

## z/OSMF Hands-On Labs

# Learning z/OSMF Workflows (with z/OS Upgrade Workflow)

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### Introduction:

Want help with planning your z/OS V2.5 upgrade? You can have z/OSMF Workflow help you!

This lab is an introduction to using the z/OSMF Workflow function. You create a workflow, assign steps to different users, read notification messages, accept the assignment of a step, perform or skip a step, and provide feedback on a upgrade action (and the overall release upgrade).

**Now included with z/OS:** IBM provides the z/OS V2R5 Upgrade Workflow and the z/OS z15 Upgrade Workflow as part of the z/OS product. Updates and fixes for the upgrade workflows are delivered through the standard z/OS service process.

To obtain the latest PTFs for the z/OS V2R5 Upgrade Workflow, run the SMP/E REPORT MISSINGFIX command on your z/OS systems and specify a FIXCAT value of "IBM.Coexistence.z/OS.V2R5". The z/OS V2R5 Upgrade Workflow can be run on z/OS releases V2R3, V2R4, and V2R5.

Prior levels of the z/OS Upgrade Workflows for z/OS V2R2, V2R3, V2R4, and z14 are available online at the following location: z/OSMF workflows for the z/OS platform

### Our lab environment:

Be aware, you are running on z/OS V2.5 system and “performing” a z/OS V2.5 upgrade. It is meant to show you how to do a Workflow in general (and how you could use the z/OS V2.5 Upgrade Workflow in particular!).

On your own system, there might be some health checks to run for a V2.5 upgrade, that are not available on your V2.3/V2.4 system or receive an exception. That is fine, and is just to show you what a health check failure might look like during a Workflow. The object of this lab is to teach you to feel comfortable doing a z/OSMF Workflow.

You will see in this booklet the use of **SHARA01** as the userid. Where you see this, you will have to substitute your own userid you were assigned.

### Step 1: Logon to z/OSMF.

In this step, we will now go into z/OSMF to use the Workflow function. For this lab, we are using a z/OSMF V2.5 system. We will use the Desktop function, which is the strategic look for z/OSMF. If you are not using the Desktop, your system might look different, but the same functions are present on both systems.

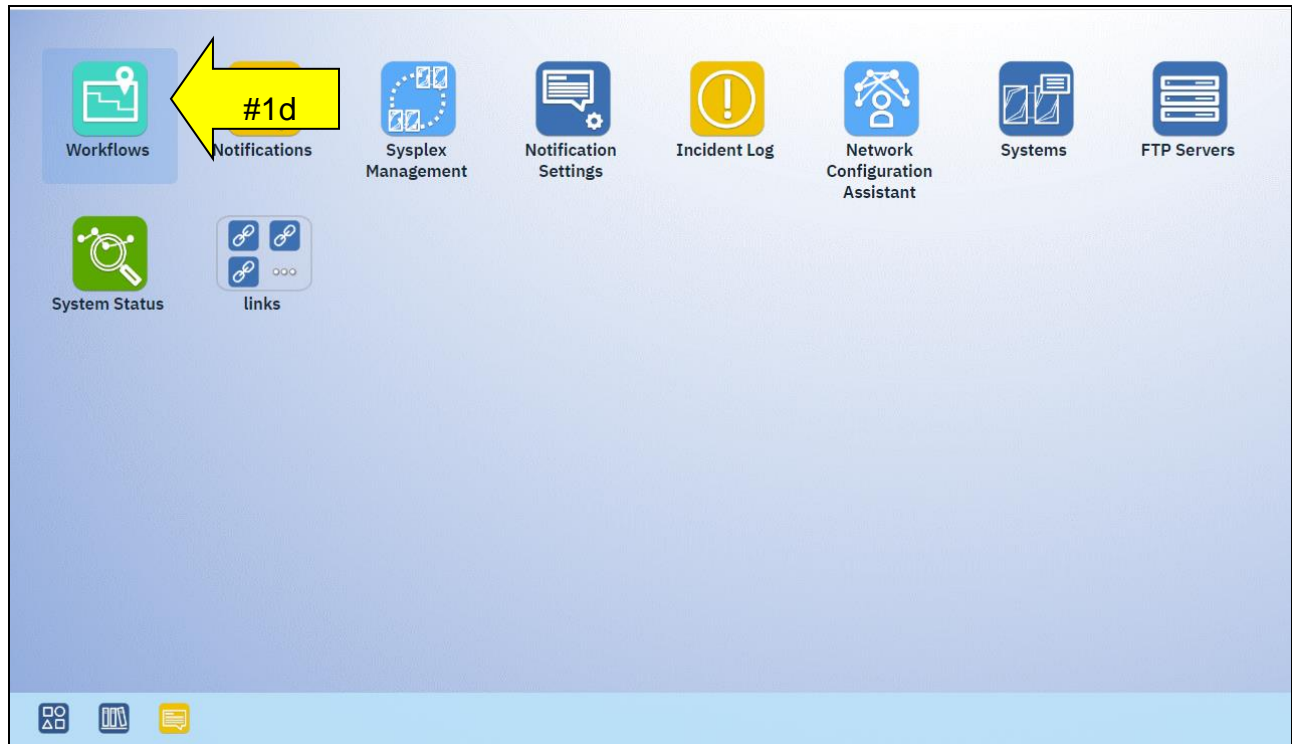
- a. Go to <https://share.centers.ihost.com/zosmf/> on Firefox or IE.
- b. Using the userid you were given (SHARAnn, SHARBnn, or SHARCnn) and the password, logon to z/OSMF. The userid you were given is a regular z/OS userid on this system, and has been given access to z/OSMF. There is *no* z/OSMF code on this lab workstation.
- c. Click on “Log in”.

The screenshot shows the login interface for the IBM z/OS Management Facility. At the top, a box contains the URL <https://share.centers.ihost.com/zosmf/>, with a yellow arrow labeled #1a pointing to it. The page header includes the IBM logo and the text "IBM z/OS Management Facility". The main heading is "Welcome to z/OS", followed by the description: "The highly secure, scalable and resilient enterprise operating system for the IBM z Systems mainframe." Below this, there are two input fields: "z/OS USER ID" with the value "shara01" and "z/OS PASSWORD" with masked characters ".....". A yellow arrow labeled #1b points to the password field. At the bottom right, there is a blue "LOG IN" button, with a yellow arrow labeled #2c pointing to it.

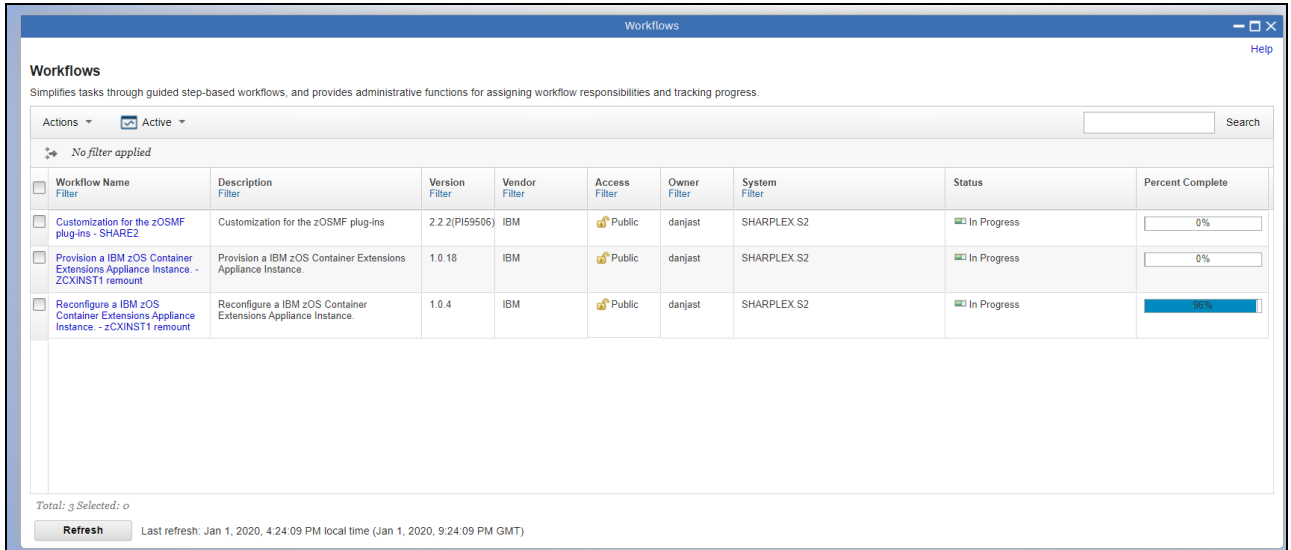
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## Enter into the Workflow function.

d. Find and click on the “Workflows” icon.



- e. This brings you into the main Workflow screen. You can see there are already some workflows created from this screen. You may resize this window to your liking.



**Workflows**

Simplifies tasks through guided step-based workflows, and provides administrative functions for assigning workflow responsibilities and tracking progress.

Actions Active  Search

No filter applied

<input type="checkbox"/> Workflow Name <small>Filter</small>	Description <small>Filter</small>	Version <small>Filter</small>	Vendor <small>Filter</small>	Access <small>Filter</small>	Owner <small>Filter</small>	System <small>Filter</small>	Status	Percent Complete
<input type="checkbox"/> Customization for the zOSMF plug-ins - SHARE2	Customization for the zOSMF plug-ins	2.2.2(PI59506)	IBM	Public	danjast	SHARPLEX S2	In Progress	<div>0%</div>
<input type="checkbox"/> Provision a IBM zOS Container Extensions Appliance Instance - zCXINST1 remount	Provision a IBM zOS Container Extensions Appliance Instance.	1.0.18	IBM	Public	danjast	SHARPLEX S2	In Progress	<div>0%</div>
<input type="checkbox"/> Reconfigure a IBM zOS Container Extensions Appliance Instance - zCXINST1 remount	Reconfigure a IBM zOS Container Extensions Appliance Instance.	1.0.4	IBM	Public	danjast	SHARPLEX S2	In Progress	<div>96%</div>

Total: 3 Selected: 0

**Refresh** Last refresh: Jan 1, 2020, 4:24:09 PM local time (Jan 1, 2020, 9:24:09 PM GMT)

## 2.Create a z/OS V2.5 Upgrade Workflow instance.

In this step, we will create a specific workflow instance based on the supplied workflow already found on the lab system. When you upgrade to z/OS V2.5, you can find this workflow on your system in the same location, when you install z/OS V2.5 coexistence PTFs.

- a. Click on the Actions drop-down, then click on “Create Workflow...”

The screenshot shows the 'Workflows' section of a software interface. At the top, there's a header 'Workflows' and a subtitle 'Simplifies tasks through guided step-based workflows, and provides administrative functions for assigning workflow re'. Below this is a table with columns 'Description', 'Version Filter', and 'Vendor Filter'. The table contains three rows of workflow data. A context menu is open over the table, showing various actions. The 'Create Workflow...' option is highlighted in blue, and a yellow arrow points to it with the label '#2a'. The menu also includes options like 'View Properties', 'Open', 'Modify...', 'Cancel', 'Delete', 'Archive', 'Stop Automation', 'Generate Feedback Summary', 'Create New Based on Existing', 'Reactivate...', 'Update Workflow Steps', 'Customize JOB Statement', 'Workflows View', 'Select All', 'Deselect All', 'Configure Columns...', 'Hide Filter Row', 'Clear Sorts', and 'Clear Search'. At the bottom of the menu, it says 'Total: 3 Selected: 0'.

Description	Version Filter	Vendor Filter
Customization for the zOSMF plug-ins	2.2.2(PI59506)	IBM
Provision a IBM zOS Container Extensions Appliance Instance.	1.0.18	IBM
Configure a IBM zOS Container Extensions Appliance Instance.	1.0.4	IBM

- b. Carefully enter in the location of the XML workflow file where the z/OS V2.5 Upgrade Workflow is found, where it says “Workflow definition file:”. You only need to specify the XML file, as that one will pull in the other two files. The Workflow definition file for this lab is found here (pay attention to case).

**`/usr/lpp/bcp/upgrade/zOS_V2.5_from_V2.4_Upgrade_Workflow_V2.0.xml`**

- c. For “System:”, on the dropdown, select “SHARPLEX.S2”, which might be the only choice. Leave “Workflow variable input file:” blank.
- d. Then click “Next >”. (“Leaving Workflow variable input file” blank.)

The screenshot shows the 'Create Workflow' dialog box. It has three main input fields and four buttons at the bottom. Yellow arrows with labels point to specific elements:

- Arrow #2c points to the 'Location (system) of definition and variable input files:' dropdown menu, which currently shows 'SHARPLEX.S2 (S2)'.
- Arrow #2b points to the 'Workflow definition file:' text input field, which contains the path `/usr/lpp/bcp/upgrade/zOS_V2.5_from_V2.4_Upgrade_Workflow_V2.0.xml`.
- Arrow #2d points to the 'Next >' button.

The 'Workflow variable input file:' field is empty and shows the placeholder text 'Select or type'. The buttons at the bottom are '< Back', 'Next >', 'Cancel', and 'Help'.

## Name the workflow and identify the system.

At this point, we'll provide some information about this workflow.

- e. Name your workflow instance: type a meaningful name under "Workflow name: " of whatever you want, but please put your userid in the name so we know which workflows to remove later. You must name your workflow. (A suggested name: **SHARAx** Upgrade Workflow Lab for zOS V2.5 , where SHARAx is your designated userid.)
- f. Decide who you want the owner to be: type the owner's name on "Owner user id:". Usually the owner would be the one that created the workflow, but you can make it some other user if you like. For this lab, keep it your assigned user ID. You must have an owner.
- g. Comments: put anything you wish here, or leave it blank.
- h. Click "Finish" at this point. You might have to scroll a little to see the "Finish" box at the bottom of the window.

**An Advanced Point!** See the little checkbox "Assign all steps to owner user ID"? This is a very handy way of assigning all the steps (upgrade actions) initially to the owner. By doing this you immediately put all the steps into a "Ready" state for performing. Otherwise, you would have to assign steps, and have them accepted, to have them "Ready". We are going to not check this box, so you can see more of the entire process.

The screenshot shows the 'Create Workflow' dialog box with the following fields and annotations:

- Location (system) of definition and variable input files:** SHARPLEX.S2 (S2)
- Workflow definition file:** /usr/lpp/bcp/upgrade/zOS\_V2.5\_V2.4\_Upgrade\_Workflow\_V2.0.xml
- Description:** zOS V2R5 Upgrade Workflow from zOS V2R4
- Vendor:** IBM
- Version:** 2.0
- Is Callable:** ?  
Cannot be called by another workflow
- \* Workflow name:** SHARA01 Upgrade Workflow Lab for zOS V2.5 (Annotated with #2e)
- \* Owner user ID:** shara01 (Annotated with #3f)
- \* System (where workflow steps will be performed):** SHARPLEX.S2 (S2)
- Comments:** (Annotated with #3g)
- \* Access(Learn More):** Public
- ☐ Save as output
- ☒ Open workflow on finish
- ☐ Assign all steps to owner user ID
- ☐ Delete workflow on completion
- Buttons:** < Back, Next >, Finish (Annotated with #3h), Cancel

### 3. Looking at the workflow overall.

There are some things to notice at this point, if you twist the “**Workflow Details**”

- There are 137 steps in this workflow.
- You have completed 0% of them: 0 of 137 steps.
- There are five major (or “parent”) steps. This may be confusing, as there are sub-steps that count as steps in that 137 total. The first step to help you tailor or Workflow for what is in use on the system (Discovery), and the fifth step being the overall instructions for sending your feedback back to IBM.
- These steps are in a state of “Unassigned”, meaning that no one has been tasked with doing them yet.
- Notes and History:** you can put any notes on this entire workflow here. Perhaps information on the entire schedule of this upgrade, or something else that is appropriate to make at the entire workflow level. Under History, you can see the history of this workflow: when it was created, who created it, etc.

The screenshot shows the 'SHARA01 Upgrade Workflow Lab for zOS V2.5' interface. It includes a 'Workflow Details' section and a 'Workflow Steps' table. Annotations point to specific elements:

- #3a** points to the 'Description' field: 'zOS V2R5 Upgrade Workflow from zOS V2R4 to zOS V2R5'.
- #3b** points to the 'Steps complete' field: '0 of 137'.
- #3c** points to the 'Title' field in the 'Workflow Steps' table: 'Discover z/OS features in use'.
- #3d** points to the 'State' field in the 'Workflow Steps' table: 'Unassigned'.
- #3e** points to the 'Notes | History' link in the top right corner.

**Workflow Details:**

- Description: zOS V2R5 Upgrade Workflow from zOS V2R4 to zOS V2R5
- Owner: shara01
- System: SHARPLEX.S2 (S2)
- Contains Parallel Steps: No
- Status: In Progress
- Percent complete: 0%
- Access: Public
- Workflow definition file: /usr/lpp/bcp/upgrade/zOS\_V2.5\_from\_V2.4\_Upgrade\_Workflow\_V2.0.xml
- System of workflow definition file: SHARPLEX.S2 (S2)
- Delete workflow on completion: No

**Workflow Steps:**

State	No.	Title	CalledWorkflow	Automated	Owner	Skill Category
Unassigned	1	Discover z/OS features in use		Yes		z/OS Systems Programme
Unassigned	2	Introducing the z/OS V2R5 Upgrade Workflow				
Unassigned	3	Actions for everyone				
Unassigned	4	Upgrading from z/OS V2R4 to z/OS V2R5				

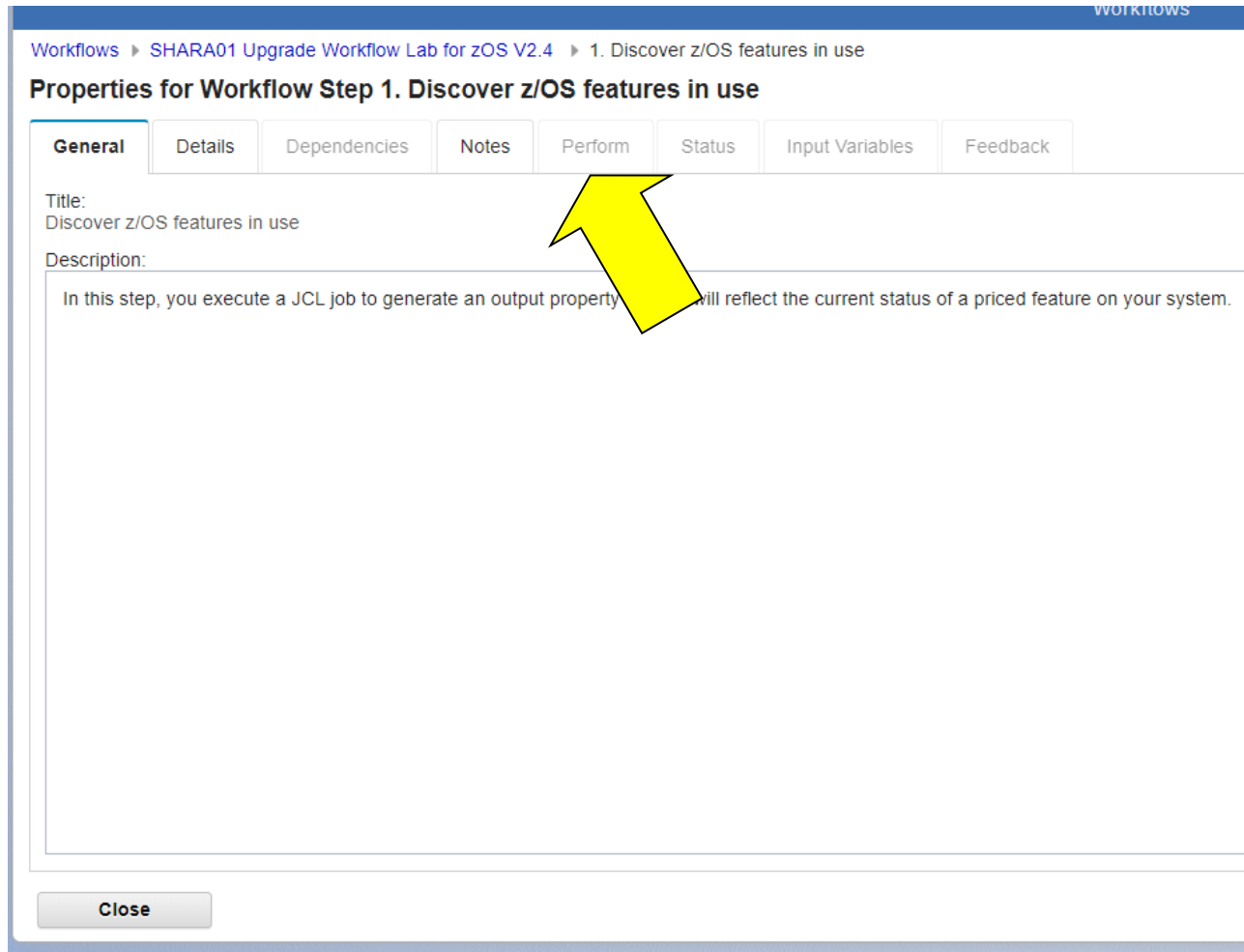
Total: 204 Selected: 0

Return to Workflows Refresh Last refresh: Feb 22, 2022, 9:22:02 PM local time (Feb 23, 2022, 2:22:02 AM GMT)



Click on Step 1 “**Discover z/OS features in use**” (the blue part) so that we can examine it. There’s not much we can see, because we haven’t been assigned this step. Notice that the “Perform” tab has been grayed out. If we want to perform this step, we must be assigned to it, and must agree to do it.

Click on Close at the bottom to exit out.



The screenshot shows a web interface for workflow management. At the top, there's a breadcrumb trail: [Workflows](#) > [SHARA01 Upgrade Workflow Lab for z/OS V2.4](#) > [1. Discover z/OS features in use](#). Below this is the title **Properties for Workflow Step 1. Discover z/OS features in use**. A horizontal tab bar contains several tabs: **General**, Details, Dependencies, Notes, Perform, Status, Input Variables, and Feedback. The **Perform** tab is highlighted with a yellow arrow. Below the tabs, the 'Title' field contains 'Discover z/OS features in use'. The 'Description' field contains the text: 'In this step, you execute a JCL job to generate an output property... will reflect the current status of a priced feature on your system.' At the bottom left, there is a 'Close' button.

## 4. Assigning a step.

Let's get to the real work – assigning those steps to get them performed. You can assign a group of upgrade actions (say, all the Communications Server upgrade actions), or individual upgrade actions to one or more z/OSMF users. You select which steps to assign based on what steps are checked – a higher level step (which would include all the sub-steps), or on the smallest sub-step (“leaf”) itself. The idea is the same.

Let's do the first step in the z/OS V2.5 Upgrade Workflow – the Discovery step. This step is a prerequisite for several other steps, so it is natural that it is first. (z/OSMF Workflow would tell you if you tried to execute a step that had a pre-req step and that pre-req step wasn't completed.)

We will assign this Discovery step to a lucky person (ourselves) in this lab.

You should be back on the panel where the steps are shown:

- Click the box at the left of step 1 “Discovery z/OS features in use”.
- Then click on **Actions -> Assignment and Ownership** -> “Add Assignees...”

Workflows > SHARA01 Upgrade Workflow Lab for z/OS V2.5

### SHARA01 Upgrade Workflow Lab for z/OS V2.5

Workflow Details

Workflow Steps

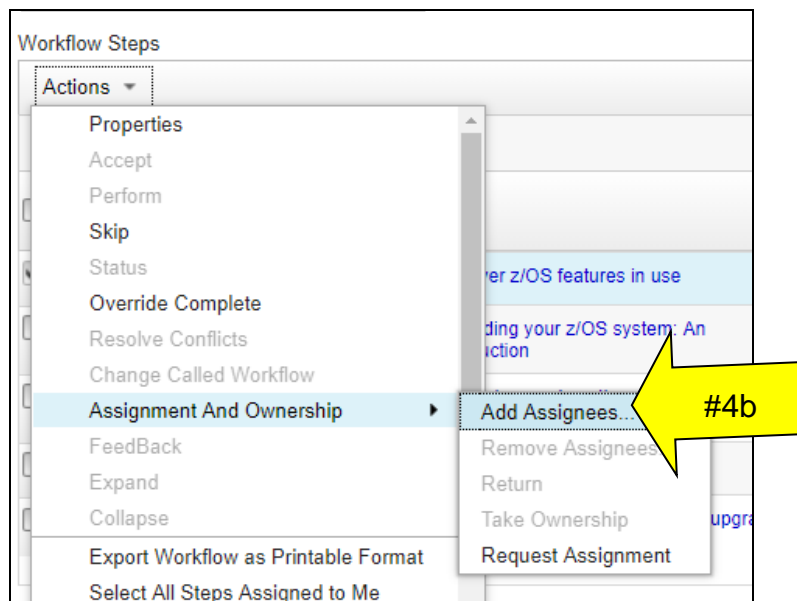
Actions  Search ☐ All st

No filter applied

<input type="checkbox"/> State Filter	No.	Title Filter	CalledWorkflow Filter	Automated Filter	Owner Filter	Skill Category Filter
<input checked="" type="checkbox"/> Unassigned		Discover z/OS features in use		Yes		z/OS System
<input type="checkbox"/> Unassigned		Introducing the z/OS V2R5 Upgrade Workflow				
<input type="checkbox"/> Unassigned	3	General upgrade actions for everyone migrating to z/OS V2R5				
<input type="checkbox"/> Unassigned	4	Upgrading from z/OS V2R4 to z/OS V2R5				
<input type="checkbox"/> Unassigned	5	Provide feedback to IBM on your upgrade experience		No		z/OS System

Total: 204 Selected: 1

Return to Workflows Refresh Last refresh: Feb 22, 2022, 9:26:11 PM local time (Feb 23, 2022, 2:26:11 AM GMT)



This is an interface you are probably familiar with.

- c. Click on userid in the list (SHARAnn, for instance), and if you wish, you can click on more than one userid. These people you add will be assigned to this upgrade action (step). **If you don't see your userid on the list...then add it! (Actions -> Add... -> then for SAF User ID, type your SHARAnn userid and "OK". Now, it should appear on the list.)** We are assigning to one person, so you can learn how to accept an upgrade action (step) assigned to you.
- d. Click on the "Add >" button, and see that one person has been added to the yellow box on the right. You could assign this step to multiple people if you wanted.
- e. Type a friendly note, if you want, and then click on "OK". If you left the "Send z/OSMF notifications to assignees..." box checked, this person will be notified he/she has something to do. The Notification is sent.

Workflows > SHARA01 Upgrade Workflow Lab for z/OS V2.4 > Add Assignees

### Add Assignees

Select one or more SAF user IDs, SAF groups or z/OSMF roles to be assigned to the selected steps.

Selected Steps

Available assignees

Actions ▾

No filter applied

Name Filter	Type Filter
<input checked="" type="checkbox"/> shara01	SAF user ID
<input type="checkbox"/> z/OS Security Administrator	z/OSMF role
<input type="checkbox"/> z/OSMF Administrator	z/OSMF role
<input type="checkbox"/> z/OSMF User	z/OSMF role

Total: 4 Selected: 1

Comments:

☒ Send z/OSMF notifications to assignees (comments are not included on notifications)

OK Cancel

#4c

#4d

#4e

\* Assignees to be added:  
shara01

Add >  
Add All >>  
< Remove  
<< Remove All

- f. Now you are back into the workflow. Scroll to the columns on the right, until you see “Assignees”. You can see the name you put there.
- g. Also look at “Notifications” back on the original Desktop (you might have to move your Workflows frame if you covered up Notifications before). There is one notification there waiting for us. It is the notification that we’ve been assigned a step in this workflow.
- h. Notice also that the State is now “Assigned” on *all* this section’s upgrade actions (steps), because we selected the entire section’s parent step.

Workflows

[Workflows](#) > SHARA01 Upgrade Workflow Lab for z/OS V2.5

Help

SHARA01 Upgrade Workflow Lab for z/OS V2.5

[Notes](#) | [History](#)

Workflow Details

Workflow Steps

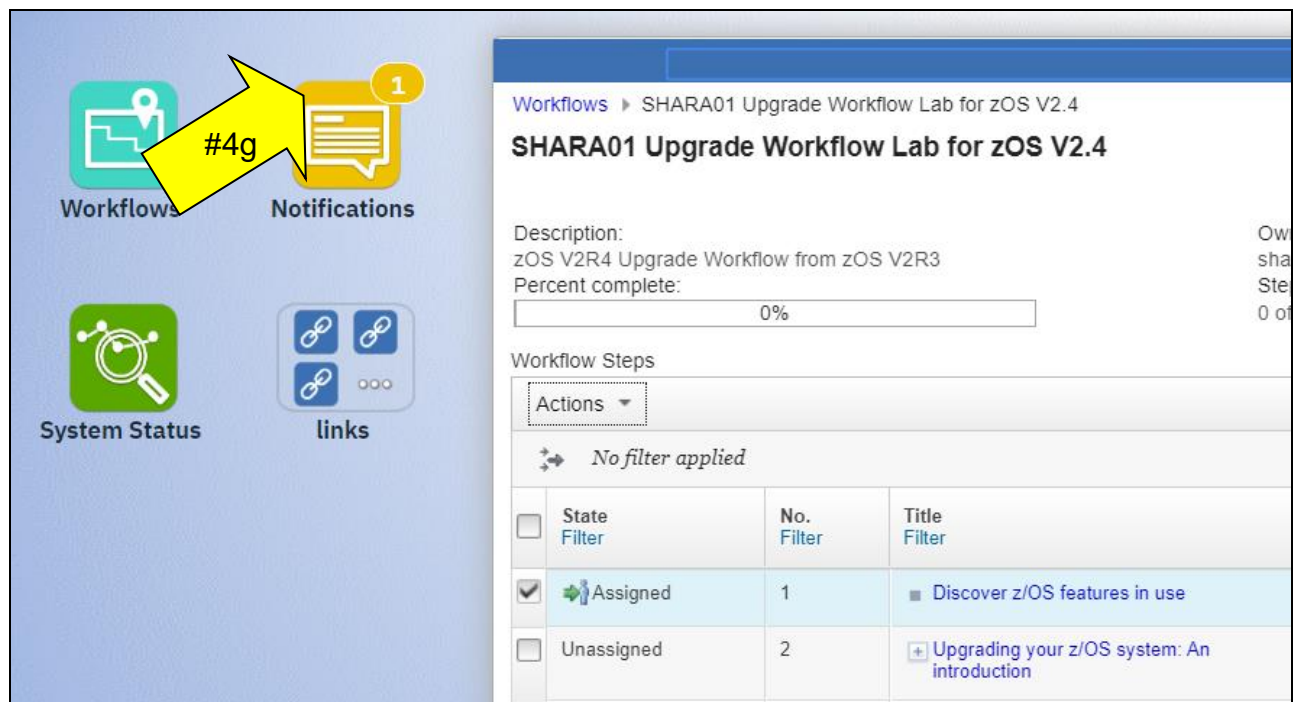
Actions

Search

☐ All step content

No filter applied

State Filter	No. Filter	Title Filter	CalledWorkflow Filter	Skill Category Filter	Assignees Filter
<input checked="" type="checkbox"/> Assigned	1	Discover z/OS features in use		z/OS Systems Programmer	shara01
<input type="checkbox"/> Pending	2	Introducing the z/OS V2R5 Upgrade Workflow			
<input type="checkbox"/> Pending	3	General upgrade actions for everyone migrating to z/OS V2R5			
<input type="checkbox"/> Pending	4	Upgrading from z/OS V2R4 to z/OS V2R5			
<input type="checkbox"/> Unassigned	5	Provide feedback to IBM on your upgrade experience		z/OS Systems Programmer	



**Workflows** ▸ SHARA01 Upgrade Workflow Lab for zOS V2.4

## SHARA01 Upgrade Workflow Lab for zOS V2.4

Description:  
zOS V2R4 Upgrade Workflow from zOS V2R3

Percent complete:  
0%

Workflow Steps

Actions ▾

*No filter applied*

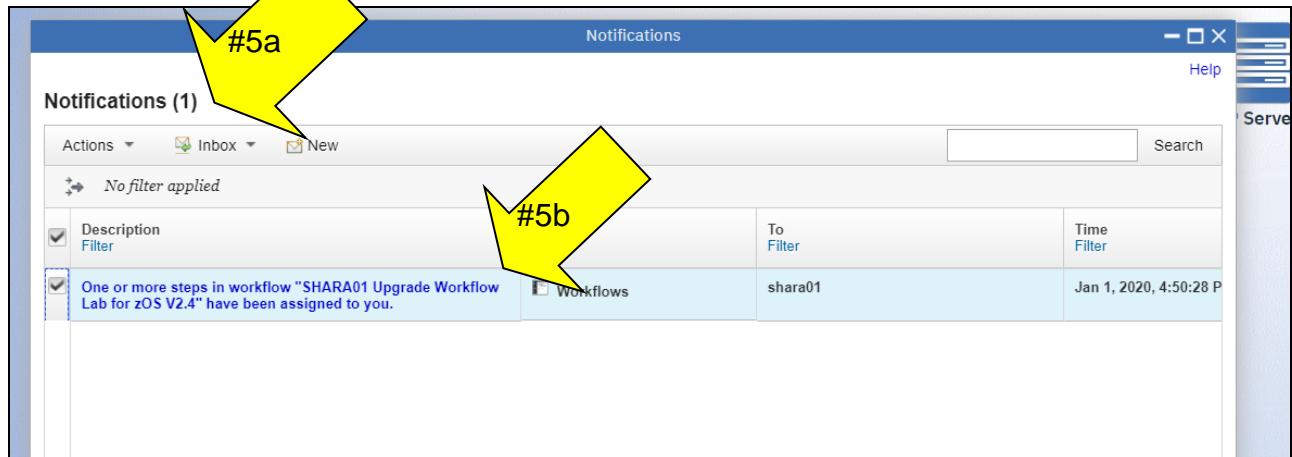
<input type="checkbox"/>	State Filter	No. Filter	Title Filter
<input checked="" type="checkbox"/>	Assigned	1	Discover z/OS features in use
<input type="checkbox"/>	Unassigned	2	Upgrading your z/OS system: An introduction

## 5. Accepting a step.

“Assigned” isn’t enough to perform an action (step). You must also have the step **Accepted** by the assignee. We are going to temporarily leave the Workflow task to take a look at our notification.

You should at this point see that ‘**Notifications(nn)**’ has appeared on your screen. If you don’t see it, try to click “Refresh” (or you can logoff and logon back to z/OSMF if need be). The lab system sometimes loses connectivity at a conference and you may have to re-establish your identity in order to see the Notification. Don’t worry if you don’t see it, just keep moving past this section if the Notification is slow in arriving.

- a. Click on “Notifications(nn)” on the Desktop to open the application.
- b. Click the blue highlighted Description. (If the click doesn’t work on your browser, do a right mouse click, then “Go To Task”.) This will bring you back into the workflow where you have steps assigned to you directly. Once you click on the notification, it will not show up as “Notifications(nn)” anymore. It will have just “Notifications” (without the (nn)) indicating that you have seen new messages. You can delete a notification if you wish in Notifications, by just selecting the item(s), then Actions pull-down -> Delete.



We are put back in the workflow (which we got to by way of the Notifications selection).

Let's see how to find what was assigned to our userid and how to use workflow filtering, which is very powerful. Scroll to the right to find the "Assignees" column, and click on "Filter". This would be helpful if many different people were assigned a step in a large workflow.

Workflows » SHARA01 Upgrade Workflow Lab for z/OS V2.5 Help

**SHARA01 Upgrade Workflow Lab for z/OS V2.5** Notes | History

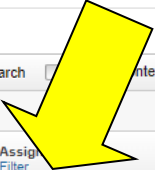
Workflow Details

Workflow Steps

Actions  Search  Content ?

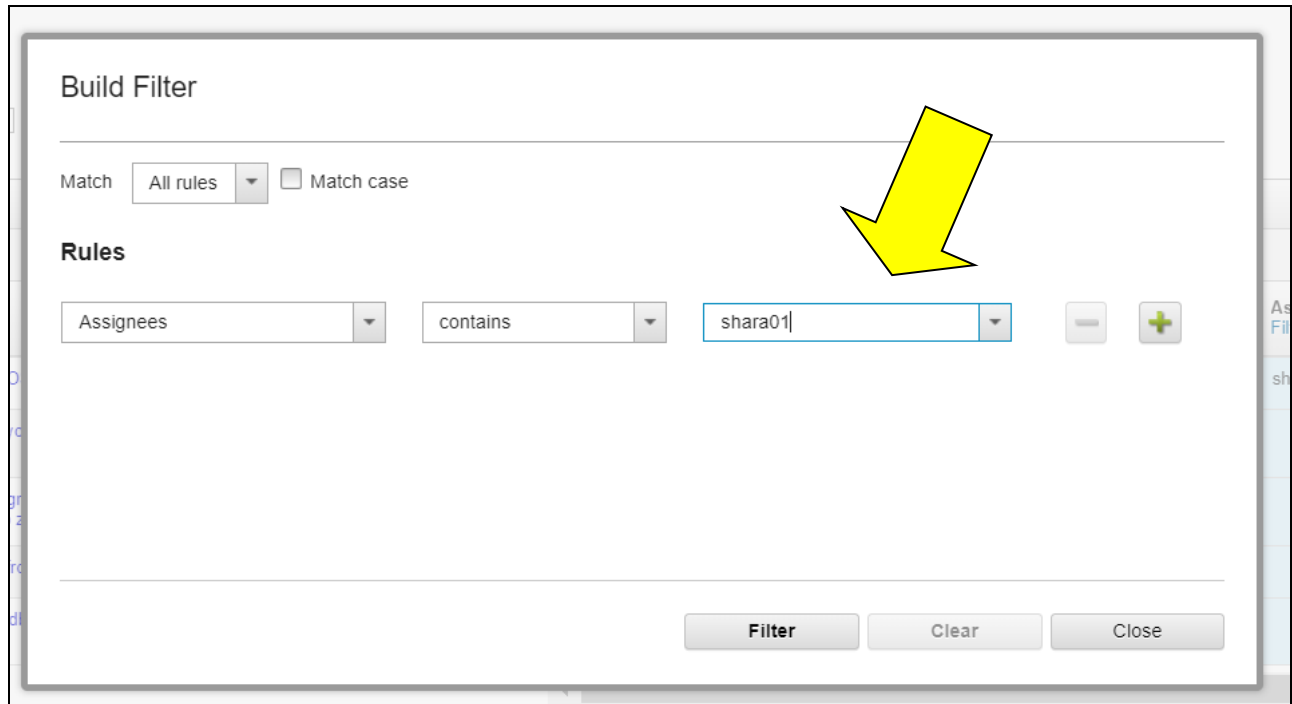
No filter applied

<input type="checkbox"/> State Filter	No. Filter	Title Filter	CalledWorkflow Filter	Category	Assign Filter
<input type="checkbox"/> Assigned	1	Discover z/OS features in use		stems Programmer	shara01
<input type="checkbox"/> Unassigned	2	Introducing the z/OS V2R5 Upgrade Workflow			
<input type="checkbox"/> Unassigned	3	General upgrade actions for everyone migrating to z/OS V2R5			
<input type="checkbox"/> Unassigned	4	Upgrading from z/OS V2R4 to z/OS V2R5			
<input type="checkbox"/> Unassigned	5	Provide feedback to IBM on your upgrade experience		stems Programmer	





Then, under the “Assignees” blank area on the right, type your userid (SHARAnn, SHARBnn, SHARCnn), to filter on upgrade actions that are assigned to you, and then click on “Filter”.



The screenshot shows a 'Build Filter' dialog box. At the top, it says 'Build Filter'. Below that, there is a 'Match' section with a dropdown menu set to 'All rules' and a checkbox for 'Match case'. Under the 'Rules' section, there is a row of three dropdown menus: the first is set to 'Assignees', the second is set to 'contains', and the third contains the text 'shara01'. A large yellow arrow points to the 'shara01' text. To the right of the third dropdown are minus and plus icons. At the bottom of the dialog are three buttons: 'Filter', 'Clear', and 'Close'.

- c. You should see only the steps that are assigned to you because of the filter. We are going to accept the step assigned to us. Check the step 1 box ("Discover z/OS features to use").
- d. Then click on the "Actions" drop-down, then "Accept". If "Accept" is grayed out, you have not selected any steps, so verify that step 1 has a check on it before trying to do an action on it.

The screenshot shows the 'Workflows' interface for 'SHARA01 Upgrade Workflow Lab for z/OS V2.5'. The 'Workflow Steps' section displays a table with the following data:

State Filter	No. Filter	Title Filter	CalledWorkflow Filter	Category	Assignees (contains "shara01")
<input checked="" type="checkbox"/> Assigned	1	Discover z/OS features to use		stems Programmer	shara01

Annotations: A yellow arrow labeled '#5c' points to the checkbox in the first column of the table. Another yellow arrow labeled '#5d' points to the 'Actions' dropdown menu above the table.

e. You can make a comment when you accept any steps, then click on OK.

Workflows > SHARA01 Upgrade Workflow Lab for zOS V2.4

### SHARA01 Upgrade Workflow Lab for zOS V2.4

Description:  
zOS V2R4 Upgrade Workflow from zOS V2R3

Percent complete: 0%

Workflow Steps

Actions ▾

✱ No filter applied

<input type="checkbox"/>	State Filter	No. Filter	Title Filter
<input checked="" type="checkbox"/>	Assigned	1	Discover z/OS features in
<input type="checkbox"/>	Unassigned	2	Upgrading your z/OS system introduction
<input type="checkbox"/>	Unassigned	3	General upgrade actions for migrating to z/OS V2R4
<input type="checkbox"/>	Unassigned	4	Upgrading from z/OS V2R3
<input type="checkbox"/>	Unassigned	5	Provide feedback to IBM on your experience

Total: 278 Selected: 1

[Return to Workflows](#) [Refresh](#) Last refresh: Jan

#### Accept Step

Selected Steps

Comments:

I hereby swear that I will do this step to the best of my ability.

**#5e**

[OK](#) [Cancel](#) [Help](#)

You see now that the state of step 1 is “Ready”. If you don’t see “Ready”, there was a problem with assignment and acceptance. Let’s perform this step now.

Click on the blue part of “Discover z/OS features to use” to open up the step.

(You might want to remove your Filter in the Assignee column so you can see the entire workflow instance again. Filter, then Clear in the pop-up.)

The screenshot shows the 'Workflows' interface for 'SHARA01 Upgrade Workflow Lab for zOS V2.5'. It displays a table of workflow steps. A yellow arrow points to the step 'Discover z/OS features in use', which is in the 'Ready' state. The table has columns for State, No., Title, Category, and Assignees.

State	No.	Title	Category	Assignees
Ready	1	Discover z/OS features in use	stems Programmer	shara01

Now, since the step was assigned and accepted, you can see that the Perform tab can be clicked on. Click on the Perform tab:

The screenshot shows the 'Properties for Workflow Step 1. Discover z/OS features in use' interface. The 'Perform' tab is highlighted. The title is 'Discover z/OS features in use'. The description is: 'In this step, you execute a JCL job to generate an output property file that will reflect the current status of a priced feature on your system.'

The reason why we have selected this Workflow for our lab is because it shows you how a workflow can do some discovery to skip certain steps you don’t need to do.

The question it asks: do you want to skip hardware server level information for servers before the level on which you are running this workflow? Most people want to do this if they don't want to see steps for older server levels which they don't need anymore. Select **"Yes"**, and then **Next**.

Workflows

Workflows > SHARA01 Upgrade Workflow Lab for z/OS V2.5 > 1. Discover z/OS features in use

Help

Properties for Workflow Step 1. Discover z/OS features in use

General Details Dependencies Notes **Perform** Status Input Variables Feedback

✓ Input Variables  
➡ Step Discovery Options  
Review Instructions  
Edit Output File Path  
Create JOB statement  
Review JCL  
Submit and Save JCL

Input Variables - Step Discovery Options  
Enter the variable values for this input category.

\* Hardware Choice: ⓘ - Do you want to skip the hardware steps for prior levels of servers on the system you have selected?:  
Yes

< Back **Next >** Save Finish Cancel

Following along with the guidance on the left hand side, we are going to Review Instructions now. This steps tells us what will happen when the discovery job is run. Read this information. Click on **Next**.

The screenshot shows a window titled "Workflows" with a breadcrumb trail: "Workflows > SHARA01 Upgrade Workflow Lab for z/OS V2.5 > 1. Discover z/OS features in use". A "Help" link is in the top right. Below the breadcrumb is the title "Properties for Workflow Step 1. Discover z/OS features in use". A series of tabs are present: "General", "Details", "Dependencies", "Notes", "Perform" (which is active), "Status", "Input Variables", and "Feedback". On the left side of the "Perform" tab, there is a list of actions with checkboxes: "Input Variables" (checked), "Step Discovery Options" (checked), "Review Instructions" (highlighted with a yellow background), "Edit Output File Path", "Create JOB statement", "Review JCL", and "Submit and Save JCL". The main area of the "Perform" tab is titled "Review Instructions". It contains the following text: "To proceed with the guided path through creating and executing the REXX on SHARPLEX.S2 (S2), click **Next**. Or, you can choose to bypass this step. If so, first review and confirm that the instructions below have been done. Then, click **Finish** to mark the step complete." Below this is a section titled "Instructions:" which contains a text box with the following content: "This step of the workflow will determine which z/OS priced features are currently enabled on the running system. Using this information (which you control with your IFAPRDxx parmlib member), associated steps with DISABLED features will be marked as Skipped. The objective of this step is to automatically reduce the number of non-applicable upgrade steps that you need to review." "Review the output of this step to see which priced features were determined to be disabled on this system, and to see which steps have had their state changed." "If you determine that you later want to perform those steps that were marked as Skipped, you can change the status and perform those steps, after they have been assigned." "Note: This step writes the output property file to the location indicated in Output File Path. You can modify the file path as appropriate for your environment. If you are running the workflow on another z/OS system, ensure that the output file path is shared with the system that you are upgrading. If you are using the tmp directory, be sure to include the system name in the directory path. Example: /SYSTEM/tmp/migration\_inputfile.txt". At the bottom of the dialog are five buttons: "< Back", "Next >" (highlighted with a yellow background), "Save", "Finish", and "Cancel".

You must provide an Output File Path. This job will need to write some information that the workflow will need. There is a default provided, but you should supply your own unique one, since many people are probably doing this lab at the same time and we would all overlay each other. Put your assigned userid in the field, so yours is unique, such as **/tmp/shara01\_migration\_inputfile.txt** where **shara01** is your userid. Then click on **Next**.

The screenshot shows a web-based interface for configuring a workflow step. At the top, a blue header bar contains the word "Workflows". Below it, a breadcrumb trail reads "Workflows > SHARA01 Upgrade Workflow Lab for z/OS V2.5 > 1. Discover z/OS features in use". The main title is "Properties for Workflow Step 1. Discover z/OS features in use". A row of tabs includes "General", "Details", "Dependencies", "Notes", "Perform" (which is active), "Status", "Input Variables", and "Feedback". On the left, a vertical list of steps with checkboxes shows: "Input Variables" (checked), "Step Discovery Options" (checked), "Review Instructions" (checked), "Edit Output File Path" (active, highlighted with a yellow arrow), "Create JOB statement", "Review JCL", and "Submit and Save JCL". The main area is titled "Edit Output File Path" with the subtitle "The properties file to read from at the end of the step." Below this, a label "Output File Path:" is followed by a text input field. The field contains the text "/tmp/shara01\_migration\_inputfile.txt", which is highlighted with a yellow background. At the bottom, a row of buttons includes "< Back", "Next >" (highlighted with a yellow background), "Save", "Finish", and "Cancel".

We are almost ready to submit our discovery job. The next is the jobcard. You can keep that as you wish, or perhaps change the jobname because the default is not very helpful. Also it is helpful that if you change to jobcard, make it applicable to all future jobs in this workflow if you like. Then click **Next**.

Workflows

Workflows > SHARA01 Upgrade Workflow Lab for z/OS V2.5 > 1. Discover z/OS features in use

Properties for Workflow Step 1. Discover z/OS features in use

General Details Dependencies Notes **Perform** Status Input Variables Feedback

☒ Input Variables  
☒ Step Discovery Options  
☒ Review Instructions  
☒ Edit Output File Path  
☒ Create JOB statement  
☐ Review JCL  
☐ Submit and Save JCL

**Create JOB statement**

Specify the JOB statement to use for this job. You can accept the default or define a new JOB statement.

\* JOB statement JCL: [List variables for substitution](#)

```
//SHARA01WF JOB (ACCTINFO),CLASS=A,MSGCLASS=0,
//          MSGLEVEL=(1,1),REGION=0M,NOTIFY=SHARA01
```

Undo All Changes View Substitutions

Apply updates to:

☒ All steps in workflow 'SHARA01 Upgrade Workflow Lab for z/OS V2.5'

☐ This step 'Discover z/OS features in use' only.

< Back **Next >** Save Finish Cancel

Then review the JCL. You should not need to edit it, but you can browse it if you like. Then click **Next**.

Now, the job will be submitted. Click on **Finish**.

The job was submitted! It should run quickly, but click on **Refresh**, if you don't see it done.

*Where is this job running?* This is a normal JCL batch job that MVS is running on the host system under your userid. If you wanted to look at it under your spool product (like SDSF) you could. z/OSMF is just handling the submission and retrieval of the job for you.



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After the job has run, you should see some **Status**. Click on **Status**. (If you don't see anything click on "Refresh" to see if it has finished.)

You can click on each of the tabs to see the output from the job. You should see return codes of 0000 for both steps – GENER and RUNIT. Click on **Close** when you are satisfied.

Properties for Workflow Step 1. Discover z/OS features in use

General	Details	Dependencies	Notes	Perform	Status	Input Variables	Feedback
Name: SHARA01W	ID: JOB13301	Class: A	Type: JOB	Status: OUTPUT	Return code: CC 0000		
JESMSGGLG	JESJCL	JESYSMSG	SYSPRINT	SYSTSPRT			
DD name: JESMSGGLG	Step name: JES2	Procedure step name:	Dataset ID: 2	Class: 0	Record count: 27		
Output (1.796KB of 1.796KB shown)							
<pre> 1 0 JES2 JOB LOG -- SYSTEM S2 -- NODE N1 18.13.24 JOB13301 ---- TUESDAY, 04 FEB 2020 ---- 18.13.24 JOB13301 IRR010I USERID SHARA01 IS ASSIGNED TO THIS JOB. 18.13.24 JOB13301 ICH70001I SHARA01 LAST ACCESS AT 18:05:50 ON TUESDAY, FEBRUARY 4, 2020 18.13.24 JOB13301 \$HASP373 SHARA01W STARTED - INIT 1 - CLASS A - SYS S2 18.13.24 JOB13301 IEF403I SHARA01W - STARTED - TIME=18.13.24 18.13.24 JOB13301 - --TIMINGS (MINS.)-- 18.13.24 JOB13301 -JOBNAME STEPNAME PROCSTEP RC EXCP CPU SRB CLOCK SERV PG PAGE SWAP VIO SWAPS STEPNO 18.13.24 JOB13301 -SHARA01W GENER 00 52 .00 .00 .00 211 0 0 0 0 0 1 18.13.24 JOB13301 IEA630I OPERATOR CONDIST NOW ACTIVE, SYSTEM=S2 , LU=SHARA01W 18.13.24 JOB13301 D PROD,STATE 18.13.24 JOB13301 IEA631I OPERATOR CONDIST NOW INACTIVE, SYSTEM=S2 , LU=SHARA01W 18.13.25 JOB13301 IEA630I OPERATOR CONDIST NOW ACTIVE, SYSTEM=S2 , LU=SHARA01W 18.13.25 JOB13301 D OMVS,PFS 18.13.25 JOB13301 IEA631I OPERATOR CONDIST NOW INACTIVE, SYSTEM=S2 , LU=SHARA01W 18.13.25 JOB13301 -SHARA01W RUNIT 00 124 .00 .00 .01 2173 0 0 0 0 0 2 18.13.25 JOB13301 IEF404I SHARA01W - ENDED - TIME=18.13.25 18.13.25 JOB13301 -SHARA01W ENDED. NAME- TOTAL CPU TIME= .00 TOTAL ELAPSED TIME= .01 18.13.25 JOB13301 \$HASP395 SHARA01W ENDED - RC=0000 0----- JES2 JOB STATISTICS ----- 04 FEB 2020 JOB EXECUTION DATE </pre>							

At this point, something interesting has happened. If you untwist the **Workflow Details**, look how 13 of 137 steps are completed, and 9% of our work is done! That is the beauty of discovery, because not applicable steps have been skipped. (You can still view them if you want, or even perform them, but that is your choice.)

Workflows

SHARA01 Upgrade Workflow Lab for zOS V2.5

Help

SHARA01 Upgrade Workflow Lab for zOS V2.5

Notes | History

Workflow Details

Description:

zOS V2R5 Upgrade Workflow from zOS V2R4

Is Callable:

Cannot be called by another workflow

Steps complete:

13 of 137

Workflow definition file:

/usr/lpp/bcp/upgrade/zOS\_V2.5\_from\_V2.4\_Upgrade\_Workflow\_V2.0.xml

Owner:

shara01

Contains Parallel Steps:

No

Status:

In Progress

System of workflow definition file:

SHARPLEX.S2 (S2)

System:

SHARPLEX.S2 (S2)

Percent complete:

9%

Access(Learn More):

Public

Delete workflow on completion:

No

Workflow Steps

Actions

Search

All step content

No filter applied

Total: 204 Selected: 1

Return to Workflows

Refresh

Last refresh: Feb 22, 2022, 9:50:26 PM local time (Feb 23, 2022, 2:50:26 AM GMT)

## 6a. Do another step by yourself.

You know the basics now. Let's test your skills. Do another workflow step all by yourself (with the guidance below). This step you are doing will show off the capability to invoke a IBM Health Check for z/OS from within a workflow step and mark the step according to whether it was success (Complete) or an exception (Failed).

- a. Find **step 3.1.1.6 "Verify you have enough XCF groups and XCF group members"** in your workflow. You might have to do some untwisting to find it, but use the numbering scheme to help you find it. (Hint: step 3, step 3.1, step 3.1.1, step 3.1.1.5 – keep untwisting until you find 3.1.1.6.) Or you could filter on "XCF groups" in the title column
- b. Assign yourself to step 3.1.1.6. (Hint: start with the Actions drop down.)
- c. Accept step 3.1.1.6. (Hint: start with the Actions drop down.)
- d. Perform step 3.1.1.6. (There will be no questions to answer for this step.)
- e. What was the result of this health check associated with this step? (Hint: look at the output in **Status** under **SYSTSPRT**.)
  - If it was successful, did you see the step marked as Complete?
  - If it was an exception, did you see the step marked as Failed?

In general, for any Workflow, if you find that a step is failed, you'll need to fix the condition that made it fail, and re-run the step until it is Complete.

Usually, on this lab system, this health check completes successfully so you will see the workflow step marked as Complete.

You can continue to Assign → Accept → Perform other steps as you wish. In this specific Workflow, some steps invoke health checks and some do not. It depends on the step and what is related to that z/OS V2.5 Upgrade action.

It really is that easy as you know have the basics understood.

## Provide feedback to the workflow author!

Many times a workflow author might want to provide the capability for you to provide your feedback about his/her workflow. You can do that with the Feedback tab, once you're inside a workflow step, and you have **Accepted** the step. (The **Feedback** folder will be grayed out if the step isn't ready to be performed.)

We always welcome comments about your z/OS V2.5 Upgrade experience, and this is a great time to just that, as the step is fresh in your mind! Pick a step you have **Performed** (like Step 3.1.1.6).

The screenshot shows a web application titled 'Workflows'. The breadcrumb trail is 'Workflows > SHARA01 Upgrade Workflow Lab for z/OS V2.5 > 3.1.1.6. Verify that you have enough XCF groups and XCF group members'. The 'Feedback' tab is selected and highlighted in yellow. The page title is 'Properties for Workflow Step 3.1.1.6. Verify that you have enough XCF groups and XCF group members'. Below the tabs, the 'Title' is 'Verify that you have enough XCF groups and XCF group members' and the 'Description' is 'Verify that you have enough XCF groups and XCF group members'. The main content area has a 'Description' section with text about XCF services and space in the sysplex couple data set. Below this is an 'Information about this upgrade action' section with a table providing details about the upgrade action.

Information about this upgrade action	
The following table provides more details about this upgrade action. Use this information to plan your changes to the system.	
Element or feature:	Multiple.
When change was introduced:	General upgrade action not tied to a specific release.
Applies to upgrade from:	z/OS V2R4 and z/OS V2R3.
Timing:	Before installing z/OS V2R5.

- a. Click on the **Feedback** tab for any step in the workflow. If you want to give feedback on the step, answer any of the questions you like. **Save** will just save your results so you can add more later. **Submit** “turns in” your results and you cannot change your answers after they have been submitted.

Let’s **Submit** so we can see what we will gather later.

Workflows

Workflows » SHARA01 Upgrade Workflow Lab for zOS V2.5 » 3.1.1.6. Verify that you have enough XCF groups and XCF group members

**Properties for Workflow Step 3.1.1.6. Verify that you have enough XCF groups and XCF group members**

General Details Dependencies Notes Perform Status Input Variables Feedback

Please provide feedback for this workflow step by answering the question below.

1. Did you complete this step?

☒ Yes.

☐ No, not applicable. Skip to Comments.

☐ No, don't know if needed. Skip to comments.

☐ No, will defer to later. Skip to Comments.

☐ other:

2. How difficult was performing this upgrade action?

☒ Easier than expected

☐ More difficult than expected

☐ About what was expected

☐ other:

3. How would you best describe your experience with this upgrade action?

☒ Went smoothly, no problems.

☐ Experienced a low impact consequence. Use Comments below.

☐ Experienced a high impact consequence. Use Comments below.

☐ other:

Save
Submit

For this z/OS V2.5 Upgrade Workflow, the very last step of the workflow is asking about the overall z/OS release upgrade experience (Step 5, “**Provide feedback to IBM on your upgrade experience.**”). If you wish to provide your feedback on the entire z/OS upgrade experience, this the spot to do that. **Perform** (making sure to **Assign** and **Accept** the step) this last step 5. This step will also give you instructions on how to email all your feedback results to IBM, on the “**Review instructions**” location.

- b. Collecting your feedback to send to IBM. Once your feedback from all the steps is collected, you can then collect it to send back to IBM. This is easy to do. “**Return**

**to Workflows”** (at the bottom to exit from this z/OS V2.5 Upgrade Workflow, to return to the overall Workflow screen.) You are now back on the main Workflow screen. Make sure the workflow you want to collect feedback on is checked:

Workflows Help

Workflows

Simplifies tasks through guided step-based workflows, and provides administrative functions for assigning workflow responsibilities and tracking progress.

Actions Active

Search

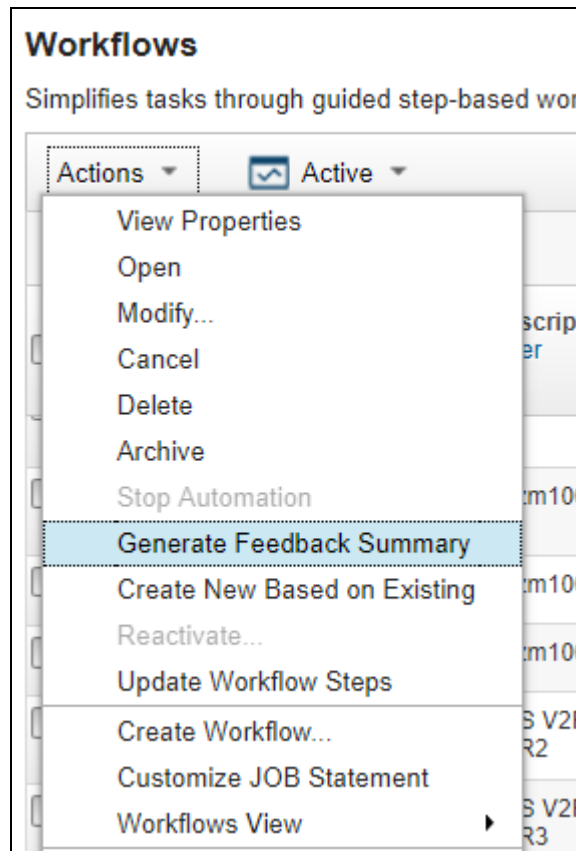
No filter applied

<input type="checkbox"/>	Workflow Name Filter	Description Filter	Version Filter	Vendor Filter	Access Filter	Owner Filter	System Filter	
<input type="checkbox"/>	SHARB21 Upgrade Workflow from zOS V2R4 - Workflow_0	zOS V2R5 Upgrade Workflow from zOS V2R4	2.0	IBM	Public	sharb21	SHARPLEX.S2 (S2)	
<input type="checkbox"/>	zOS V2R5 Upgrade Workflow from zOS V2R4 - Workflow_1	zOS V2R5 Upgrade Workflow from zOS V2R4	2.0	IBM	Public	sharb28	SHARPLEX.S2 (S2)	
<input type="checkbox"/>	ZCXINST1	Provision an IBM zOS Container Extensions Appliance Instance.	1.1.2	IBM	Public	vanwag	SHARPLEX.S2 (S2)	
<input type="checkbox"/>	HelloWorld	Sample Workflow	1	IBM	Public	hiren	SHARPLEX.S2 (S2)	
<input type="checkbox"/>	DeleteZFS	Delete ZFS	1	IBM	Public	hiren	SHARPLEX.S2 (S2)	
<input type="checkbox"/>	testHiren	In this workflow definition, a basic set of elements and properties is entered for you already.	1.0	IBM	Public	hiren	SHARPLEX.S2 (S2)	
<input checked="" type="checkbox"/>	SHARA01 Upgrade Workflow Lab for zOS V2.5	zOS V2R5 Upgrade Workflow from zOS V2R4	2.0	IBM	Public	shara01	SHARPLEX.S2 (S2)	

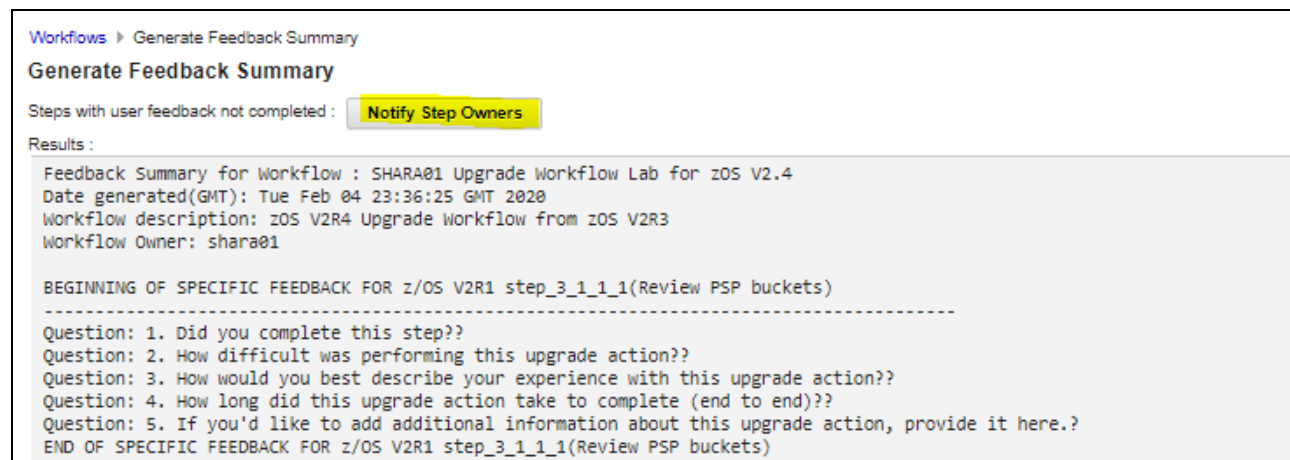
Total: 32 Selected: 1

Refresh Last refresh: Feb 22, 2022, 10:04:32 PM local time (Feb 23, 2022, 3:04:32 AM GMT)

c. Click Actions → Generate feedback summary.

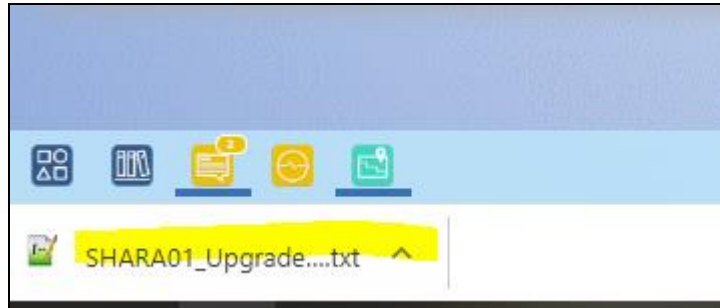


- d. You can now see everything that was collected in a simple readable text file. You can also notice that some step owners may not have completed feedback, and you can **Notify Step Owners** at this time. This will remind them to do feedback before you send the actual feedback to the Workflow owner.





- 
- e. Click on **Export** to put this data into a simple text file and it will be automatically downloaded to your workstation. You can edit this simple text file to remove any information you do not wish to share at this time. Click on it to see what it has gathered. Do you see your feedback from the steps you did **Feedback** on?



- f. Send back to IBM if you wish! We welcome your feedback!

Please clean up from your lab, as we like a tidy lab system 😊 Back on the Workflows main panel, select your Workflow, then select the Workflow and then **Actions-> Delete**. Thank you for tidying up.

## Exercise review and wrap-up

By completion of this lab, you now know how to:

1. Logon to z/OSMF. Enter into the Workflow function. You know what the Notification function is, and how to use it.
2. Create a z/OS V2.5 Upgrade Workflow within z/OSMF.
3. Look at some of the z/OSMF workflow functions, and generally how to maneuver around a workflow. Understanding the concept of states and steps (and sub-steps). Understand what the tabs for a step (z/OS upgrade action) are, and how they are used.
4. Assign steps (upgrade actions) to different users.
5. Accept the assignment of a step (upgrade action).
6. Perform a step (upgrade action).
7. Provide feedback for a workflow, and how to provide feedback for the entire release, if you like.

## End of exercise