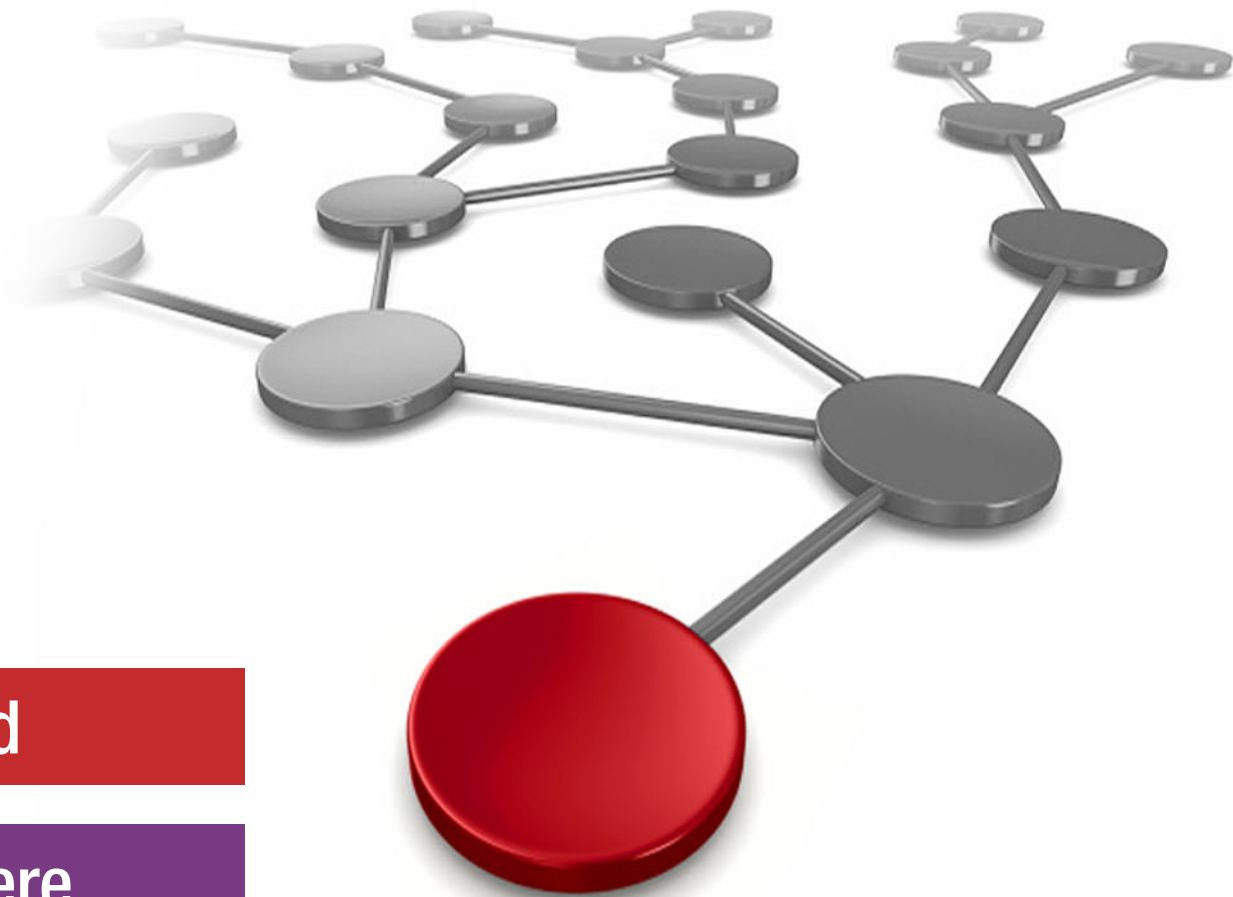


Working with IBM Business Process Manager on Cloud for Basic Daily Operations

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 Cloud

WebSphere

Working with IBM Business Process Manager on Cloud for basic daily operations

IBM® Business Process Manager on Cloud is an IBM subscription-based software as a service (SaaS) solution for IBM Business Process Manager (BPM) capabilities. BPM on Cloud provides secure and scalable operating environments that allow for development, testing, and execution of BPM projects. As a BPM on Cloud customer, you will work with the IBM BPM on Cloud team to achieve your goals.

This IBM Redbooks® Solution Guide enhances your awareness that some common operational activities include responsibilities from you as well as from the IBM BPM on Cloud team. This guide focuses primarily on the activities surrounding the BPM on Cloud (Management) portal and service requests for product support.

This guide is a companion document to *IBM Business Process Management Operations Guide*, SG24-8356, which is available at:

<http://www.redbooks.ibm.com/abstracts/sg248356.html>

In a successful overall solution, some activities are the responsibility of BPM on Cloud, some activities are the responsibility of the customer's users, and many activities require collaboration, as illustrated in Figure 1.

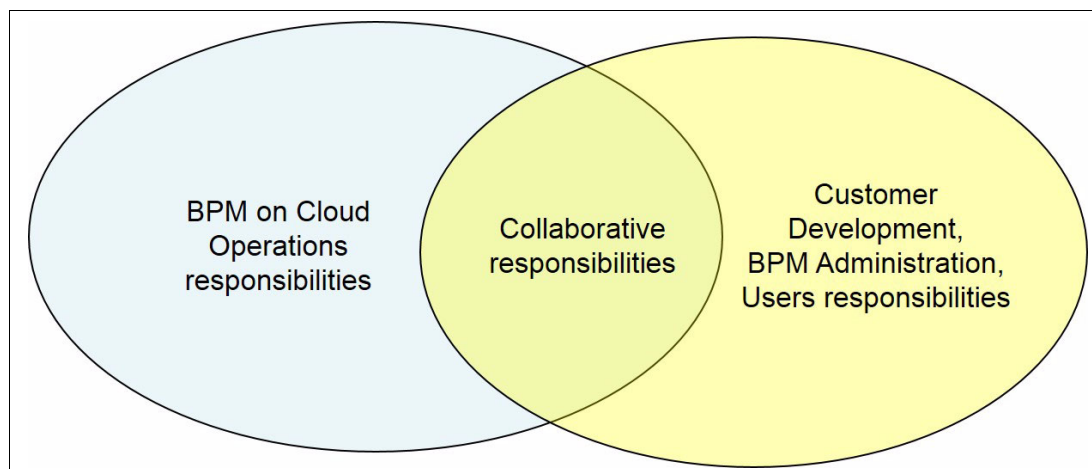


Figure 1 Successful overall solution, activities, and responsibility

Did you know?

BPM on Cloud provides BPM environments for you to use for your development, testing, and runtime utilization. You are unburdened from having to install the BPM product, configure the product runtimes and databases, and perform product maintenance. This freedom allows you to focus on the management of your business process applications and instances, including development and deployment. However, there are situations in which your business process management activities directly impact your BPM environment maintenance or other operational activities, and vice-versa.

Business value

BPM on Cloud speeds time to value because it is ready to use almost immediately for pilot projects, development, and testing. You can put your BPM developers to work right away to create process applications. In addition, your BPM administrators and testers can start working with your snapshots in Test and Run environments.

BPM on Cloud provides the IT infrastructure used by the BPM product and performs the BPM product installation and configuration for runtime environments.

Your process assets, such as your process applications, are portable between IBM BPM on-premise and an IBM BPM on Cloud subscription. This portability is especially useful in hybrid solutions, such as using BPM on Cloud for development and unit testing and then pulling those assets to your own on-premise data center for system test and production use.

The purpose of this guide is not to sell the virtues of BPM on Cloud itself. Rather, the purpose is to help you to understand how to maximize the long-term success of using BPM on Cloud by weeding out common incorrect assumptions and emphasizing good behaviors. Being aware that there are necessary BPM activities in addition to, and impacting, your BPM on Cloud environment operational and maintenance activities and understanding who is responsible for various actions can speed up the execution of those actions.

Good practices might ultimately save time and effort by catching issues early or by preventing situations that can build up to become problems.

Solution overview

The roles within the business process management discipline are well known and are consistent between a BPM on-premise solution versus a BPM on Cloud solution. The difference in a BPM on Cloud solution is that the SaaS offering provides a part of the overall solution.

Additional resources: For an additional general overview of business process management, consult the following resource:

- ▶ *The Process Architect: The Smart Role in Business Process Management*, REDP-4567
- ▶ *Scaling BPM Adoption: From Project to Program with IBM Business Process Manager*, SG24-7973

Let's start with a basic overview of activities that are squarely in the domain of BPM on Cloud versus activities that belong to you, your business sponsor, business users, business process management administrators, testers, or developers and architects. This guide then expands into detail for activities that require additional teamwork between these roles.

BPM on Cloud provides the following capabilities:

- ▶ IT infrastructure, including host machines, database for BPM product infrastructure use, web server for routing, and LDAP
- ▶ BPM product installation and default product configuration and initial product configuration
- ▶ Applying product maintenance and fixes to infrastructure components (including OS, Database, IBM WebSphere® Application Server, BPM, and so forth)

You, your business sponsors, business users, business process management administrators, testers, or developers provide the following services:

- ▶ Your *business sponsor* is the corporate entity that provides the funding and the overall corporate decision to use IBM Business Process Manager in your implementation of the business process management discipline. In the cases of successful customers, the business sponsor or sponsors are aligned with the corporation's Business Process Management Center of Excellence.
- ▶ Your *business users* are your end users. It is generally expected that these users have no knowledge of the business process management infrastructure and are focused on their own knowledge domain. They just want to use the tools (such as Coaches) that you are providing to them so that they can do their jobs. It is also expected that they will work with you to help your developers define objects with the correct details and processes with the correct actions for the correct teams.
- ▶ *BPM administrators* are responsible for a number of actions, including the enablement of developers, testers, and users to have success in your business process management implementation. These enablement tasks typically include administration of teams and process applications, promotion of process applications, and administration of process instances.
- ▶ *Test teams* are responsible for understanding process applications, for understanding the technical behavior of process applications under certain conditions (such as heavy load), and for creating and executing test scenarios that will properly exercise process applications in this runtime.
- ▶ The *development team* is responsible for understanding good coding practices with IBM Business Process Manager, for writing clean, well-documented code, and for executing useful unit testing on that code.
- ▶ The *BPM architect* is responsible for understanding process applications, the technical behavior of process applications, and the interactions it might have with services it calls. The BPM architect's work should include design documentation, as this documentation can help development teams to focus on delivering code that meets the correct requirements, test teams to create proper test scenarios, and BPM administrators to know the details that must be considered during promotion, execution, and resolution of issues that might occur during run time.

At the highest level view, BPM on Cloud provides the infrastructure for the BPM product, although you provide the utilization of business process management to meet the requirements.

The next section describes how everyday details can be intertwined.

Solution architecture

The BPM on Cloud infrastructure is provided with your BPM on Cloud subscription. Incoming HTTPS requests are first routed through a tier for authentication and authorization. When your requests are authorized, they are further routed to your correct instance. Figure 2 illustrates that a typical customer instance of BPM on Cloud includes the following environments:

- ▶ Process Center cell known as the Development environment (Dev)
- ▶ Process Server cell known as the Test environment (Test)
- ▶ Process Server cell known as the Runtime environment (Run)

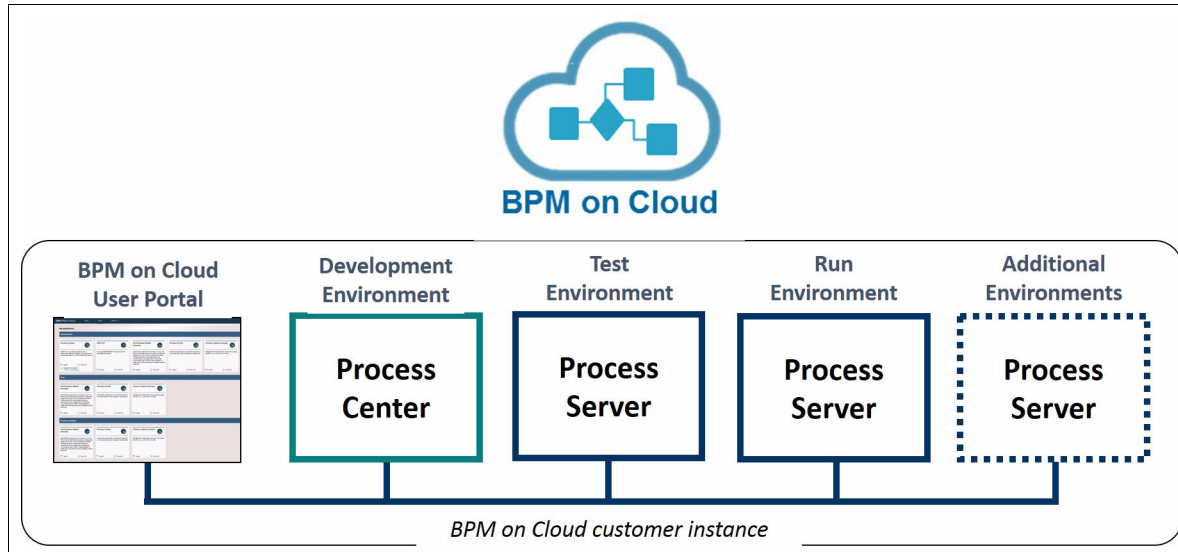


Figure 2 The IBM Business Process Manager on Cloud infrastructure

There is an option to purchase a limited number of additional Process Server environments. One common scenario that might motivate the use of the additional environment is to allow an environment for another type of testing. The infrastructure that supports the additional environment can match the Test environment, perhaps to isolate user acceptance testing from functional testing during development, or it can match the Run environment, perhaps to allow load testing.

Alternatively, a poor use of an additional environment is to use the additional environment as a separate production environment (Run) for a separate set of projects, especially when the separate projects are owned and cared for by separate groups. This is because both of the projects will still share a single Process Center, which means that both teams of developers are competing with each other for the Process Center's availability. It also means that both projects need to provide users to act as BPM on Cloud administrators and will need to be aware of each other's testing, such as for scheduling long-running tests. They will also need to work with each other when there are runtime errors, including out of memory or other resource constraints, to determine which project is triggering such errors in the shared development and test environments.

Interaction with the instance

You interact with the BPM on Cloud instance via the BPM on Cloud (Management) portal. How much a particular user can see via the BPM on Cloud (Management) portal depends on the BPM on Cloud roles and environments that are assigned to that user.

BPM on Cloud roles and environments are documented in the BPM on Cloud Knowledge Center article “Adding and configuring environments for users” available at:

<http://ibm.co/2eZI49e>

Note regarding roles: The BPM on Cloud *Administrator* and *Operator* roles are unique to BPM on Cloud. Separately, the BPM groups (such as *tw_admins* and *tw_authors*) for each BPM environment are equally true for both BPM on Cloud environments and on-premise installations of Business Process Manager.

Figure 3 shows the view when a user logs in to your instance’s BPM on Cloud portal. The view includes three tabs on top (Learn, Work, and Admin). The view shown in Figure 3 is of the Work tab. This user is able to see the Admin tab also because this user has Administrator or Operator (or both) authority.

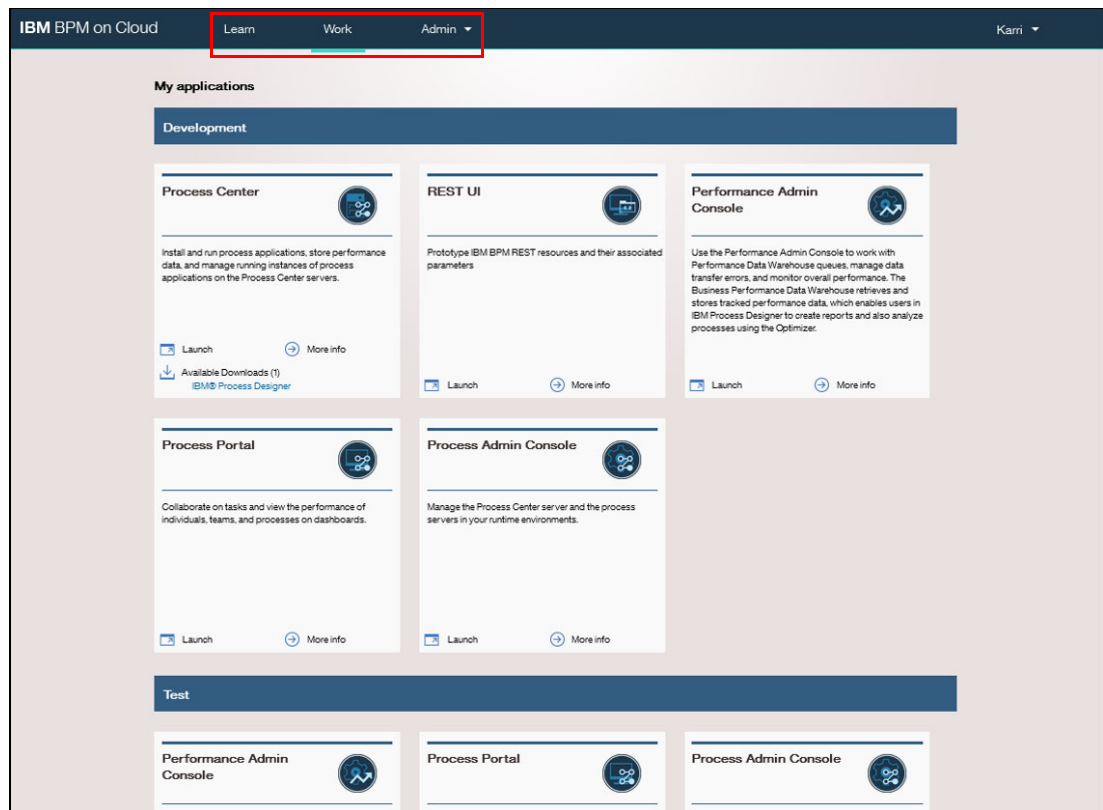


Figure 3 Your view when you log in to your instance’s BPM on Cloud portal

If your user ID has permission to all three environments, you will see sections for each environment: the Development environment, the Test environment, and the Runtime environment (which is below the Test environment but not shown in Figure 3). It is not required or expected for most users to have access to all three environments. For example, your administrators might want to limit test teams to have access only to the Test environment.

Each environment has links to the typical IBM BPM consoles hosted for each particular environment. For example, the Development environment provides links to its Process Center, Process Portal, and Process Admin Console.

More information: Within each environment, each of the consoles are used by different users for different purposes. Refer to the IBM Knowledge Center for details about capability provided by the IBM BPM base product:

- ▶ The Process Center repository
<http://ibm.co/2g6lwkP>
- ▶ Process Server and runtime environments
<http://ibm.co/2fDLMEq>

Users that you have designated to be Account Admins for your instance can see the **Admin** → **User Management** capabilities shown in Figure 4.

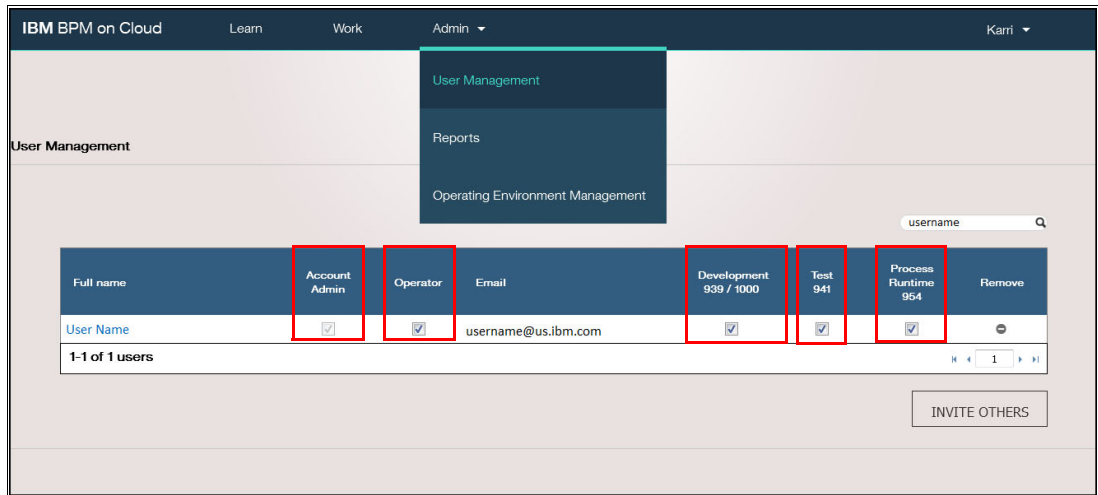


Figure 4 A BPM on Cloud instance's Administrators view of User Management

In the User Management panel, an Administrator specifies which environment a user can have access to. There are options for the Development, Test, and Process Runtime environments. Figure 4 shows that the user has access to all three of these environments.

There are also options for the BPM on Cloud roles of Account Administrator and Operator. Figure 4 shows that the user has both of these roles.

You can also click the user's name to set some basic BPM groups for the user. For example, if a user is to be a *developer*, entitlement to the dev environment is required and the user will need to be a member of *tw_authors*.

Users who are designated to be *Operators* for your instance can see the Operating Environment Management capabilities shown in Figure 5. These capabilities are often referred to as *self-service* capabilities.

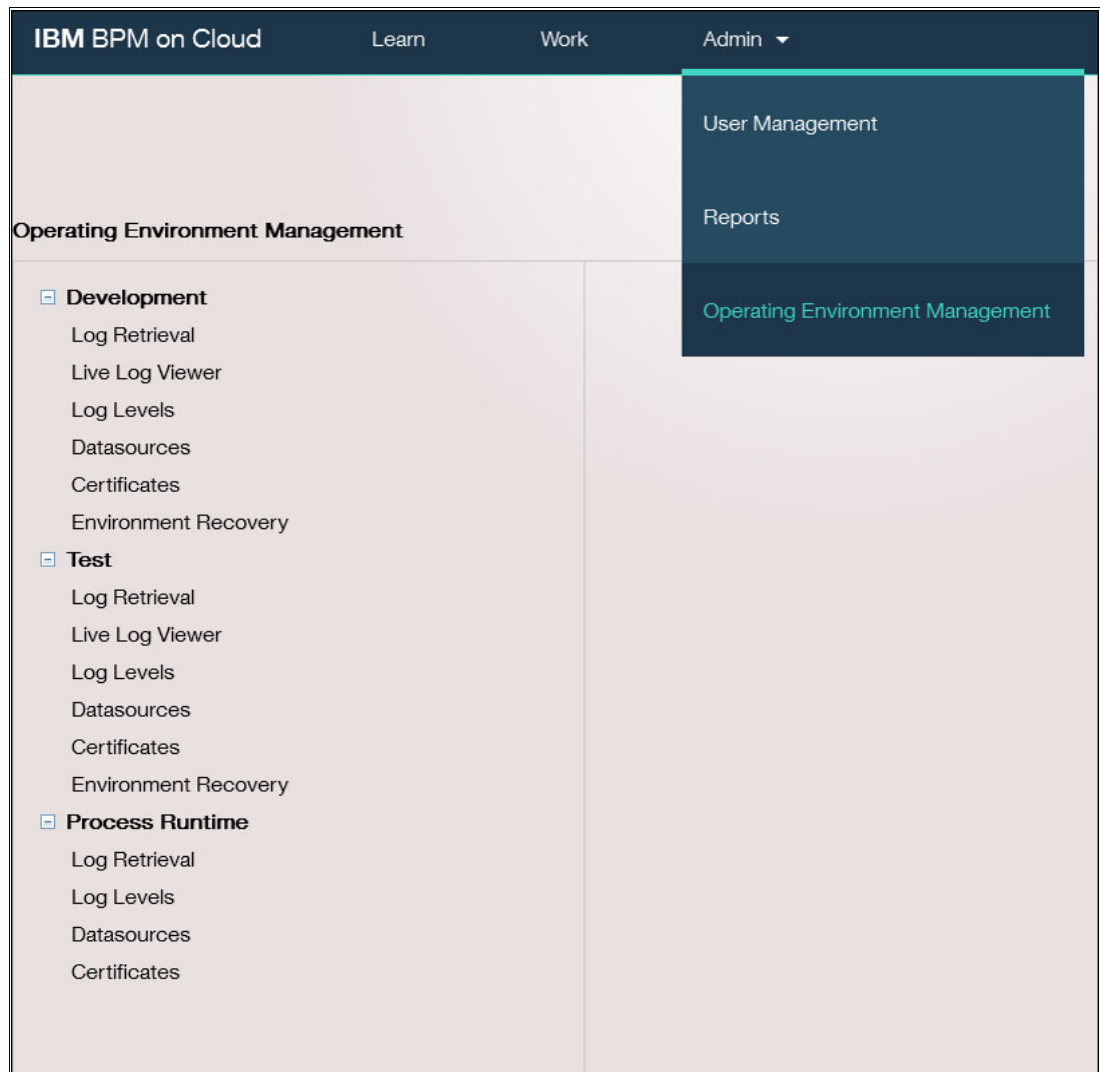


Figure 5 BPM on Cloud instance's Operator's view of Operating Environment Management capabilities

Self-service capabilities include the ability to retrieve logs, set traces, and import certificates. For the Development and Test environments, an Operator also has the authority to restart the environment (Environment Recovery).

Important: The Environment Recovery option is a full restart of the environment. Depending on the number and size of applications that are deployed in the environment, this full restart can take nearly 20 minutes to complete.

The preceding section of this guide described how users interact with the BPM on Cloud portal interface. However, as users of an on-premises Business Process Manager configuration will attest, there is additional involvement required for day-to-day operations. Your instance's Administrators and Operators need to use their knowledge of the BPM on Cloud portal, ability to interact with the BPM on Cloud team for additional operational requests, usage of the BPM consoles, and basic understanding of your process applications and their expected behaviors to maintain order for your Business Process Manager projects.

Usage scenarios

This section describes common BPM on Cloud usage scenarios.

Environmental monitoring

BPM on Cloud instances are monitored for issues, such as high resource consumption, hung threads, and the presence of system dump files. Users do not have direct access to the environmental monitoring details.

When a critical situation is detected, an email notification is sent to the instance's Administrators. Depending on the situation, the emails contain general suggestions as to what the Administrators should check. These suggestions generally involve downloading and reviewing server logs and weighing additional factors that they should know, such as whether additional applications have been deployed or whether the environment from which the alert was generated is currently running a large test. If the cause of the issue is still unclear, the Administrators can open a service request (ticket) to get additional debugging help from IBM BPM product support engineers.

Review logs

Users with Operator authority can use a self-service action to download log files from an IBM BPM on Cloud environment.

Every environment has server (WebSphere JVM cluster member) logs. There are logs for the Messaging Cluster, Support Cluster, and Application Cluster servers. The logs you will most frequently review are the logs from the Application Cluster servers, because that is where process applications are running.

Particularly at the time of server start (or restart), there is a lot of standardized logging from the product that tells you the status of what WebSphere services and resources it is starting and culminating at a line of output, which informs you that the server is "open for e-business." Your administrators don't have to be particularly versed about each line of this output, as the meanings for the output are generally each to reference via web searches. However, after reviewing the output from startup enough times, they should be familiar enough to notice when something is different. For example, it might happen that a server is not starting cleanly due to transaction recovery.

It is a good practice to periodically review logs, especially after deploying new snapshots and running tests. This periodic review can help you to identify and remove any new errors that might occur after events, such as deploying a new snapshot or running tests with non-trivial load.

It is also a good practice to review logs for the purpose of ensuring that developers are not logging superfluous information. It's one thing for developers to over-log in the development environment, but it is painful in higher volume Test or Run environments to wade through unnecessary output. Excessive logging can actually make problem determination harder and can waste valuable system resources.

Product support (service requests)

There will be times at which your developers have issues with the authoring tooling (Process Designer or IBM Integration Designer). If those problems aren't related to permissions or logging in to the Process Center repository, it is likely a problem that will need product support via a service request.

There will be times at which your test teams or users complain that the process application isn't working as expected. Depending on the situation, the situation might have a variety of causes, including application errors or network errors or the environment itself might be struggling due to runtime errors or lack of resources. If the Administrators review the logs but cannot determine the cause of the issues, they need to create a service request.

Your Administrators are responsible for creating the service request and for providing the initial problem description, severity, and impact to your business.

You can help speed up the support process by being as detailed as possible. At a minimum, you can help the support team identify where you are having the problem by providing the following information:

- ▶ Specify that you are a BPM on Cloud customer.
- ▶ Include the name (host name) of your instance.
- ▶ Specify the environment (Dev, Test, or Run).
- ▶ Provide the time stamp (including time zone) at which the problem occurred.
- ▶ If you have a screen capture or steps to re-create the problem, provide it. This information can help support to know in which console you are seeing the problem.
- ▶ If you have reviewed the logs and see errors, provide the logs.
- ▶ If you know that you have recently deployed a new snapshot or are in the middle of running a test, provide any data that can give clues as to what might have changed.

As soon as the BPM on Cloud team knows you have created the service request, they will work with you and IBM BPM Support to provide additional data, such as product and fix version information and first-failure data capture (FFDC) files, or to perform actions that you cannot, such as update a WebSphere configuration property or to apply an interim fix.

You will need to remain engaged with the BPM Support team for the duration of the request, to confirm whether you are still experiencing the problem, possibly to provide an export of your snapshot (if necessary), and likely to enable trace and recreate the issue.

Gather trace

Users with the Operator role can use the self-service function in Log Levels to set a trace specification. This trace is generally performed at the request of Support during debugging activities for a service request. Support will tell you which trace specification to use.

On the Log Levels panel, after pasting the trace spec into the text box, click **Apply Changes**, and make note of the time and time zone (let's call this the *start time*). You then re-create your problem. Make note of the time and time zone at which you perform each action. Providing as many details as possible is important.

It is extremely important that after you have re-created the problem that you go back to this self-service page and click **Restore System Default**. A trace can be heavy and can negatively impact the run time. So you probably want to disable the trace as soon as possible.

You will then retrieve the logs (because the logs include the trace) and then upload them to the service request.

If the logs are too big for you to download from self service, alert the BPM on Cloud team and mention the instance name, the environment, the start and end times, and the service request number. Then the BPM on Cloud team can upload the logs directly to the problem management record (PMR).

Process applications

Your process applications belong solely to you. All knowledge of workings of the applications and requests for snapshots (.twx files) must be handled by your BPM administrators.

It is common for BPM Support to request a snapshot (.twx file) of your application when debugging certain issues encountered in your service request.

It is good practice if ahead of time you have additionally created a summary of your process application's design and interactions, so that you can possibly save time by sharing it with BPM Support when needed.

BPM product databases

The BPM on Cloud team has full database access and can provide any database dumps or run requested SQL queries as needed for resolving service requests.

Configuration

Most configuration change requests are simple changes to runtime properties.

Because BPM on Cloud is a managed environment, some configuration changes might not be allowed, because they can be contrary to network or security standards that must be maintained or might disturb other tenants in some way. It is possible that a service request suggestion or customer request can fall into this category. If so, the BPM on Cloud team might assert that the change is not possible. However, whenever possible the BPM on Cloud operations team will execute your requests with precision.

Restart servers

Users with the Operator role can restart your Dev or Test environments via self-service actions. In this way, you are in control of the timing that you have to endure the window of unavailability for that environment while it is restarting.

The BPM on Cloud team will not restart your Dev or Test environments unless you have given explicit approval for doing so.

The BPM on Cloud team can restart part of an environment (such as only the Application Cluster server JVM) or the entire host image for an environment. The BPM on Cloud team will perform rolling restarts of highly available resources (including the Run environment, because it has multiple nodes) at any time.

Install interim fixes

Sometimes the result of a service request is a suggestion to apply an interim fix to the BPM product.

The BPM on Cloud team first tests the installation of that interim fix in a sandbox environment. After the test proves to be clean, the BPM on Cloud team requests you to provide a maintenance window during which to install the interim fix.

Requests for enhancement

The BPM on Cloud team strives to provide better self service capabilities and knows that there is room for improvement. If you are facing or have experienced a situation in which you believe a self-service option would have saved you from trouble, consider creating a request for enhancement (RFE). You can create a request for enhancement by going to the IBM developerWorks® RFE Community:

<https://www.ibm.com/developerworks/rfe/>

As shown in Figure 6, you will need sign in. You can look at other RFEs if you are not signed in, but you will not be able to create an RFE.

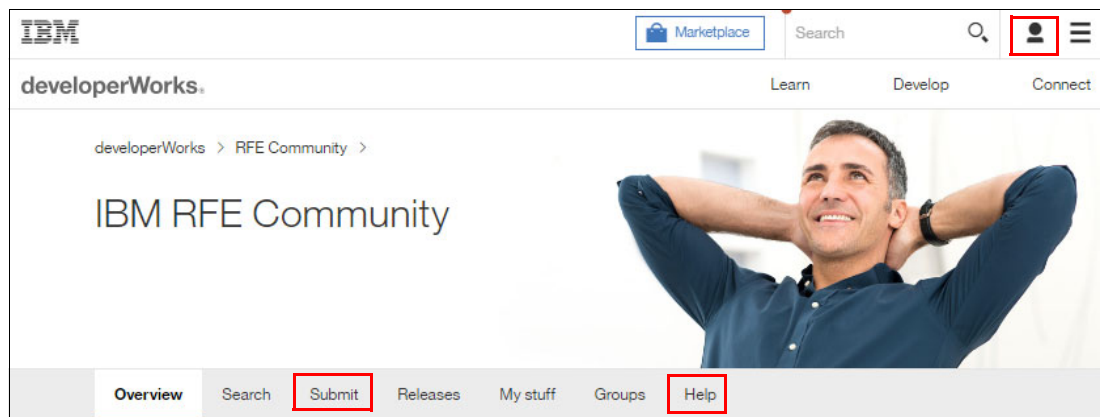


Figure 6 IBM RFE Community login

For Brand, select **WebSphere**. For Product, select **IBM Business Process Manager on Cloud**, and then click the arrow.

If you do not see many RFEs, you might be looking at the Hot list. Try clicking the Top list.

You will want to read some of the existing RFEs first, because it is possible that someone has already submitted and RFE for the same thing. In that case, you can add your vote to the submission.

To create your own RFE, go to the Submit tab and provide as much detail as possible. For additional help to understand the RFE process, go to the Help tab, as highlighted in Figure 6.

Supported platforms

IBM Business Process Manager on Cloud is a SaaS offering.

The runtime servers are hosted by BPM on Cloud.

IBM Process Designer (which is used for creating BPD process applications) or IBM Integration Designer (which is used for creating BPEL and SCA applications) is required to be installed locally on your developer's machines.

The detailed system requirements information is available through the Software Product Compatibility Reports available online at:

<http://www.ibm.com/software/reports/compatibility/clarity/index.jsp>

This web site provides you with the ability to dynamically generate operating system, prerequisite, server virtualization environment, translation, end of service, and detailed system requirements reports for your specific product, release, and operating system.

Ordering information

You are encouraged to try a free trial in a shared Client Trials instance at:

<https://www.bpm.ibmcloud.com/#trial>

Subscriptions for purchase are available through IBM Passport Advantage®.

Refer to the following link for current information if you are considering purchasing a subscription:

<http://www.ibm.com/software/products/en/business-process-manager-cloud>

Subscriptions include the following benefits:

- ▶ Monthly subscription with a minimum number of months for the initial term
- ▶ Single price includes BPM software, IBM Cloud infrastructure, and management services
- ▶ User, per month, pricing with a minimum of 25 users
- ▶ Includes five designer (“author”) users by default; additional designers can be added as needed
- ▶ Concurrent User or Authorized User subscription options

Table 1 lists ordering information.

Table 1 Ordering part numbers and feature codes

Program name	PID number	Charge unit description
IBM Business Process Manager Advanced	5725-C94	Processor Value Unit (PVU)
IBM Business Process Manager Advanced for z/OS®	5655-Y02	PVU
IBM Business Process Manager Standard	5725-C95	PVU
IBM Business Process Manager Express	5725-C96	PVU
IBM Business Process Manager Tools and Add-ons	5725-C97	Authorized user application instance
IBM Business Process Manager on Cloud	5725-L63	Authorized user, concurrent user, instance

Related information

For more information, see the following resources:

- ▶ *Deliver Modern UI for IBM BPM with the Coach Framework and Other Approaches*, SG24-8355
<http://www.redbooks.ibm.com/abstracts/sg248356.html>
- ▶ *The Process Architect: The Smart Role in Business Process Management*, REDP-4567
<http://www.redbooks.ibm.com/abstracts/redp4567.html>
- ▶ *Scaling BPM Adoption: From Project to Program with IBM Business Process Manager*, SG24-7973
<http://www.redbooks.ibm.com/abstracts/sg247973.html>
- ▶ *Go Digital by Taking Advantage of Hybrid Cloud Patterns with IBM Operational Decision Manager and IBM Business Process Manager*, REDP-5211
<http://www.redbooks.ibm.com/abstracts/redp5211.html>
- ▶ *How to Design an IBM BPM Solution*, TIPS1253
<http://www.redbooks.ibm.com/abstracts/tips1253.html>
- ▶ IBM Offering Information page (announcement letters and sales manuals)
http://www.ibm.com/common/ssi/index.wss?request_locale=en

On this page, enter IBM Business Process Management, select the information type, and then click **Search**. On the next page, narrow your search results by geography and language.

Authors

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