ Portable Software Instances ▸ Add Portable Software Instance

Add Portable Software Instance

* System:

| LOCAL ▾ | | **Select...** |

* File location (UNIX file):

| /shareuser/mwalle/MWALLE-PSI-V1R1 ▾ |

[Retrieve]

* Name:

| MWALLE-PSI-V1R1 |

Description: (maximum 256 characters, currently 0 characters)

MWALLE's Portable Software Instance to show the
z/OS Installation Strategy.

Categories

Actions ▾

⇥ *No filter applied*

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

[OK] [Cancel]

Your PSI is ready to be installed!

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

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.**

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

Software Management ▸ Deployments ▸ Deployment Checklist

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. • 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. Since it's for Kitty Corp's Marna V1R1 PSI, that is decent name, but 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.** Then progressing through the mini-wizard, select the next step: **Select the software to deploy.**

| Welcome ✕ | Software Manage... ✕ |

Software Management ▸ Deployments ▸ Deployment Checklist ▸ Specify Deployment Properties

Specify Deployment Properties

Enter a name and optional description for this deployment.

* Name:

KittyCorpMarnaV1R1

Description: (maximum 256 characters, currently 54 characters)

The installation of Kitty Corp. product Marna at
V1R1.

Categories

Actions ▾

⇥ No filter applied

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

Now this part is new! You want to select the **Portable Software Instance** you just received from Kitty Corp (the name you used when you added the Portable Software Instance above!). Then Select **OK** to continue. Then proceed with **Set the object for this deployment.**

Software Management ▸ Deployments ▸ Deployment Checklist ▸ Select Software

Select Software

Select the type of software to deploy:

◯ Software Instance   ⦿ Portable Software Instance

Portable Software Instances

Actions ▾

⤷ *No filter applied*

	Name Filter	Description Filter	Activity Filter	System Filter	File Location Filter	Categories Filter
⦿	MWALLE-PSI-V1R1	MWALLE's Portable Software Instance to show the z/OS Installation Strategy.		LOCAL	/shareuser/mwalle/MWALLE-PSI-V1R1	

Total: 1 Selected: 1

Refresh	Last refresh: Jul 28, 2017, 3:55:30 PM local time (Jul 28, 2017, 7:55:30 PM GMT)

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 **LOCAL** system. Then **OK.** Continue on by clicking on **Check for missing SYSMODs** on the mini-wizard.

Welcome ✕	Software Manage... ✕

Software Management ▸ Deployments ▸ Deployment Checklist ▸ Select Deployment Objective

Select Deployment Objective

This deployment creates a copy of the source software. The resulting copy is referred to as the target software instance. Indicate whether you want software instance.

Objective:

⦿ Create a new software instance and connect it to the following global zone CSI. Learn more...

    ⦿ A new global zone CSI

    ◯ Another existing global zone CSI

◯ Replace an existing software instance, and connect the new instance to the existing instance's global zone CSI. Learn more...

Select the system where the target software instance will reside.

∗ Target system:

LOCAL ▾	Select...

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

Check for Missing SYSMODs

➡ Welcome
   Select Reports
   Define Data Set Settings
   Get HOLDDATA
   Summary

Welcome

Use this wizard to generate reports that help you identify if you are missing any SYSMODs in your source software or any related software instance.

This wizard guides you through the following steps:

- Select the reports to generate, and select the software instances to include.
- Define data set settings.
- Confirm that you received the latest HOLDDATA.
- Review your selections, and generate the reports.

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.**

Check for Missing SYSMODs

✔ Welcome
➡ Select Reports
   Define Data Set Settings
   Get HOLDDATA
   Summary

Select the Reports to Generate

Select the reports that you want this wizard to generate.

☐ **Requisite SYSMODs and Fix Categories reports.**

The Requisite SYSMODs report will identify potential software compatibility issues (missing SYSMODs) for software instances that will share resource the dependencies of the target software instance.
Learn more...

The fix categories report will identify missing SYSMODs for the software instance types and fix category combinations listed in the table below.
Learn more...

Fix Categories Checked by Software Instance Type

Software Instance Type	Fix Categories to be Checked
Source	• IBM.Device.* • IBM.Function.* • IBM.TargetSystem-RequiredService.*
Shared Resources	• IBM.Coexistence.* • IBM.Migrate-Fallback.*
Satisfies Dependencies	• IBM.TargetSystem-RequiredService.*

☐ **Regressed SYSMODs and HOLDDATA Delta reports.**

The Regressed SYSMODs report will identify the SYSMODs that will be lost, undone, or regressed when you migrate to the target software instance.
Learn more...

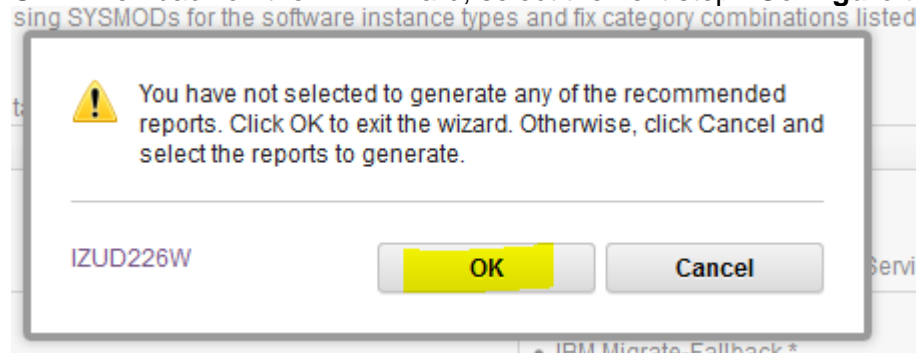The HOLDDATA Delta report will identify the USER and SYSTEM HOLD delta.
Learn more...

< Back	Next >	Finish	Cancel

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.**

sing SYSMODs for the software instance types and fix category combinations listed

⚠ You have not selected to generate any of the recommended reports. Click OK to exit the wizard. Otherwise, click Cancel and select the reports to generate.

IZUD226W   **OK**   **Cancel**   Servi

• IBM Migrate-Fallback *

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>.**

Software Management ▸ Deployments ▸ Deployment Checklist ▸ Configure Deployment

Configure Deployment for MWALLE-PSI-V1R1

➡ Welcome

  DLIBs
  Model
  SMP/E Zones
  Data Sets
  Catalogs
  Volumes and Storage Classes
  Mount Points

Welcome

Use this wizard to configure the data set names, catalogs, volumes, mount points, and SMP/E zones to be used for the target software instance.

This wizard guides you through the following steps:

  1. Indicate whether this deployment should copy the distribution zones and distribution libraries (DLIBs) that are associated with the source software.
  2. Select the software to use as a model for configuring the target software instance.
  3. Specify the SMP/E zone names to use.
  4. Specify the data set names to use, and assign the data sets to a volume or storage class.
  5. Assign each data set prefix to a catalog.
  6. Ensure that the volumes and storage classes have enough space to store the target software instance.
  7. Specify the mount point to use for each UNIX file system data set that will be included in the target software instance.

Select **Yes** because we want to take the DLIBs that Kitty Corp has sent us. Then **Next>.**

Software Management ▸ Deployments ▸ Deployment Checklist ▸ Configure Deployment

Configure Deployment for MWALLE-PSI-V1R1

✔ Welcome
➡ DLIBs
  Model
  SMP/E Zones
  Data Sets
  Catalogs
  Volumes and Storage Classes
  Mount Points

DLIBs

Indicate whether you want this deployment to copy the distribution zones and the distribution libraries (DLIBs) that are associated with the source software.

Do you want to copy the distribution zones and libraries associated with the source software?
  ⦿ Yes
  ○ No

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

Software Management ▸ Deployments ▸ Deployment Checklist ▸ Configure Deployment

Configure Deployment for MWALLE-PSI-V1R1

- ✔ Welcome
- ✔ DLIBs
- ➡ **Model**
- SMP/E Zones
- Data Sets
- Catalogs
- Volumes and Storage Classes
- Mount Points

Model

Select the software to use as a model for configuring the target software instance. z/OSMF uses the data model to prime the corresponding values for the target software instance.

Select the software to use as a model.
- ⦿ The source software
- ◯ An existing software instance

Wait just a bit:

✳ Collecting data to prime the target software instance. This request might take several minutes to complete. Note that no changes are occurring on the target system.

Cancel

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

Software Management ▸ Deployments ▸ Deployment Checklist ▸ Configure Deployment

Configure Deployment for MWALLE-PSI-V1R1

- ✔ Welcome
- ✔ DLIBs
- ✔ Model
- ➡ SMP/E Zones
- Data Sets
- Catalogs
- Volumes and Storage Classes
- Mount Points

SMP/E Zones

The Zones table lists the names that will be used for the SMP/E zones included in the target software instance. Accept the default names, or modify the values. To modify the double click an editable cell, or select it and press **Enter**. To exit an editable cell and preserve your changes, click outside of the cell or press **Enter**.

Zones

Actions ▾

✳ No filter applied

Target Target Zone Filter	Target DLIB Zone Filter	Messages Filter	Source Target Zone Filter	Source DLIB Zone Filter
MYTARG	MYDLIB		TARGET	DLIB

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.

If you wanted to investigate renaming or moving data sets, select the data set(s) and then do **Actions->Modify.** To move through this 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.

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.

Software Management ▸ Deployments ▸ Deployment Checklist ▸ Configure Deployment

Configure Deployment for MWALLE-PSI-V1R1

✔ Welcome
✔ DLIBs
✔ Model
✔ SMP/E Zones
✔ Data Sets
➡ **Catalogs**
   Volumes and Storage Classes
   Mount Points

Catalogs

The Target Data Set Name Prefixes table lists the catalogs where target data sets with the data set name prefixes will be cataloged. You can accept the default different catalogs, or select not to catalog the corresponding data sets.

Target Data Set Name Prefixes

Actions ▾

↳ No filter applied

	Prefix Filter	New or Existing Filter	Catalog the Data Sets? Filter	Catalog Name Filter	Catalog Type Filter	Messages Filter
☐	MWALLE	Existing	Yes (Required)	UCAT.SHTSO	USER	

Next up is Volumes and Storage Classes. By default (unless you changed it back on the **Data Sets** step) this Kitty Corp product will use Storage Classes. You could change volumes or Storage Classes here if you wanted. Keep going. Click **Next>.** Then **Mount Points** to move along.

Software Management ▸ Deployments ▸ Deployment Checklist ▸ Configure Deployment

Configure Deployment for MWALLE-PSI-V1R1

✔ Welcome
✔ DLIBs
✔ Model
✔ SMP/E Zones
✔ Data Sets
✔ Catalogs
➡ **Volumes and Storage Classes**
   Mount Points

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 classes, or use the **Modify** action to modify them.

Volume Filter	Total Capacity (MB) Filter	Current Allocated Space (MB) Filter	Current Allocated Space (%) Filter	Messages Filter	Allocated Space After Deployme (MB) Filter	Allocated Space After Deployme (%) Filter	Allocated Space Delta (MB) Filter	Planned Threshold (%) Filter	Initialize Volume Filter	Catalog Method Filter	Indirect Catalog Entry Symbol 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
◯	TSO	18.76

Refresh   Last refresh: Jul 28, 2017, 4:36:50 PM local time (Jul 28, 2017, 8:36:50 PM GMT)

We are now at the last configurable change to do for the deployment: Mount Points. Change the mountpoint here, if you like. Click **Finish.**

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. We are not going to really run the jobs for this module, so you can click on **OK.**

Jobs are created:

At this point, because we did no customization on the data sets, z/OSMF will tell you there are already data sets on the system with those names. That is ok, because we are not going to continue on from here in this module.

Finishing up the deployment means running the produced JCL to copy the PSI from the z/OS UNIX directory onto DASD with the names and locations, and cataloging options you wanted.

When the jobs have been completed, your Kitty Corp product is ready for you to customize and use!

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 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).