IBM Digital Business Automation
Demos and Labs 19.0

Instructions for

Getting Started with DBA Demos and Labs 19.0

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Version: 1.2

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0 Introduction

Welcome to the IBM Digital Business Automation (DBA) Demos and Labs 19.0 series!

In an era of digitization and automation, our clients are looking for solutions that enable them on their journey to fully digitize and automate their entire End-To-End business processes, not just parts of it.

The IBM Automation Platform for Digital Business is an integrated platform of multiple automation capabilities that help business people drive virtually all types of automation projects at speed and scale. Many clients use just one or two offerings of the platform and are either not aware of the other capabilities, or of the synergies or potential that they can unleash by using the whole platform. Therefore they miss out on a huge opportunity to help digitize and automate all aspects of their business operations.

In this set of demos and labs, participants will gain hands-on insight into the capabilities of the IBM Automation Platform for Digital Business:

Capture	IBM Datacap
Content	IBM FileNet Content Manager
Workflow	IBM Business Automation Workflow
Tasks	IBM Robotic Process Automation with Automation Anywhere
Decisions	IBM Operational Decision Manager
Unified User Experience	IBM Content Navigator
Operational Intelligence	IBM Business Automation Insights

The demos and labs offer the ability to experience a platform scenario built around a Mortgage Application solution.

1. It includes the execution of the platform scenario demo from a business-users point of view providing the ability to experience the platform first-hand.

2. As a foundation, participants can use the Guided Walkthroughs to get initially introduced into the platform without any coding required.

3. Beyond that, participants can decide to implement a subset of the platform scenario or the entire platform scenario and gain development insight into one or multiple of the automation capabilities of IBM's Automation Platform for Digital Business.

4. In addition, participants have the option to install and configure parts of the infrastructure the platform scenario is built upon.

Having experienced the IBM Automation Platform for Digital Business hands-on with the backdrop of a real platform-wide business scenario will enable participants to understand the capabilities of the platform better. This will allow them to see beyond the scope of an individual capability that they may be familiar with. The demo and labs will help to create a different perception, unveiling the business potential and opportunities of the IBM Automation Platform for Digital Business.

0.1 Audience

Everyone interested in the IBM Automation Platform for Digital Business space.

0.2 Prerequisites

- Access to https://bluedemos.com with your IBM ID.
- Link to the **shared box folder:** https://ibm.box.com/v/DBADaL19-0MatForParticipants

0.3 Objectives

Understand the available demo and lab environments, get access and instructions on how to start and run the demo or how to work on the labs.

0.4 Version history

The initial version of these demos and labs was available on Blue Demos between August and November 2018. At this time all capabilities were on premises like.

The second version of these demos and labs was available on Blue Demos between November 2018 and June 2019. It came with enhancements like additional input channels (Email and web interface), a reworked Case solution, reworked RPA and ODM Sub-Scenarios, but still all on premises like.

This third version is now a Hybrid Cloud like scenario, where parts of the solution are running in DBAMC containers and other parts run on premises like. In addition, new Sub-Scenarios are added, like the BAI Sub-Scenario. This version is available on Blue Demos since June 2019.

1 Select your environment

IBM Digital Business Automation Demos and Labs 19.0 consists of one demo environment and ten lab environments:

- IBM Digital Business Automation Demos and Labs 19.0 - Demo 1 - Run the entire End-To-End Scenario (**demo environment** and environment for the **guided walkthroughs**)
- IBM Digital Business Automation Demos and Labs 19.0 - Lab 0 - Install & Configure Prerequisites of DBAMC
- IBM Digital Business Automation Demos and Labs 19.0 - Lab 1 - Install & Configure DBAMC
- IBM Digital Business Automation Demos and Labs 19.0 - Lab 2 - Administering IBM FileNet Content Manager Container
- IBM Digital Business Automation Demos and Labs 19.0 - Lab 3 - Implement the Datacap Sub-Scenario
- IBM Digital Business Automation Demos and Labs 19.0 - Lab 4 - Implement the Workflow Sub-Scenario
- IBM Digital Business Automation Demos and Labs 19.0 - Lab 5 - Implement the RPA Sub-Scenario
- IBM Digital Business Automation Demos and Labs 19.0 - Lab 6 - Implement the ODM Sub-Scenario
- IBM Digital Business Automation Demos and Labs 19.0 - Lab 7 - Implement the BAI Sub-Scenario
- IBM Digital Business Automation Demos and Labs 19.0 - Lab 8 - Implement the entire End-To-End Scenario
- IBM Digital Business Automation Demos and Labs 19.0 - Lab 9 - Install & Configure DBAMC & Implement the entire End-To-End Scenario

Select the environment fitting best to your current skill and current demands based on the following detailed description.

If you already know which scenario you want to work on, you can proceed with chapter Access Blue Demos and reserve your selected environment.

1.1 Demo 1 - Run the entire End-To-End Scenario

For running the demo of the Mortgage Application End-To-End Scenario by yourself, or for completing the Guided Walkthroughs, you must select demo environment **IBM Digital Business Automation Demos and Labs 19.0 - Demo 1 - Run the entire End-To-End Scenario**.

Running the demo means using the Mortgage Application from different end user perspectives. No coding is needed to initially set-up this demo.

The Demo 1 environment can be used to further get familiar with the End-To-End Scenario. Or you can use this environment in case you were not able to complete your selected lab and run the End-To-End demo with your own implementation.

In addition, if you like to build up foundational skill about IBM Automation Platform for Digital Business, use the Demo 1 environment to complete the Guided Walkthroughs.

Duration to run the demo: ~1 hour.
Duration for the Guided Walkthroughs: ~3 hours.

1.2 Lab 0 - Install & Configure Prerequisites of DBAMC

If you are interested in learning how to install and configure the prerequisites of IBM Digital Business Automation for Multicloud (DBAMC) version 18.0.2, you have to select lab environment **IBM Digital Business Automation Demos and Labs 19.0 - Lab 0 - Install & Configure Prerequisites of DBAMC**.

As part of this lab you will install and configure on top of three plain Ubuntu VMs IBM Cloud Private (ICP) version 3.1.0, two Docker-based OpenLDAP servers, IBM DB2 inside of ICP as a container, IBM Event Streams version 1.0.0 and Apache Hadoop version 2.9.2.

After completing Lab 0 you optionally can proceed with Lab 1 on top of your own ICP installation in the same lab environment.

Duration: ~6 hours.

1.3 Lab 1 - Install & Configure DBAMC

If you are interested in learning how to install and configure IBM Digital Business Automation for Multicloud (DBAMC) version 18.0.2 without installing the prerequisites, you have to select lab environment **IBM Digital Business Automation Demos and Labs 19.0 - Lab 1 - Install & Configure DBAMC**.

When selecting Lab 1 as your starting environment, you will on top of a pre-installed ICP install and configure DBAMC 18.0.2. This includes importing the DBAMC archive into ICP, creating multiple IBM Business Automation Configuration Containers (IBACC), creating an IBM Content Platform Engine (CPE) container, creating an IBM Content Navigator (ICN) container, creating an IBM Business Automation Insights (BAI) container and creating an IBM Operational Decision Manager (ODM) container. As part of that you will also configure the ODM event emitter to send events to the previously configured BAI. Afterwards you will configure the pre-installed IBM Business Automation Workflow (BAW) to also send events to BAI.

After completing Lab 1 you optionally can proceed with implementing the entire End-To-End Scenario on top of your own DBAMC installation.

Duration: ~10 hours.

1.4 Lab 2 - Administering IBM FileNet Content Manager Container

To learn how to administer the FileNet Content Platform Engine, with a special focus on administration of its container-based version, you have to select lab environment **IBM Digital Business Automation Demos and Labs 19.0 - Lab 2 - Administering IBM FileNet Content Manager Container**.

In Lab 2 you have the chance to experiment with some of the new features of FileNet Content Platform Engine and Content Navigator. You will also get introduced to important core concepts. For the new Features, you can get a firsthand experience on setting up External Sharing of Documents, and Recovery Bins. In addition you can experience the new Consistency Checker Sweep Job. On the core concepts, you will learn how to create new Object Stores and Storage Areas in the Container releases, and how to deploy entities between Object Stores.

Anytime during or after completing this lab, you will be able to run the End-To-End demo using the same Lab 2 environment.

Duration: ~5 hours.

1.5 Lab 3 - Implement the Datacap Sub-Scenario

For only implementing the Datacap Sub-Scenario of the Mortgage Application, you have to select lab environment **IBM Digital Business Automation Demos and Labs 19.0 - Lab 3 - Implement the Datacap Sub-Scenario**.

In the Datacap Sub-Scenario you will learn, how to process documents that arrive as images from a scanning unit or through other input channels like Emails or from a Web page. You will see how to extract data from them and feed them into ECM.

After implementing the Datacap Sub-Scenario you'll be able to run the demo by using your own Datacap implementation. All other pieces of the solution are already pre-implemented in **Lab 3**.

Duration: ~8 hours.

1.6 Lab 4 - Implement the Workflow Sub-Scenario

For only implementing the Workflow Sub-Scenario of the Mortgage Application, you have to select lab environment **IBM Digital Business Automation Demos and Labs 19.0 - Lab 4 - Implement the Workflow Sub-Scenario**.

Use the Lab 4 environment to learn how to create a Workflow Solution involving both Case and Process, how to integrate activities in the solution with RPA and with ODM and how to emit the Workflow business data to BAI.

After implementing the Workflow Sub-Scenario you'll be able to run the demo by using your own Workflow implementation. All other pieces of the solution are already pre-implemented in **Lab 4 - Implement the Workflow Sub-Scenario**.

Duration: ~12 hours.

1.7 Lab 5 - Implement the RPA Sub-Scenario

For only implementing the RPA Sub-Scenario of the Mortgage Application, you have to select lab environment **IBM Digital Business Automation Demos and Labs 19.0 - Lab 5 - Implement the RPA Sub-Scenario**.

Perform the RPA Sub-Scenario when you are interested in how a BPMN activity is implemented by a Robot task using the basic-integration approach. It is demonstrated how the Robot task is modeled, the skeleton for the implementation is derived and the RPA bot implementation is performed and finally tested.

After implementing the RPA Sub-Scenario you'll be able to run the demo by using your own RPA implementation. All other pieces of the solution are already pre-implemented in **Lab 5 - Implement the RPA Sub-Scenario**.

Duration: ~3 hours.

1.8 Lab 6 - Implement the ODM Sub-Scenario

For only implementing the ODM Sub-Scenario of the Mortgage Application, you have to select lab environment **IBM Digital Business Automation Demos and Labs 19.0 - Lab 6 - Implement the ODM Sub-Scenario**.

With the ODM Sub-Scenario, you will create two decision services required to automate some internal decisions used in the overall Mortgage Application solution. These services will be consumed by a Service Flow (part of the End-To-End Scenario and of the Workflow Sub-Scenario), by replacing the internal decisions with REST calls to the two decision services defined in this ODM Sub-Scenario.

After implementing the ODM Sub-Scenario you'll be able to run the demo by using your own ODM implementation. All other pieces of the solution are already pre-implemented in **Lab 6 - Implement the ODM Sub-Scenario**.

Duration: ~4 hours.

1.9 Lab 7 - Implement the BAI Sub-Scenario

For only implementing the BAI Sub-Scenario of the Mortgage Application, you have to select lab environment **IBM Digital Business Automation Demos and Labs 19.0 - Lab 7 - Implement the BAI Sub-Scenario**.

Use the Lab 7 environment to learn how to emit business data from Workflow and ODM to BAI, how to view and protect the data in BAI and how to create meaningful dashboards pertaining to the business data.

After implementing the BAI Sub-Scenario you'll be able to run the demo by using your own BAI implementation. All other pieces of the solution are already pre-implemented in **Lab 7 - Implement the BAI Sub-Scenario**.

Duration: ~8 hours.

1.10 Lab 8 - Implement the entire End-To-End Scenario

For implementing the entire End-To-End Scenario of the Mortgage Application, you have to select lab environment **IBM Digital Business Automation Demos and Labs 19.0 - Lab 8 - Implement the entire End-To-End Scenario**.

As part of this lab you will first implement the Datacap Sub-Scenario, followed by the ODM Sub-Scenario, the Workflow Sub-Scenario, the RPA Sub-Scenario and finally the BAI Sub-Scenario.

After implementing the entire End-To-End Scenario you'll be able to run the demo by using your own implementation.

Duration: ~4 days (highly depends on your existing skill and your speed).

1.11 Lab 9 - Install & Configure DBAMC & Implement the entire End-To-End Scenario

In case you want to complete all labs previously explained, you have to select lab **IBM Digital Business Automation Demos and Labs 19.0 - Lab 9 - Install & Configure DBAMC & Implement the entire End-To-End Scenario**. This lab has lab instructions only, and re-uses the same environment provided either for Lab 0 or Lab 1.

When you select Lab 9 you will install and configure almost all the software needed and implement on top of your own installation the entire End-To-End Scenario.

After implementing the entire End-To-End Scenario you'll be able to run the demo by using your own installation and implementation.

Duration: ~5-7 days (highly depends on your existing skill and your speed).

Now that you have selected your scenario (Demo 1 or Lab 0-9), continue to read chapter Access Blue Demos and reserve your selected environment.

2 Access Blue Demos and reserve your selected environment

Now that you have selected your environment, the next steps are to access Blue Demos, reserve and access your selected environment and get some further tips on how to work with your environment.

1. To **access Blue Demos** open: https://bluedemos.com/

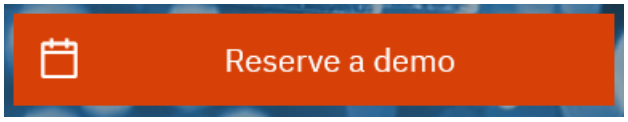
2. To sign-in, either **use your IBM ID or your company credentials** if SSO is set up between your company and IBM. For example, if you have an IBM W3 or IBM Partnerworld ID, you should use this ID.

   Note: Dependent of the IBM ID used to sign-in, you will be able to reserve a demo or not. If you can't reserve a demo with the current IBM ID, check if you have another IBM ID that is enabled for Blue Demo reservations. IBM Business Partners do require the appropriate competency, see also https://www-356.ibm.com/partnerworld/wps/servlet/mem/ContentHandler/partnerworld-program-competencies

3. Once signed in, **open the Blue Demo based on your selection** in the previous chapter:

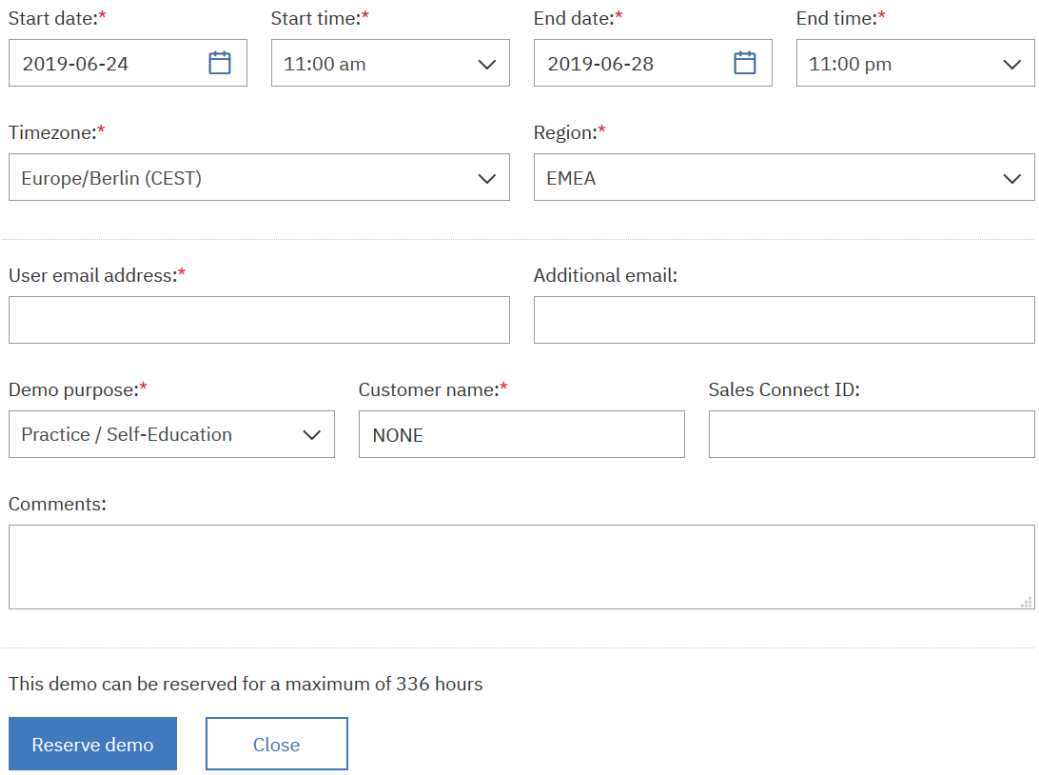
Demo 1:	https://bluedemos.com/show/2734
Lab 0:	https://bluedemos.com/show/2735
Lab 1:	https://bluedemos.com/show/2736
Lab 2:	https://bluedemos.com/show/2761
Lab 3:	https://bluedemos.com/show/2762
Lab 4:	https://bluedemos.com/show/2767
Lab 5:	https://bluedemos.com/show/2776
Lab 6:	https://bluedemos.com/show/2777
Lab 7:	https://bluedemos.com/show/2737
Lab 8:	https://bluedemos.com/show/2778
Lab 9:	https://bluedemos.com/show/2735 (for starting with Lab 0), or https://bluedemos.com/show/2736 (for starting with Lab 1)

4. Click **Reserve a demo**.

   Note: If you don't see this button, go back to step 2.

5. Provide the necessary information and click **Reserve demo**.



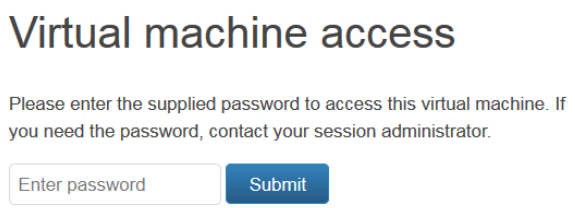
6. After you click **Reserve demo** you'll get two emails, the second one once your reservation is **active** according to the information provided in step 5. This second email does also contain the link and password to access your demo environment.

Reservation Confirmation
IBM Blue Demos

<your-name> (<your-email>)
Demo: <your-demo>
06/24/2019 - 06/28/2019 11:00 AM CEST - 11:00 PM CEST

Your reserved demo has started. Use your web browser to access the demo at the following link.
https://cloud.skytap.com/vms/945124a67d1301019b9909b6ab14d50d/desktops
Password: <your-password>

7. Open the link and enter your password to access your environment. Click **Submit**.



8. Your demo and lab environment opens.

   Note: Some of the environments contain tar balls required to install the software. It is forbidden to transfer these tar balls outside of the lab environments.

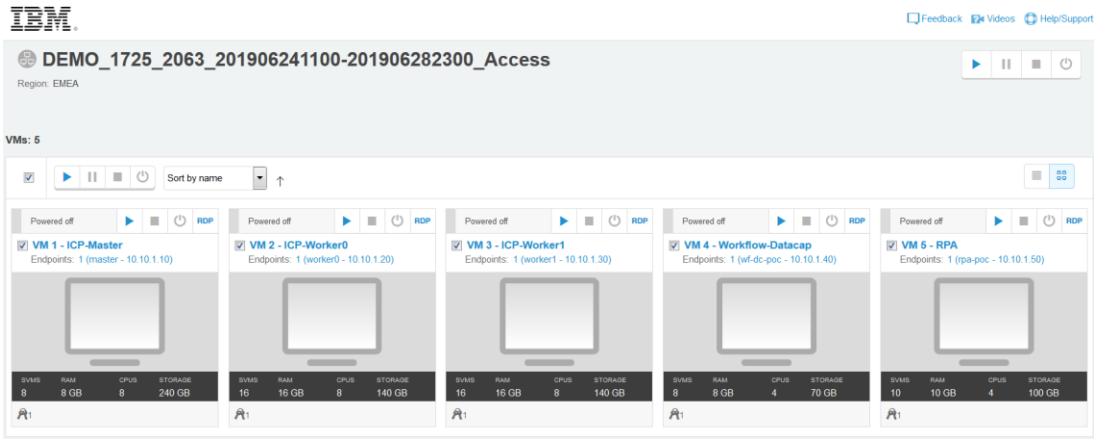
   If you are not working with your environment for a longer period, you have to **do a clean shut down of your environment**. If you don't do so, after a certain period of inactivity your environment will be shut down automatically. Under some circumstances this can cause issues when you try to restart it. Therefore always make sure to perform a clean shut down. You will get detailed instructions on this later in this document.

Now that you have your demo and lab environment available, learn How to work with your environment and the VMs before you start with the selected Sub-Scenario.

3 How to work with your environment and the VMs

You have selected an environment and reserved it on Blue Demos. This chapter introduces you into the rules and options how to work with your environment. Please read it carefully to avoid issues while working on the demo or labs.

1. Open your demo lab environment from the email received with a Browser on your local machine. It will look similar to the following picture:



2. Your environment consists of the following VMs:

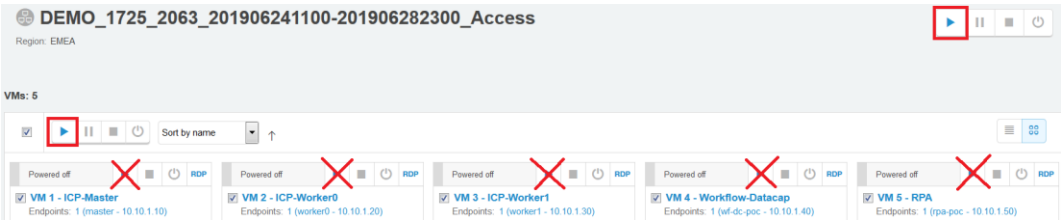
   VM 1 – ICP-Master: On this Ubuntu VM the ICP master, management, proxy and other ICP services are running or will be installed when starting with Lab 0 or Lab 9. In addition the LDAP Docker containers and Apache Hadoop are running on VM 1 or will be installed there. VM 1 does not have a desktop.

   VM 2 – ICP-Worker0 and **VM 3 – ICP-Worker1**: These Ubuntu VMs the ICP worker nodes are running or will be installed where ICP will run any containers installed on top of ICP. These are the DB2 container, IBM Event Streams, IBACC containers, CPE container, ICN container, BAI container and ODM container. VM 2 and VM 3 do not have a desktop.

   VM 4 – Workflow-Datacap: On this Windows VM the BAW and Datacap are installed. In addition, VM 4 hosts further servers and tools needed while the labs, for example Browsers, PuTTY, ICP Command Line Tools, an Email Server, an Email client, FileNet Deployment Manager, ODM Rule Designer and others.

   VM 5 – RPA: This VM hosts the RPA Bot Designer and RPA Bot Runner.

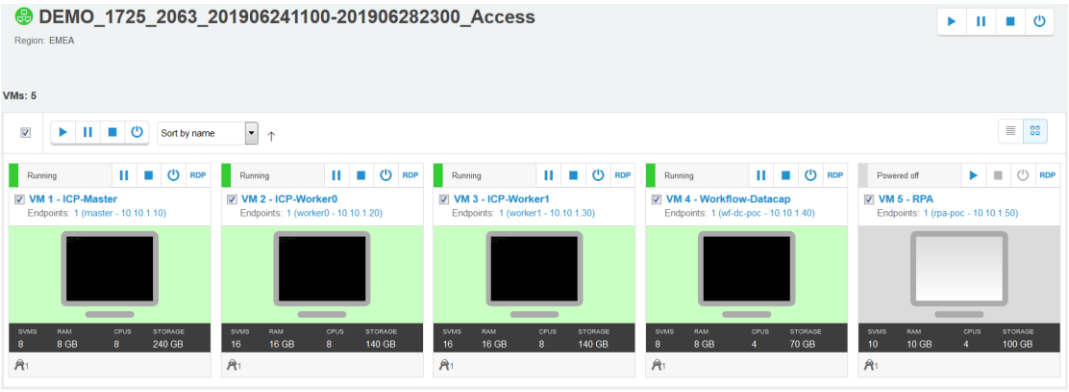
3. All VMs are initially in **Powered off** state. To start the VMs in your environment in the correct order and with the needed delays, click one of the two **Run VM(s)** buttons. Do **NOT** use the **Run this VM** buttons.



It will take a while until your environment fully starts.

When you selected Demo 1 or Lab 5, all VMs will be started. When you selected any other lab, all VMs except VM 5 will be started. If needed, you will get instructed in the lab instructions on how to run VM 5.

Wait until the VMs are in **Running** state.



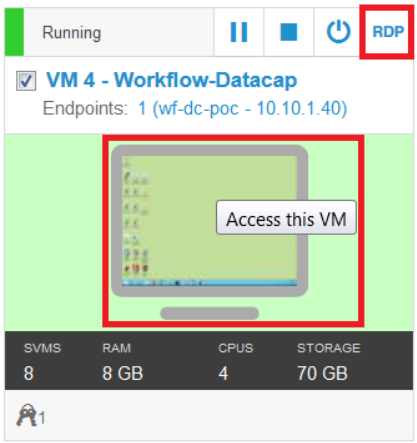
4. Access the desktop of VM 4 or VM 5:

    a. either through the **Browser in the same tab** by clicking on the picture of the monitor (**Access this VM**),

    b. or through the **Browser in a new tab** by right-clicking on the picture of the monitor and opening the link in a new tab,

c. or by clicking **RDP** to connect to it by using a Remote Desktop Connection tool. This downloads a RDP file to your local machine that can be opened to view the desktop.

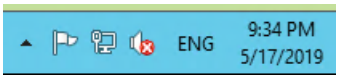
Note: Depending on the security settings of your local machine you will or will not be able to use RDP. In case RDP does not work, use your Browser to access the desktop.



5. When you access the desktop of a VM and there is a blue bar on the right-hand side, click there **No**.

6. When you access the desktop of VM 4 and there is still a command line window open where the BAW environment is currently still starting, do not close that window.

7. Next, make sure the VM is **correctly connected to the network** before you proceed using it. Check that the network icon at the bottom of the desktop shows connected. If the VM is not correctly connected to the network before you use it, this might lead to communication issues between the products running on the involved VMs.

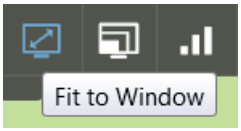


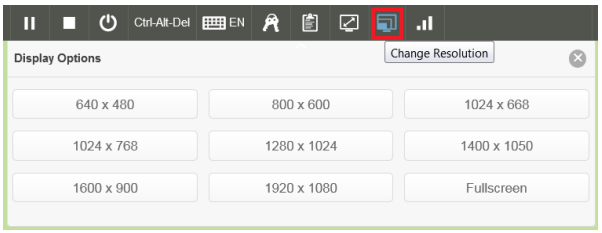
Connected:  (Not connected: )

8. Change the resolution of the desktop to your liking. When you accessed the desktop by using:

   a. **RDP**, **right click on the desktop**, select **Screen resolution** and update the resolution accordingly.

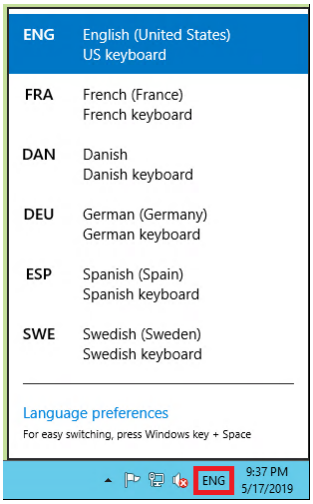
b. your **Browser**, click the **Fit to Window** icon or the **Change Resolution** icon on the top of the VM's desktop.



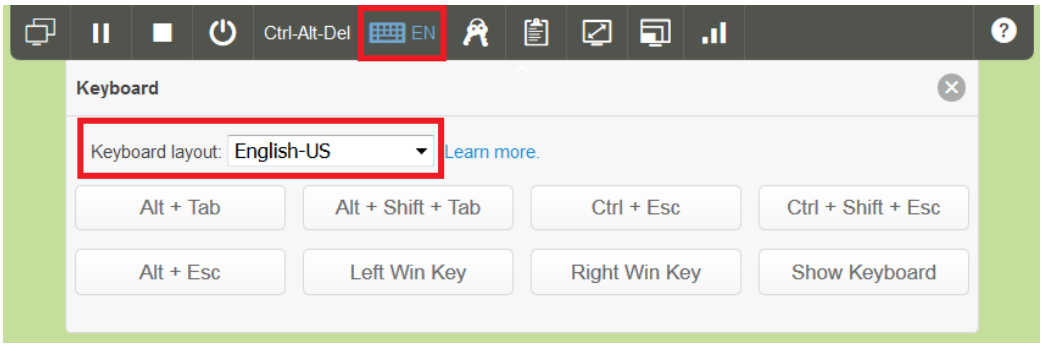


9. To change the keyboard to your liking:

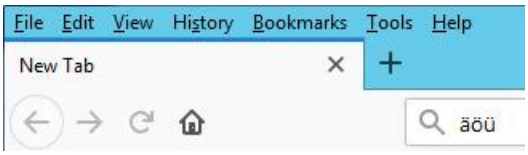
a. Click the **ENG** icon **at the bottom of the desktop** and select your preferred keyboard.



b. When you accessed the **desktop by Browner**, you **in addition** have to **select the same keyboard on the top bar**. Make sure that you configure the same keyboard in both places.



c. To check that your keyboard works as expected, open Firefox and enter in the URL field some special characters of your language.



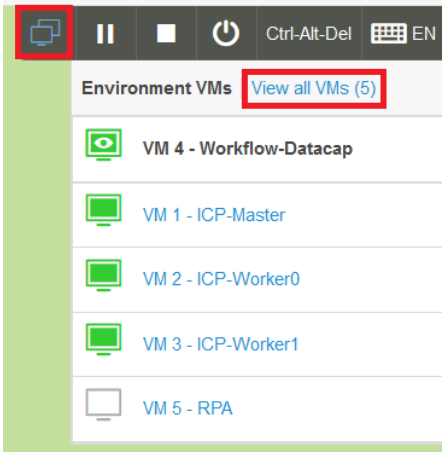
10. To **disconnect from a VM**:

    When you opened the desktop

    a. through RDP, simply **close the Remote Desktop Connection** tool.

    b. through your Browser in a new tab, simply **close the tab**.

    c. through your Browser in the same tab, click the **Environment VMs** icon on the top, and select **View all VMs (5)**.



11. This brings you back on the screen showing your lab environment where you now could connect to another VM.

    Note: The **Windows username / password** for each Windows VM is **Administrator / passw0rd** (sixth character is a zero). Enter it in case you get prompted for it.

    Note: The **Ubuntu username / password** for each Ubuntu VM is **root / passw0rd** (sixth character is a zero). Enter it in case you get prompted for it.

12. As part of the demo or labs you very often need to **copy and paste text from the lab instructions into one of the VMs**. There are multiple options available for this, but there are only two options available that ensure the text is copied as intended.
This is in particular important when copying commands. Some of the commands you need to execute are pretty long. To enable you to read them in the lab instructions, a font size is used that results in that the command is shown in the lab instructions in multiple lines. Here is an example picture from the exercise in Lab 1 where you deploy the BAI container:

    116. Retrieve the **Business Automation Insights Helm chart** by executing the following command (one line, **no space character** where you see the line break).

    ```
    docker run -v "$(pwd)":/mnt cloudcluster.icp:8500/default/bai-
    ibacc-job:18.0.2 cp ../../product-helm-charts/bai.tar.gz /mnt
    ```

    Copying such a command by using the wrong approach can result in adding unintended line breaks or spaces. As a result, the command will not work. To avoid this, **use one of these two options**:

    a. **Download the lab instructions onto VM 4 or VM 5**. For this, Firefox and Chrome in VM 4 and VM 5 do have bookmarks to the shared box folder from where you can download the PDFs. Open the lab instructions within VM 4 or VM 5 with Adobe Acrobat Reader. Copy (Ctrl+c) the commands from there and paste (Ctrl+v) them into your command window.

    b. Optionally, when you are able to open the desktop through **RDP** and you have **Adobe Acrobat Reader** installed on your local machine, download the lab instructions onto your local machine and open them with Adobe Acrobat Reader. Copy the commands from the PDF and paste them into your command window in the Remote Desktop Connection.

13. If you are not working with your environment for a longer period of time, **use this procedure to perform a clean shut down**:

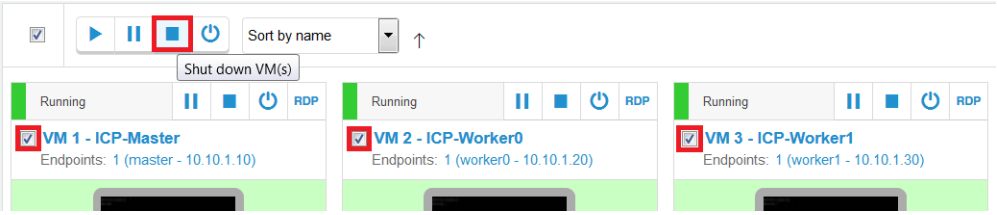
    a. If VM 5 is running, connect to the desktop of VM 5. If the **RPA bot is running, stop it**. Close all **Automation Anywhere applications**. Then, **power off VM 5**.

    b. Connect to the desktop of VM 4. **Double-click these shortcuts on the desktop to stop the BAW environment** (you can stop the three JVMs in parallel):
        - Stop Server
        - Stop Node
        - Stop DMGR

c. Wait until all JVMs are stopped (the command line windows will automatically disappear). Then, **power off VM 4**.

d. To ensure your ICP environment is and remains healthy, **do not suspend these VMs, always power them off**. Always power them off together. Power them off only, when the BAW environment is stopped or VM 4 is in Powered off state. Powering those VMs off and on can take up to 20 minutes. **Resolving the issues that can occur when you suspend these VMs can take hours.** Note that customer ICP environments are usually not powered off and on.

e. On the screen showing your lab environment make sure all **VMs 1, 2 and 3 are selected** and VM 4 and 5 are not selected. Then hit the **Shut down VM(s)** button:



14. When you require your environment again, **use this procedure to start it**:

a. For all lab environments **VM sequencing** is enabled. This is required to make sure the environment starts in the correct order when you restart it. For example, BAW is configured against the LDAP running on VM 1, VM sequencing will make sure that VM 1 is started before VM 4 is started.

b. Starting ICP can take a longer time. To make sure you use ICP only after it has fully started, **VM 4 starts 10 minutes after VM 1, 2 and 3**. This is a long time, but ensures that on the ICP VMs everything has been started before the BAW environment starts and you can access the ICP environment.

c. On VM 1, 2 and 3 all servers and services needed will be **started automatically** when powering on those VMs. Always power them on together. Best approach is to make use of the VM sequencing functionality.

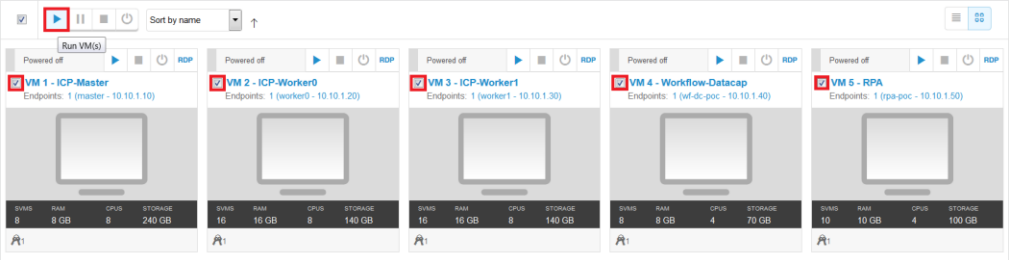
d. When powering on VM 4 or VM 5 user **Administrator** will be **automatically logged in**.

e. On VM 4 all servers and services needed will be **started automatically** when user Administrator logs in. In Lab 0 and Lab 1 environments the BAW environment will not be started automatically. Automatic start of the BAW environment will be configured at the end of Lab 1. In all other environments the BAW environment automatically starts when user Administrator logs in. When you **connect to VM 4 and the command window where the BAW**

environment still starts is still open, do not close it. Once the BAW environment has fully started, the command window will automatically disappear.

f. On VM 5 the RPA bot is not automatically started. If you need the bot running, start it manually as described in the lab instruction, for example in the Demo 1 or Lab 5 lab instructions.

g. **To start your environment open the screen showing your lab environment**, make sure all VMs are selected and hit the **Run VM(s)** button.



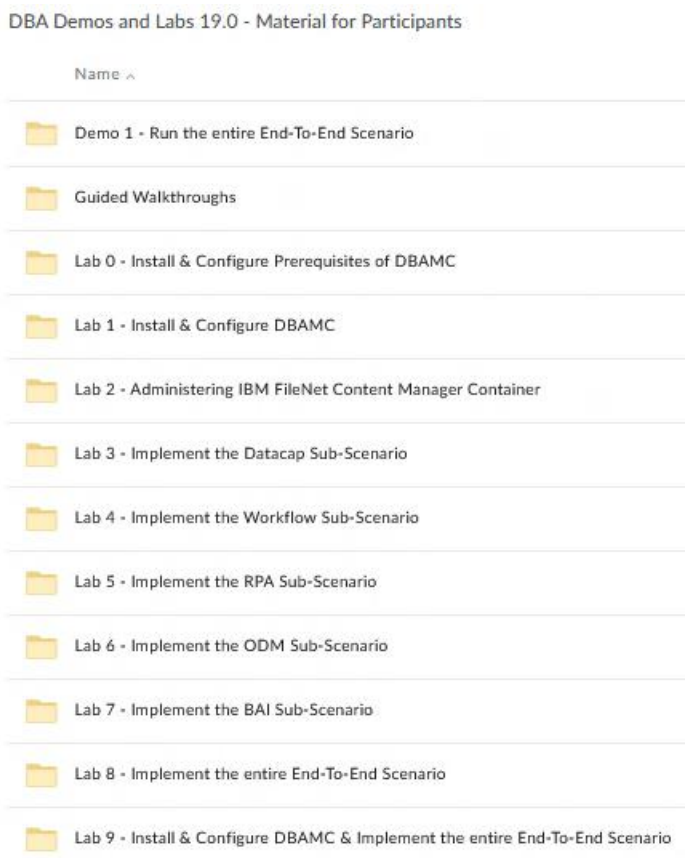
h. Wait until all VMs needed are in **Running** state. When you started with a Demo 1 or Lab 5 environment, all five VMs will be started by VM sequencing. When you started with any other environment, VM 5 will not be started automatically. When VM 5 is needed running, power it on manually.

In case of issues with your environment or the VMs, also check the Troubleshooting chapter.

You have now selected your environment and reserved it on Blue Demos. You have accessed that environment and learned the rules and options how to work with your environment and the VMs. Therefore it's now time to start working on your demo or lab.

For this:

1. Open the **shared box folder** https://ibm.box.com/v/DBADaL19-0MatForParticipants



2. If you want to build up foundational skill first and you have selected the Demo 1 environment, open sub-folder Guided Walkthroughs and continue to read the lab instructions document found in that folder.

3. Open the sub-folder of your selected demo or lab and continue to read the lab instructions document found in that folder.

4 Troubleshooting

The demo team will continuously update this chapter with new hints and tips as new issues are found that are related to your demo and lab environment or general issues when working with the VMs. Therefore in case of issues, make sure to open the latest version of this document from the shared box folder.

In case the given solution does not help you or you experience a new issue, please contact one your demo owner.

4.1 VM 4 does become slow or unresponsive

Especially while working with BAW it might happen that VM 4 does become slow or even unresponsive. In that case it is recommended to restart VM 4. While you are restarting VM 4, all other VMs can remain running.

4.2 General issues with your lab environment

I have restarted my VM, it's not reported as Running. What can I do?

- Refresh your local Browser window / tab showing your demo and lab environment.
- If this does not help, close all Browser windows and open your environment again.

I have restarted my VM, there are no icons shown besides Running. What can I do?

- Refresh your local Browser window.

I have issues with my keyboard, I can't enter special characters. How to resolve?

- Make sure you have configured the correct keyboard.
- When you access the desktop of a VM through the Browser, you need to configure the keyboard twice (see above for details).
- Make sure you have selected the same keyboard on both places.

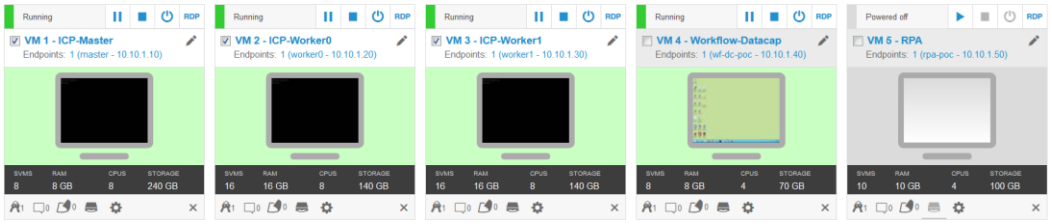
I have an issue with my control key when working on the desktop of a VM. How to resolve?

- Try to press the control key multiple times.

4.3 ICP Dashboard does show only one or two active nodes

One of the lab environment verification steps is to verify all nodes are active. If only one or two nodes are active, follow these steps to resolve this issue.

1. View your **lab environment** and verify that **VM 1, 2 and 3 are running**.



2. If one or two of the VMs are not running, **deselect all other VMs** and hit the **Run VM(s)** button to power up those VMs together. Wait until the Dashboard shows three active Nodes.

3. If all VMs are running, but the Dashboard does not show three active Nodes, the only other option is to **perform a clean shut down of your lab environment** as described earlier in this document. Remember to stop the BAW environment on VM 4 before powering down VM 4. Once all VMs are in Powered down state, make sure all VMs are selected and hit the **Run VM(s)** button to start the environment by using the pre-configured VM sequencing. Once your lab environment has fully started again, re-start with the verification steps, from where you were routed to here, again.

4.4 ICP Dashboard does show unexpected number of unhealthy deployments

One of the lab environment verification steps is to verify the number of healthy deployments on the ICP Dashboard.

1. If you started with Lab 0 and have not yet restarted your lab environment, it is expected that all deployments are healthy. If this is not the case, one of your deployments was not successful. In that case, go back to the Exercises you just completed and make sure you have completed them as intended.

2. If you started with Lab 0 and already have IBM Event Strems deployed and have re-started your lab environment after the Event Streams deployment, it is expected that you have one unhealthy deployment.

3. If you started with any other lab environment, it is expected that you have one unhealthy deployment.

4. If you have not re-started your environment since registering for it, one of your deployments was not successful. In that case, go back to the Exercises you just completed and make sure you have completed them as intended.

5. In all other cases it is recommended to re-start your environment again. For this, carefully follow the instructions you can find in an earlier chapter of this document.

4.5 IBM Event Streams System is not healthy

Follow these steps to resolve this issue:

1. In the **IBM Event Streams UI** click on the **Status indicator** in the bottom-left corner.

2. Expand the component that is not healthy, for example **Kafka brokers**.

3. Click on the **Pod x** entry that is not running. This opens the ICP console in a new browser tab.

4. In the ICP console, go **one level up**. On that page at the bottom you see all pods of this component.

5. For each pod that is not fully ready yet (for example it's showing 3/4 in the column Ready) hover over the pod and **click on the thee dots icon** on the left. Select **Remove**. In the confirmation dialog select **Remove Pod**.

6. ICP will now remove the pod and create a new one. Wait until the new pod is **Running** and **Ready**. For kafka broker pods, this can take up to five minutes.

4.6 Opening the Apache Flink Web Dashboard results in message "Service temporarily unavailable due to an ongoing leader election. Please refresh."

Follow these steps to resolve this issue:

1. Open in a new Browser tab bookmark **ICP/BAI → IBM Cloud Private**.

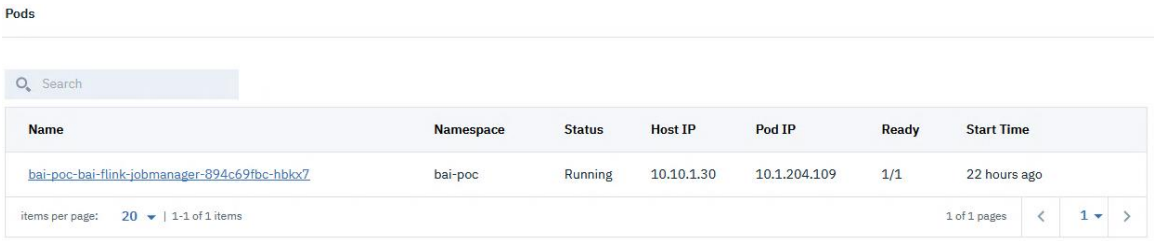
2. Log-in using **admin / passw0rd** if not pre-populated.

3. In the ICP **Menu**, open menu entry **Workloads → Deployments**.

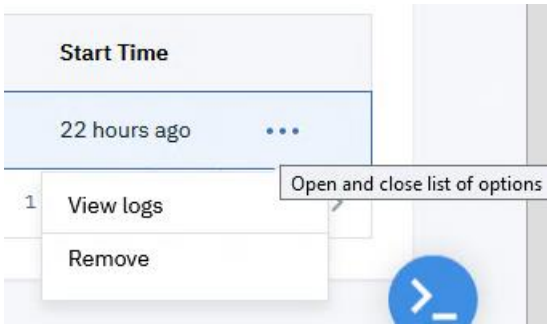
4. In the list of deployments search for **bai-poc-bai-flink-jobmanager**.

5. Click on **bai-poc-bai-flink-jobmanager**.

6. On the bottom of the page that opens view the **Pods** section.



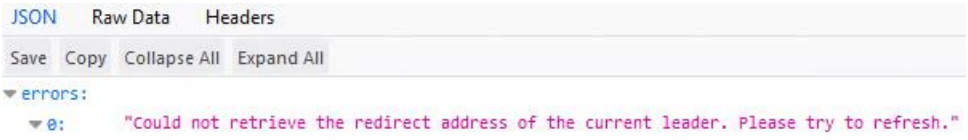
7. Hover with your mouse over the entry in that list, at the end an **icon with three dots** does occur. Click on this icon and click **Remove**.



8. In the confirmation dialog click **Remove Pod**.

9. ICP will now remove the pod and create a new one. Wait until the new pod is **Running** and **Ready**.

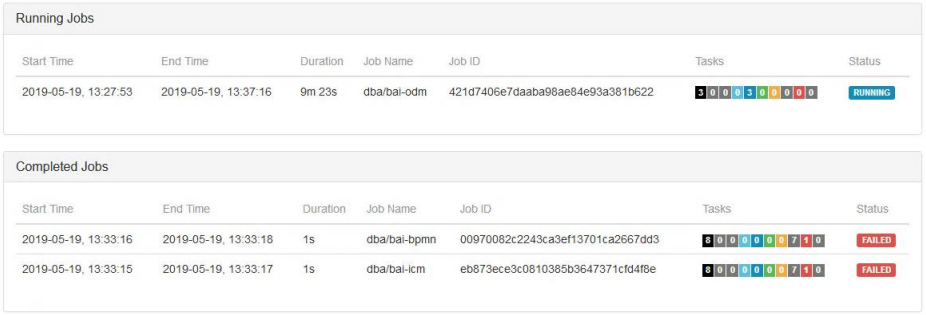
10. Re-try to open the **Apache Flink Web Dashboard**. If you get the following message, refresh the Browser page until the dashboard opens.



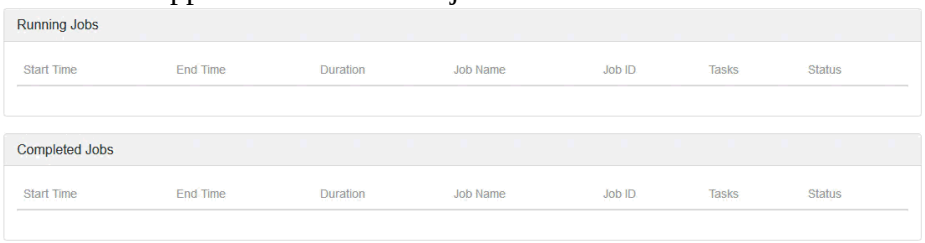
11. Return to the lab instructions from where you got routed to here.

4.7 Apache Flink Web Dashboard does not show three running jobs

When opening the Apache Flink Web Dashboard it can happen that it does show failing jobs:



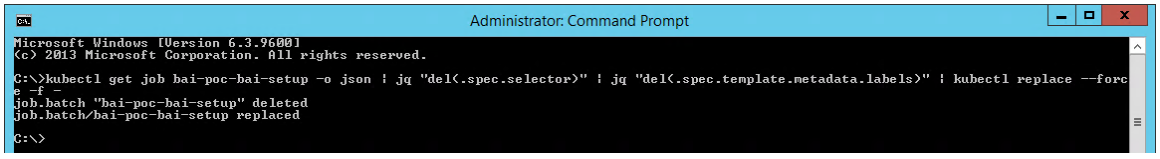
It also can happen that it shows no jobs:



Follow these steps to resolve this issue:

1. Open a new Windows command line window and use this command (one line, **one space character** where you see the line breaks):

   ```
   kubectl get job bai-poc-bai-setup -o json | jq
   "del(.spec.selector)" | jq "del(.spec.template.metadata.labels)"
   | kubectl replace --force -f -
   ```



2. Wait for a couple of minutes, then use this command to verify the setup job is ready again:

   ```
   kubectl get jobs
   ```

   ```
   C:\>kubectl get jobs
   NAME                DESIRED   SUCCESSFUL   AGE
   bai-poc-bai-bpmn    1         1            23h
   bai-poc-bai-icm     1         1            23h
   bai-poc-bai-odm     1         1            23h
   bai-poc-bai-setup   1         1            3m
   ```

3. If you can see for **bai-poc-bai-setup** in the last row **one** successful job, you can continue, otherwise repeat step 2.

4. Use these three command to restart the other three jobs (one line for each command, **one space character** where you see the line breaks):

   ```
   kubectl get job bai-poc-bai-bpmn -o json | jq
   "del(.spec.selector)" | jq "del(.spec.template.metadata.labels)"
   | kubectl replace --force -f -

   kubectl get job bai-poc-bai-icm -o json | jq
   "del(.spec.selector)" | jq "del(.spec.template.metadata.labels)"
   | kubectl replace --force -f -

   kubectl get job bai-poc-bai-odm -o json | jq
   "del(.spec.selector)" | jq "del(.spec.template.metadata.labels)"
   | kubectl replace --force -f -
   ```

   ```
   C:\>kubectl get job bai-poc-bai-bpmn -o json | jq "del(.spec.selector)" | jq "del(.spec.template.metadata.labels)" | kubectl replace --force
   -f -
   job.batch "bai-poc-bai-bpmn" deleted
   job.batch/bai-poc-bai-bpmn replaced

   C:\>kubectl get job bai-poc-bai-icm -o json | jq "del(.spec.selector)" | jq "del(.spec.template.metadata.labels)" | kubectl replace --force
   -f -
   job.batch "bai-poc-bai-icm" deleted
   job.batch/bai-poc-bai-icm replaced

   C:\>kubectl get job bai-poc-bai-odm -o json | jq "del(.spec.selector)" | jq "del(.spec.template.metadata.labels)" | kubectl replace --force
   -f -
   job.batch "bai-poc-bai-odm" deleted
   job.batch/bai-poc-bai-odm replaced
   ```

5. Rerun command `kubectl get jobs` until all jobs are **successful**.

6. Go back to the **Apache Flink Web Dashboard** and verify that all three jobs are now running.

7. Return to the lab instructions from where you got routed to here.