IBM InfoSphere Information Server
Version 11 Release 3

IBM InfoSphere Information Server Guide for Managing Events

IBM

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> **Note**
>
> Before using this information and the product that it supports, read the information in "Notices and trademarks" on page 73.

Contents

Chapter 1. Event management overview

You can manage the events captured from data quality and governance processes.

When events relate to data quality issues, you can see the details of those exceptions in the Data Quality Exception Console or manage them with IBM Stewardship Center. When events relate to governance issues, you can receive email notification about the changes in assets, or you can approve or reject potential changes to information governance rules.

Events

An event is an occurrence of significance to a task or a system. Events can include completion or failure of an operation, a user action, or the change in state of a process.

IBM® InfoSphere® Information Server manages two kinds of events: exception events and governance events.

When events occur, tools can create events of varying types, store them in the metadata repository, and register them with event services. Events have names, properties, and associated notification types.

Exception events

In InfoSphere Information Server, conditions or events that might require additional information or investigation are called exception events, or "exceptions". Information about each group of exceptions is provided by exception sets.

Exceptions

Exceptions are conditions or events that are generated from a data rule run or job run that might require additional information or investigation. For example, depending on your organizational goals and processes, the following entities might be considered exceptions:
- Events that generate records that do not meet the conditions of data rules in InfoSphere Information Analyzer.
- Clerical matches in InfoSphere DataStage® and QualityStage®.

Exception records

Exception records are records that contain the data that is relevant to the exception, such as the data that does not meet the conditions from a data rule run or data that identifies clerical matches that were caught by the exception stage from a job run.

Exception sets

Exception sets are groups of exception records that were generated by a particular event and the details about those exception records.

When an event generates exceptions, an exception set is created and made available to the Data Quality Exception Console. Each product or component

provides exception sets to the Data Quality Exception Console in its own way, and provides its own set of information about the exceptions. Exception sets are created in the following ways:

- In InfoSphere DataStage and QualityStage, an exception set is created each time a job that includes the Exceptions stage is run. An exception set is created for each Exceptions stage in the job.
- In InfoSphere Information Analyzer, an exception set is created each time a data rule is run.

Exception sets provide information such as the exception providers that generated the exceptions, when the exceptions were generated, and the number of exception records generated by the exception. Exception sets identify the implemented data resources, such as databases, data files, host computers, or data item definitions, that include the exception records. If exceptions were generated and the product stores the exception records, you can view the exception records in the Data Quality Exception Console.

Governance events

A governance event is information about an event that is sent to subscribers by supported mechanisms, such as in an email message or in a call to an application.

Governance events are events that are generated when actions occur in the system. Governance events include details about the asset and the actions that involve that asset. For example, in IBM InfoSphere Information Governance Catalog, governance events are generated for actions on an information governance rule that was created, modified, or deleted, or if its workflow status changed.

Subscriptions

A subscription is a request to be notified of a specific type of event.

The Subscriptions Manager provides a notification service that you can use to track and act on events that are of interest to you. For each subscription, you define how you want to be notified, either by email or by an application. You can filter the event type of the subscription to receive notifications for only those events that you are interested in.

Exception management user roles

IBM InfoSphere Information Server administrators define user permissions by assigning suite component roles to users of the Data Quality Exception Events component.

The Exception Management user roles determine the tasks that a user can complete and what a user sees when they are using the Data Quality Exception Events component. You can assign the following suite component user roles in the IBM InfoSphere Information Server Web console.

Exception Management Administrator
Administrators ensure that exception information is collected and shown in the Data Quality Exception Console. They also manage subscriptions related to exceptions events with the Subscription Manager and purge information as needed.

Exception Management Data Steward Manager
Data steward managers track the lifecycle of exception sets in the Data

Quality Exception Console. They monitor the owner, status, and priority that are associated with exception sets, send exception sets to IBM Stewardship Center, and manage subscriptions that are related to exceptions events with the Subscription Manager.

Exception Management Data Steward

Data stewards provide fixes and supporting information for the exception records that are associated with the exception sets.

Exception Management Business steward

Business stewards view exception sets to track the data quality of business entities like implemented data resources in Data Quality Exception Console and InfoSphere Information Governance Dashboard.

The following table outlines the tasks that a user with the specified role can complete when using the Data Quality Exception Events component.

Table 1. Tasks that can be completed by each user role

Task	Exception Management Administrator	Exception Management Data Steward Manager	Exception Management Data Steward	Exception Management Business Steward
Delete exception sets and the contained records and fixes in Data Quality Exception Console	Yes			
Manage Data Quality Exception Console subscriptions with Subscription Manager	Yes	Yes		
Send exception sets to the IBM Stewardship Center	Yes	Yes		
Set the priority of an exception set in Data Quality Exception Console		Yes		
View exception records and fixes in Data Quality Exception Console		Yes	Yes	
Add notes to an exception set in Data Quality Exception Console		Yes	Yes	
View attachments for an exception set in Data Quality Exception Console		Yes	Yes	
Browse and search exception sets in Data Quality Exception Console	Yes	Yes	Yes	Yes
Access Data Quality Exception Console from InfoSphere Information Governance Dashboard	Yes	Yes		Yes

Related information:

Assigning user roles

Exception management architecture

Exception management within IBM InfoSphere Information Server collects data quality issues in a unified way, either as data is processed within data integration or cleansing jobs, or during data rule analysis that can be ran by subject matter experts.

The following figure shows the relationship between the exception management components (IBM Stewardship Center, Data Quality Exception Console, and IBM InfoSphere Information Governance Dashboard exception management reports), the Subscription Manager, the event services of the Notification Framework, and the components of InfoSphere Information Server.
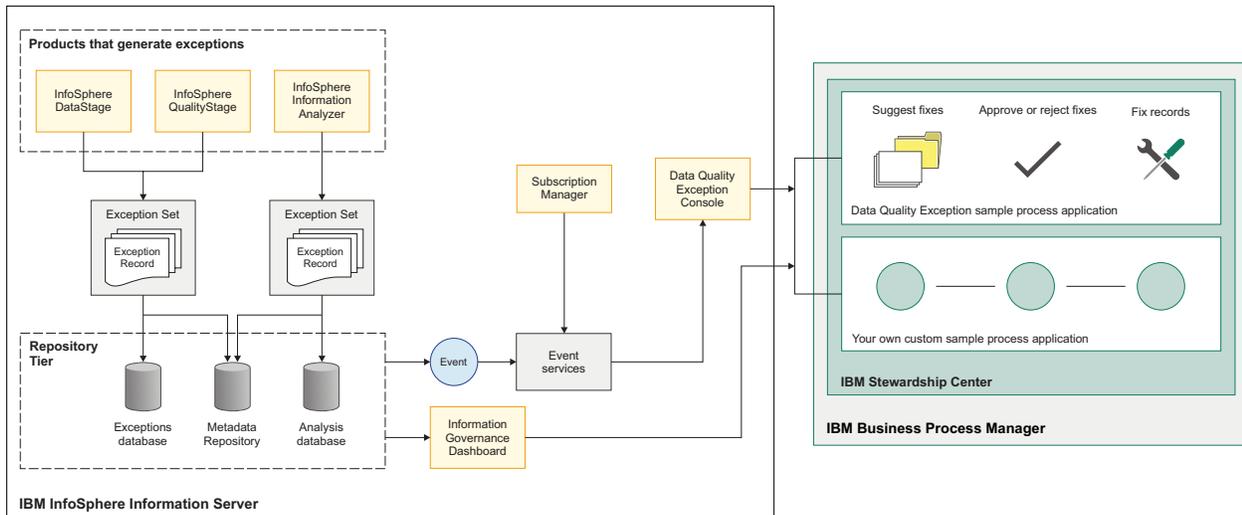
Figure 1. High-level exception management architecture and workflow

The exception management architecture consists of the following phases:

1. An administrator installs and configures the Data Quality Exception and Governance Events components. During installation, a default subscription is created for each exception event. Each subscription uses a different application to route exception sets and their corresponding records to either the Data Quality Exception Console or IBM Stewardship Center. An administrator can view those subscriptions in Subscription Manager.

   - The Data Quality Exception Console sends exception sets for all newly generated exceptions to Data Quality Exception Console.
   - The Data Quality Exception sample process application sends selected exception sets to IBM Stewardship Center.

2. Exceptions are generated by projects, jobs, or rules. Exception records that are generated by the Exceptions stage of InfoSphere DataStage or InfoSphere QualityStage are stored in the exceptions database. Exception records that are generated by InfoSphere Information Analyzer are stored in the analysis database. The additional details about the exception records that were generated are in exception sets, which are stored in the metadata repository.

3. If an administrator configured InfoSphere Information Governance Dashboard for exception management reporting, information about exception sets in the metadata repository can read by InfoSphere Information Governance Dashboard and displayed in the exception management reports workspace.

4. When exceptions are generated, the exception event NEW_EXCEPTIONS_EVENT is created and triggers the Notification Framework. The Notification Framework notifies the Data Quality Exception Console and the application sends exception sets to the Data Quality Exception Console.

5. After the exception sets arrive in the Data Quality Exception Console, data stewards, data steward managers, and business stewards can browse and monitor them. Data stewards and data steward managers are also able to click **View Details** to see additional information that is associated with the exception set, and the individual records contained in the exception set. Data steward managers can manage the priority of exception sets from the Data Quality Exception Console.

6. A data steward manager selects an exception set that is displayed in the Data Quality Exception Console and clicks **Manage**. The exception event NEW_MANAGED_SET_EVENT is created and triggers the Notification Framework. The Notification Framework notifies the Data Quality Exception sample process application and the application sends those exception sets along with all subsequent exception sets that meet the same filter conditions (projectName or applicationType) to IBM Stewardship Center. The exception sets can be managed by using the Data Quality Exception sample process application in IBM Stewardship Center, or by using your own custom process application in IBM Stewardship Center.

7. If a data steward manager wants to stop future exception sets that meet the same filter conditions from being sent to the IBM Stewardship Center, the data steward manager clicks **Monitor**. Future exception sets generated with those filter conditions continue to appear in the Data Quality Exception Console and can be monitored there, but they are not sent to the IBM Stewardship Center.

8. If a data steward manager wants to prevent exception sets that meet certain filter conditions from appearing in the Data Quality Exception Console, the data steward manager uses Subscription Manager to delete the original subscription to NEW_EXCEPTIONS_EVENT and then creates a new subscription to that exception event with different filter conditions.

Related concepts:

"Scenario: Tracking and managing exception sets" on page 9
This scenario describes how the fictional Sample Outdoor Company reviews, tracks, manages, and resolves exceptions that are generated by data rules.

Related tasks:

"Subscribing to exception events" on page 30
You can use the Subscription Manager to manage exception events for data quality rules that occur in InfoSphere Information Analyzer and in the exception stages of InfoSphere DataStage and QualityStage.

Related reference:

"Applications for exception events" on page 42
Two types of applications are available by default for exception events, one for each exception event type.

Related information:

Working with exception management reports

Customizing which exception sets are sent to the Data Quality Exception Console
You can control which exception sets are displayed in the Data Quality Exception Console.

Creating your own IBM Business Process Manager Standard process application with the Stewardship Center Application Toolkit
You can use the Stewardship Center Application Toolkit to create an IBM Business Process Manager process application that uses information about exceptions that are generated by IBM InfoSphere Information Server exception providers.

Governance event management architecture

Governance event management within IBM InfoSphere Information Governance Catalog sends email notification to selected users when actions occur to assets or when the workflow status of an information governance rule changes.

The following figure shows the relationship between the governance events from InfoSphere Information Governance Catalog, the Subscription Manager, the event services of Notification Framework, and IBM Stewardship Center.
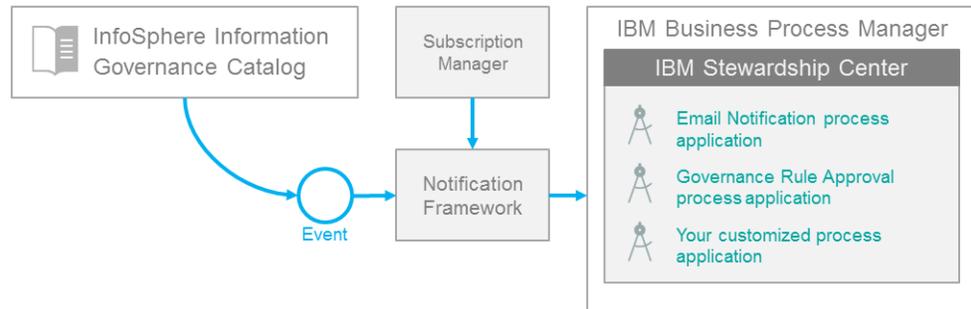
Figure 2. High-level architecture of governance events

The governance event management architecture consists of the following phases:

1. The security officer decides to create the information governance rule in InfoSphere Information Governance Catalog. Workflow state is enabled. The new information governance rule is in Draft status.

2. In the Subscription Manager, the event type is linked to the Email Notification process application and is filtered for the CREATE action. A second subscription is created to link the event type to the Business Rule Approval process application and filter for the SUBMIT_FOR_APPROVAL action.

3. When the security office creates the information governance rule in InfoSphere Information Governance Catalog, an IGC_BUSINESSRULE_EVENT event is triggered. The Subscription Manager receives notice through a subscription to the event type IGC_BUSINESSRULE_EVENT that a new information governance rule was created in InfoSphere Information Governance Catalog.

4. IBM Stewardship Center sends email to notify selected users and stewards of the new information governance rule.

5. After the email recipients review the new information governance rule, the status is changed to Pending Approval. This change creates the governance event IGC_BUSINESSRULE_EVENT. The Subscription Manager receives notice through a subscription to the event type IGC_BUSINESSRULE_EVENT that an information governance rule was moved to Pending Approval status.

6. The Governance Rule Approval process in IBM Stewardship Center sends email to notify selected email recipients to approve the modified rule or to return it to Draft status.

7. One of email recipients decides to approve the information governance rule. The approver clicks the link in the email message to open the task in IBM Stewardship Center and then clicks the **Approve** button. Another email is then sent to users in the team RulePublishersGroup in IBM Stewardship Center that the rule was approved for publication in InfoSphere Information Governance Catalog. Email is also sent to the stewards of the information governance rule.

Overview of the Data Quality Exception Console

The Data Quality Exception Console is a role-based, browser-based application that you can use to monitor and manage data quality challenges discovered within the information landscape of your enterprise.

The Data Quality Exception Console provides a unified view of data quality issues that are collected from across the various data integration and data quality activities that are provided to users of IBM InfoSphere Information Server. When quality issues are found in your data, exceptions are generated and stored. The Data Quality Exception Console leverages the event and notification services to collect and organize these exceptions in a central location so that they can be made available to a data analyst or data steward team for review.

For example, a data rule that is run in InfoSphere Information Analyzer generates an exception set for all records that do not meet the conditions of the data rule. The generated exception set also creates a new exception event, and depending on your configuration, the event can trigger an application to send exception sets to the Data Quality Exception Console. The Data Quality Exception Console can then display the exception sets and their associated exception detail records, and you can use it to monitor and manage the priority of these quality issues.

All projects, jobs, or rules that generate exceptions send exception sets to the Data Quality Exception Console. You can specify which exception sets are sent to the Data Quality Exception Console and manage those exception sets with different IBM BPM process applications in IBM Stewardship Center.

Beyond simple monitoring, you can use the Data Quality Exception Console to send exception sets to the IBM Stewardship Center, where they can be addressed and resolved by a data steward team according to your specific business requirements. The status of exception sets that are managed with IBM Stewardship Center is updated and displayed in the Data Quality Exception Console, which you can use to monitor the progress that was made towards resolving data quality issues.

Note: The Data Quality Exception Console replaces the functions of the former IBM InfoSphere Data Quality Console. Do not use both components to manage the same exception sets simultaneously.

Related information:

Monitoring and managing data quality issues with the Data Quality Exception Console
You use the Data Quality Exception Console to track and handle exceptions that are generated by InfoSphere Information Server.

Overview of IBM Stewardship Center

IBM Stewardship Center helps bridge the gap between business and IT users by providing a central browser-based interface where they can collaborate on and manage data quality issues.

As many data stewards become increasingly responsible for improving the value of their data assets, they need capabilities to help them manage these new requirements. Data stewards are being asked to handle a diverse set of scenarios, including:

- Collaborating across multiple lines of business to build information policies that support regulatory requirements
- Assessing the cost of poor data quality and managing such data quality issues to closure
- Engaging subject matter experts through business processes to review and approve corporate glossary changes

Data stewards and data steward managers use the tools and processes that are provided by IBM Stewardship Center to tackle these data governance and quality challenges.

IBM Stewardship Center leverages the strengths of IBM Business Process Manager to offer solutions to these challenges that can be used immediately or can be customized or extended to suit the specific needs of your organization. The capabilities that are provided with IBM Stewardship Center are divided into three categories: data quality exception management, governance and workflow notification, and performance metrics.

Data Quality Exception Management
> The data quality exception management capabilities that are provided with IBM Stewardship Center include a prebuilt and customizable workflow that you can use to improve the quality of your information assets and integrated collaboration tools that connect members of your data quality team with other teams in your organization.

Governance and Workflow Notification
> The governance and workflow notification capabilities that are provided with IBM Stewardship Center include prebuilt workflows to notify users of glossary and asset activities and allow them to approve rule changes in the InfoSphere Information Governance Dashboard to define and drive the organization's data quality agenda.

Performance Metrics
> The performance metrics capabilities that are provided with IBM Stewardship Center include tools that help users monitor task status for tasks that are overdue or at risk, monitor task turnover rate, and monitor open tasks for the coming week.

IBM Stewardship Center includes these components:
- The Data Quality Exception sample process application, which is a sample workflow for resolving data quality issues, which can be customized or extended.
- The Stewardship Center Application Toolkit, which can be used to extend the capabilities of the Data Quality Exception sample process application or to create your own custom workflows.
- The Email Notification process application, which can be used to notify users by email when governance events are generated in Information Governance Catalog. allow users to review and approve changes to information governance rules in Information Governance Catalog.
- The Governance Rule Approval process application, which can be used to manage approvals for information governance rules from Information Governance Catalog.

Related information:

Managing governance events and exceptions with IBM Stewardship Center
You can use IBM Stewardship Center to help manage data governance policy
implementation with IBM InfoSphere Information Governance Catalog, and to
resolve exceptions that are identified by IBM InfoSphere Information Server
components.

Scenario: Tracking and managing exception sets

This scenario describes how the fictional Sample Outdoor Company reviews,
tracks, manages, and resolves exceptions that are generated by data rules.

The fictional Sample Outdoor Company sells and distributes products to
third-party retailer stores and consumers. The company has consolidated data from
several acquisitions into their primary database. To understand, cleanse, and
transform the data, the company sets up projects in IBM InfoSphere DataStage,
IBM InfoSphere QualityStage, and IBM InfoSphere Information Analyzer.

In InfoSphere Information Analyzer, the company created the InvalidTaxID data
rule. The InvalidTaxID rule evaluates data records to determine whether the data
in the TAXID column is a valid nine-digit tax identification number.

The company now wants to monitor the exceptions that do not meet the conditions
of the rule. To monitor these exception sets, the company sets up and uses the
event and exception management components:
- Exception management reports in IBM InfoSphere Information Governance
  Dashboard
- Data Quality Exception Console
- IBM Stewardship Center

Reviewing exceptions and assessing the quality of your data with the exception management reports of InfoSphere Information Governance Dashboard

To review exception sets that are generated when the rule is run, employees of the
fictional Sample Outdoor Company complete the following steps:
1. The data steward manager begins by opening an exception management
   workspace in IBM Cognos Connection, selects a scope of interest that is based
   on the project that contains the InvalidTaxID data rule. The data steward
   manager then selects Data Steward Manager Summary to see charts with
   information about those exception sets.
2. The data steward manager selects a bar in one of the charts to drill down to
   the corresponding exception set report. To review details of the exception set,
   the data steward manager clicks the name of the exception set, which opens the
   Exception Set Details report. On the Exception Sets report page, the data
   steward manager clicks the link to the Data Quality Exception Console to
   further assess the exception set.

Monitoring exception sets and viewing exception records in the Data Quality Exception Console

To monitor exceptions that are generated when the rule is run, employees of the
fictional Sample Outdoor Company complete the following steps:

1. In the Data Quality Exception Console, the data steward manager filters to find the InvalidTaxID exception set in the list of new exception sets and assigns it high priority.
2. The data steward manager wants to send that exception set along with all subsequent exception sets produced by that data rule to be managed in the IBM Stewardship Center. The data steward manager selects the set and clicks **Manage** in the Data Quality Exception Console to send the exception sets to the Data Quality Exception sample process application in IBM Stewardship Center.

Managing exception sets with the IBM Stewardship Center

To manage exceptions sets that are sent to the Data Quality Exception sample process application in IBM Stewardship Center, employees of the fictional Sample Outdoor Company complete the following tasks:

1. In the Work dashboard of IBM Stewardship Center, the InvalidTaxID exception set displays as a task in the data steward team task list.
2. A data steward from the data steward team logs in to IBM Stewardship Center and clicks the task to claim it. The data steward is able to view details about the exception set that can help to determine how to resolve the data quality issue. When the task is claimed in IBM Stewardship Center, the owner and status of the exception set are updated and displayed in the Data Quality Exception Console.
3. The data steward collaborates with the stewardship team by using the collaboration tools in IBM Stewardship Center and exports the exception records to a .csv to make a batch of edits to the data. The data steward imports the fixes back into the system, and clicks **Submit Fixes** to send the fixes to the data steward manager for review. The owner and status of the exception set changes again and is displayed in the Data Quality Exception Console.
4. The data steward manager logs in to IBM Stewardship Center, sees the fixed records as a task in the task list, and clicks the task to claim it. IBM Stewardship Center displays the fixes, attachments, and notes that the data steward added to the exception set. After reviewing the fixes, the data steward manager clicks **Approve Fixes** to accept the them and send the approved fixes to the data source owner team to be applied to the original data source. The owner and status of the exception set changes again and is displayed in the Data Quality Exception Console
5. The data source owner logs in to IBM Stewardship Center, sees the approved fix records as a task in the task list, and clicks the task to claim it. IBM Stewardship Center displays the fixes, attachments, and notes that the data steward and data steward manager added to the exception set. After reviewing the fixes, the data source owner makes the appropriate changes to the original data source and then clicks **Apply Fixes**. The completed task is removed from the task list. The owner and status of the exception set changes again and is displayed in the Data Quality Exception Console
6. An InfoSphere Information Analyzer user runs the same rule with the new input records in place to confirm the fixes.

Related information:

⬆ Working with exception management reports

Tracking and handling exceptions with the Data Quality Exception Console
You can use the Data Quality Exception Console to monitor exception sets and review their exception records to determine the root cause of data quality issues.

Managing exceptions with the Data Quality Exception sample process application
The Data Quality Exception sample process application defines a workflow to

allow a stewardship team to manage data quality issues.

Chapter 2. Installing and configuring the Data Quality Exception and Governance Events components

If you want to manage data quality and governance events and receive notifications about those events, you must first install the Data Quality Exception and Governance Events components. To use IBM Stewardship Center to manage workflows relating to these events, you must also install IBM Stewardship Center.

About this task

IBM InfoSphere Information Server provides a notification service that you can use to keep track of and act on events that are of interest to you. You can subscribe to receive notifications for the following types of events:

- Exception events for data quality rules, which are created in InfoSphere Information Analyzer and in the exception stages of InfoSphere DataStage and IBM InfoSphere QualityStage. For more information, see Subscribing to exception events.
- Governance events, which are created for events that are managed in Information Governance Catalog For more information, see Subscribing to governance events.

Procedure

1. If you want to manage and resolve data quality issues, or if you want to use to notify users by email when asset activities such as creation, modification, deletion, and approval in workflow occur in Information Governance Catalog, Install and configure the Data Quality Exception Events component.
2. Optional: If you want to use to notify users by email when asset activities such as creation, modification, deletion, and approval in workflow occur in Information Governance Catalog, Install and configure the Data Quality Governance Events component.

What to do next

IBM Stewardship Center provides data quality champions, data stewards, data steward managers, and data source owners with a central, browser-based interface to support activities that are related to data quality and governance. If you want to use IBM Stewardship Center, Install and configure IBM Stewardship Center.

Installing and configuring the Data Quality Exception Events component

To use IBM InfoSphere Information Server events and notification services to manage and resolve data quality issues, you must first install and configure the Data Quality Exception Events component.

Before you begin

IBM InfoSphere Information Server, version 11.3.1 must be installed.

About this task

The Data Quality Exception Events component includes the Data Quality Exception Console, the Subscription Manager, and the events and notification services that support these applications. To use these applications and services, you must first install and configure the Data Quality Exception Events component.

Procedure

1. Install the Data Quality Exception Events component.
2. Configure the Data Quality Exception Events component.

What to do next

If you want to use IBM Stewardship Center to manage and resolve data quality issues, install and configure IBM Stewardship Center.

Installing the Data Quality Exception Events component

To use the Data Quality Exception Events component, you must install the prerequisite software and the patches.

Before you begin

IBM InfoSphere Information Server, Version 11.3.1 must be installed.

About this task

The Data Quality Exception Events component includes the Data Quality Exception Console, Subscription Manager, and the events and notification services that support these applications. To use these applications and services, you must first install and configure the Data Quality Exception Events component.

This patch also includes the services, configuration files, IBM BPM sample process application, and application toolkit that you can use to manage workflows relating data quality.

Procedure

1. If you installed the metadata repository on an Oracle database or Microsoft SQL Server, you must first set up database schemas and users for the Data Quality Exception Events component.

   Note: If you installed the metadata repository on DB2®, no additional configurations are needed. The steps that are outlined in the IBM Support Portal document are specific to installations of the metadata repository on an Oracle database or Microsoft SQL Server.

2. Install the patch, `Stewardship Center - Exception Management Patch for Data Quality`. See the following IBM Support Portal document for instructions for downloading and installing this patch:

   Download the Stewardship Center - Exception Management Patch for Data Quality

Configuring the Data Quality Exception Events component

To use the Data Quality Exception Events component, you must run a script to configure the default behavior of the Data Quality Exception Console.

Before you begin

- Install the Data Quality Exception Events component.
- If you want to use IBM Stewardship Center:
  - Install and configure IBM Stewardship Center.

About this task

The `event_management_setup` script configures the default behavior of the Data Quality Exception Events component in the following ways:

- Registers the exception event providers, exception event types, and applications that are required for exception management.
- Creates the default subscription that enables all exceptions for exception management. With this configuration, all exceptions that are generated by IBM InfoSphere Information Server products and components are displayed in the Data Quality Exception Console.
- Creates the default subscription that enables a user of the Data Quality Exception Console to send selected exception sets to the Data Quality Exception sample process application by clicking **Manage**.

  Note: You must have IBM Stewardship Center installed to use this feature.

You can change the default behavior of the Data Quality Exception Console. You can specify which exception sets are sent to the Data Quality Exception Console and manage those exception sets with different IBM BPM process applications in IBM Stewardship Center. See Customizing the Data Quality Exception Console for more information.

Procedure

Run the `event_management_setup` script from the `<IS_install_path>`/Clients/ `DQ_BPM/scripts` directory on the computer where you installed IBM InfoSphere Information Server.

- If you installed IBM Stewardship Center, you need to specify the IBM BPM SSL port.

  To determine your IBM BPM SSL port, open the IBM WebSphere® Application Server administrative console on the computer where you installed IBM Business Process Manager Standard and click **Servers** > **Clusters** > **WebSphere application server clusters** > **Single Cluster** > **Cluster Members** > **SingleClusterMember1** > **Ports**. The IBM BPM SSL port is the **WC_defaulthost_secure** port number.

- If you did not install IBM Stewardship Center, you need to provide only *<IS_admin_name>* and *<IS_admin_password>*.

AIX® HP-UX LinuxSolaris

```
./event_management_setup.sh <IS_admin_name> <IS_admin_password>
<IS_url>:<IS_SSL_port> <BPM_user_name> <BPM_user_name>
<BPM_url>:<BPM_SSL_port>
```

For example:

```
cd /opt/IBM/InformationServer/Clients/DQ_BPM/scripts
./event_management_setup.sh isadmin infsv123pwd
myinformationserver.com:9443 bpmadmin bpm123pwd mybpmserver.com:9444
```

Windows

```
event_management_setup.bat <IS_admin_name> <IS_admin_password>
<IS_url>:<IS_SSL_port> <BPM_user_name>
 <BPM_user_name><BPM_url>:<BPM_SSL_port>
```

For example:

```
cd C:\IBM\InformationServer\Clients\DQ_BPM\scripts
event_management_setup.bat isadmin infsv123pwd
myinformationserver.com:9443 bpmadmin bpm123pwd mybpmserver.com:9444
```

Note: To troubleshoot script errors, refer to the log files that correspond to your installation of IBM WebSphere Application Server. For information, see Configuring WebSphere Application Server logs.

Installing and configuring the Governance Events component

To use IBM InfoSphere Information Server events and notification services notify users by email when asset activities occur in Information Governance Catalog, you must first install and configure the prerequisite software.

Before you begin

*   IBM InfoSphere Information Server, version 11.3.1 must be installed.
*   Install and configure the Data Quality Exception Events component.

About this task

The Governance Events component includes the events and notification services, configuration files, and IBM BPM process applications that notify users by email when asset activities occur in Information Governance Catalog and provides workflows for managing these events in IBM Stewardship Center. To use these services, you must first install and configure the Data Quality Exception Events component so that you can use Subscription Manager.

The Data Quality Exception Events component is also a prerequisite if you want to use IBM Stewardship Center to notify users by email when asset activities such as creation, modification, deletion, and approval in workflow occur in Information Governance Catalog.

Procedure

1. Install the patch, `IGC roll-up 6 for Information Server Version 11.3`. See the following IBM Support Portal document for instructions for downloading and installing this patch:

    Download IGC roll-up 6 for Information Server Version 11.3

2. Enable the event notification feature in Information Governance Catalog so that users can receive email notification of asset events and workflow actions.

What to do next

To ensure that the notification of governance events is configured properly, modify a term in Information Governance Catalog InfoSphere Information Governance Catalog. Similarly, modify an information governance rule and submit it for publication approval. Verify that the right person gets an email with the notification event.

Installing and configuring IBM Stewardship Center

Before you can use IBM Stewardship Center, you must Install and configure IBM Business Process Manager Standard, customize the login page to be IBM Stewardship Center, and then import and configure your IBM BPM process applications.

Before you begin

- Install and configure the Data Quality Exception Events component.
- If you want to use IBM Stewardship Center to notify users by email when asset activities such as creation, modification, deletion, and approval in workflow occur in Information Governance Catalog, Install the Governance Events component.

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About this task

IBM Stewardship Center includes these components:

- The Data Quality Exception sample process application, which is a sample workflow for managing remediation-related tasks.
- The Stewardship Center Application Toolkit, which can be used to expand the capabilities of the Data Quality Exception sample process application or to create your own custom workflows.
- The Information Governance Catalog Governance and Workflow Notification applications, which can be used to notify users by email when asset activities such as creation, modification, deletion, and approval in workflow occur in Information Governance Catalog.

Complete the following steps to install and configure the components of IBM Stewardship Center that you want to use.

Procedure

1. Install and configure IBM Business Process Manager Standard.
2. Customize the login page to be IBM Stewardship Center.
3. **Optional:** If you want to use the Data Quality Exception sample process application that is installed by the Data Quality Exception Event component, or if you want to use your own IBM BPM process application to manage and resolve data quality issues with IBM Stewardship Center, Import and configure the Data Quality Exception sample process application. The Data Quality Exception sample process application and the Stewardship Center Application Toolkit are imported.
4. **Optional:** If you want to use your own IBM BPM process application with the Stewardship Center Application Toolkit to manage and resolve data quality issues with IBM Stewardship Center, follow these steps:
   a. Create your own IBM Business Process Manager Standard process application with the Stewardship Center Application Toolkit.
   b. Import your process application.
   c. Customize the Data Quality Exception Console to send exception sets to your BPM process application in IBM Stewardship Center.
5. **Optional:** If you want to use the Governance Email and Workflow Notification sample process application that is installed by the Data Quality Exception

Event component, Download, import and configure the Governance Email and Workflow Notification sample process application..

What to do next

- For troubleshooting assistance, see the IBM Support portal document, Troubleshooting IBM Stewardship Center installation and configuration.
- If you want to use IBM Stewardship Center to manage and resolve data quality issues, see Managing exceptions with IBM Stewardship Center.
- If you want to use IBM Stewardship Center to notify users by email when asset activities such as creation, modification, deletion, and approval in workflow occur in Information Governance Catalog, see Managing information governance rules with the Email Notification and Governance Rule Approval sample process applications in IBM Stewardship Center.

Installing and configuring IBM Business Process Manager Standard

To use IBM Stewardship Center, you must first install and configure IBM Business Process Manager Standard.

Before you begin

- Review the installation roadmap for IBM Business Process Manager Standard.
- To complete the following steps, you need to specify the IBM BPM SSL port.

  To determine your IBM BPM SSL port, open the IBM WebSphere Application Server administrative console on the computer where you installed IBM Business Process Manager Standard and click **Servers** > **Clusters** > **WebSphere application server clusters** > **Single Cluster** > **Cluster Members** > **SingleClusterMember1** > **Ports**. The IBM BPM SSL port is the **WC_defaulthost_secure** port number.

-

  Note: The clustering capabilities in IBM WebSphere Application Server are not supported by IBM Stewardship Center.

Procedure

1. Install IBM Business Process Manager Standard, Version 8.5.

   a. Install IBM Business Process Manager Standard. Remember the credentials that you specify for the cell administrative account and the deployment environment administrative account, as you use these credentials to log in to IBM BPM to verify your installation.

   b. When the installation is complete, start the IBM Business Process Manager Standard Quick Start for Process Center, and select **Start the Process Center Deployment Environment**. For example, if you installed IBM BPM in the default directory, you might run the following commands:

   AIX HP-UX LinuxSolaris
   ```
   cd /opt/ibm/BPM/v8.5/bin
   ./BPMQuickStart.sh ProcessCenter DmgrProfile celladmin BPM123pwd
   ```

   Windows
   ```
   cd c:\ibm\bpm\v8.5\bin
   BPMQuickStart.bat ProcessCenter DmgrProfile celladmin BPM123pwd
   ```

   c. Close the Quick Start page, and click **Exit** to close the IBM BPM Installation page.

d. Restart your operating system.
  e. If you are installing IBM InfoSphere Information Server in the same instance of IBM BPM, stop IBM WebSphere Application Server Network Deployment.

2. Upgrade IBM WebSphere Application Server Network Deploymentand IBM Business Process Manager Standard to the supported versions.

  These specific versions must be installed:
  - IBM WebSphere Application Server Network Deployment, Version 8.5.5.2
  - IBM Business Process Manager Standard, Version 8.5.0.1

  a. To determine which versions of IBM WebSphere Application Server and IBM BPM are installed, run the **versionInfo** command from the *<BPM_install_directory>*/bin directory.

     For example:

     AIX HP-UX Linux Solaris
     ```
     cd /opt/ibm/BPM/v8.5/bin
     versioninfo.sh
     ```

     Windows
     ```
     cd c:\ibm\bpm\v8.5\bin
     versioninfo.bat
     ```

  b. If you are installing IBM InfoSphere Information Server in the same instance as IBM BPM, rename the version of Installation Manager that was installed.
  c. Download and install IBM Installation Manager, Version 1.6.2.
  d. Download and install WebSphere Application Server V8.5.5 Fix Pack 2 and follow the instructions for "Installing fix pack on distributed operating systems using local repository ".

     Important: If you do not complete this step, then you cannot use Installation Manager, Version 1.6.2 to update IBM WebSphere Application Server Network Deployment and IBM Business Process Manager Standard to the supported versions.

  e. Run Installation Manager, Version 1.6.2 to update IBM WebSphere Application Server Network Deployment and IBM Business Process Manager Standard to the supported versions. Make sure that you **do not enable** the **Show recommended only** check box, and then select all IBM Business Process Manager Standard 8.5.0.1 packages and all IBM WebSphere Application Server Network Deployment 8.5.5.2 64-bit packages.

     Important: More recent versions of IBM Business Process Manager Standard and IBM WebSphere Application Server might be available when you use IBM Installation Manager to update these products. Updating these products to other versions can cause unexpected problems with the Stewardship Center.

3. Start IBM BPM to complete the configuration of IBM Business Process Manager Standard.
  a. Start the IBM Business Process Manager Standard Quick Start for Process Center.
  b. Select **Start the Process Center Deployment Environment**.
  c. Enter the cell credentials that you specified for the cell administrative account when you installed IBM BPM. The default user name is *celladmin*.

4. Optional: If you plan to create your own IBM BPM process application with the Stewardship Center Application Toolkit, install IBM Process Designer, Version 8.5.

5. Update the IBM InfoSphere Information Server trust store with the IBM BPM SSL signer certificate.

   Follow the step that corresponds to your installation of IBM WebSphere Application Server to retrieve a signer certificate from IBM Business Process Manager Standard so that IBM InfoSphere Information Server can notify IBM Business Process Manager Standard of new exceptions..

   IBM WebSphere Application Server Network Deployment:
   > Retrieve the signer certificate for the IBM WebSphere Application Server client trust store Specifically:.
   >
   > a. Log in to the IBM WebSphere Application Server administrative console on the computer where you installed IBM InfoSphere Information Server.
   >
   > b. Go to the **SSL certificate and key management** > **key stores and certificates** > **IISTrustStore** > **Signer certificates** > **Retrieve from port** pane.
   >
   > c. Navigate to the **SSL certificate and key management** > **key stores and certificates** > **NodeDefaultTrustStore** > **Signer certificates** > **Retrieve from port** pane.
   >
   > d. Specify the IBM Business Process Manager Standard host name and SSL port and then save the configuration.

   IBM WebSphere Application Server Liberty Core:
   > Retrieve the signer certificate by running the `UpdateSignerCerts` command from the `<IS_install_path>/ASBServer/bin` directory on the computer where you installed IBM InfoSphere Information Server.
   >
   > ```
   > UpdateSignerCerts -ss -url https://<BPM_host_server>:<BPM_SSL_port>
   > ```
   >
   > For example:
   >
   > **Windows**
   > ```
   > cd C:\IBM\InformationServer\ASBServer\bin
   > UpdateSignerCerts.bat -ss -url https://my_bpm_server:9444
   > -user isadmin -password my_pa55w0rd
   > ```
   >
   > **AIX HP-UX Linux Solaris**
   > ```
   > cd /opt/IBM/InformationServer/ASBServer/bin
   > UpdateSignerCerts.sh -ss -url https://my_bpm_server:9444
   > -user isadmin -password my_pa55w0rd
   > ```

6. Update the IBM BPM trust store with the IBM InfoSphere Information Server SSL signer certificate.

   On the computer where you installed IBM Business Process Manager Standard, complete the following steps to retrieve a signer certificate from IBM InfoSphere Information Server so that IBM Business Process Manager Standard can connect to IBM InfoSphere Information Server to retrieve details about exceptions. For more information, see Retrieve from port.

   a. Log in to the IBM WebSphere Application Server Network Deployment administrative console on the computer where you installed IBM Business Process Manager Standard.

   b. Go to the **SSL certificate and key management** > **key stores and certificates** > **CellDefaultTrustStore** > **Signer certificates** > **Retrieve from port** pane.

    c. Specify the IBM InfoSphere Information Server host name and SSL port.

    d. Specify an alias to help you identify the signer certificate. For example, you might enter the host name of the computer where you installed IBM InfoSphere Information Server.

    e. Save the configuration.

7. If IBM InfoSphere Information Server and IBM Business Process Manager Standard are running on the same computer, specify a custom LTPA token name for IBM Business Process Manager Standard.

   Note: The step is only required if IBM InfoSphere Information Server and IBM Business Process Manager Standard are running on the same computer.

   Complete the following steps to specify a unique LTPA token name for IBM Business Process Manager Standard to prevent unexpected results with single sign-on (SSO) between IBM InfoSphere Information Server and IBM Business Process Manager Standard.

    a. Log in to the IBM WebSphere Application Server Network Deployment administrative console on the computer where you installed IBM Business Process Manager Standard.

    b. Go to **Security** >**Global security** >**Authentication**>**Web and SIP security**>**Single sign-on (SSO)**.

    c. In the **LTPA V2 cookie name** field, enter a token name other than *LtpaToken2*. For example, you might enter *IISBPMLtpaToken2*.

    d. Click **OK.**

    e. Click **Save.**

8. Restart IBM Business Process Manager.

9. Restart IBM InfoSphere Information Server.

What to do next

Customize the IBM BPM Process Portal login page to be IBM Stewardship Center.

Customizing the login page to be IBM Stewardship Center

IBM Stewardship Center is consisted of a set of IBM Business Process Manager sample process applications. You can customize the IBM BPM login page to be the IBM Stewardship Center login page.

Before you begin

- Install and configure the Data Quality Exception and Governance Events components.
- Install and configure IBM BPM
- Follow the steps that are outlined in this procedure on the computer where IBM Business Process Manager Standard is installed.

About this task

Procedure

1. Open the IBM Business Process Manager Quick Start page.

   For example:

AIX HP-UX LinuxSolaris
```
cd /opt/ibm/BPM/v8.5/bin
./BPMQuickStart.sh ProcessCenter DmgrProfile celladmin BPM123pwd
```

Windows
```
cd c:\ibm\bpm\v8.5\bin
BPMQuickStart.bat ProcessCenter DmgrProfile celladmin BPM123pwd
```

2. Open the WebSphere Application Server Admin Console from the IBM Business Process Manager Quick Start page and complete the following steps:

   a. Go to **Security** > **Global Security** > **Web and SIP security** > **General Settings**.

   b. Enable **Default to basic authentication when certificate authentication for the HTTPS client fails**.

   c. Close the WebSphere Application Server Admin Console.

3. Restart the Process Center Deployment Environment from the IBM Business Process Manager Quick Start page.

4. Extract the *<Information_Server_install_directory>*/Clients/DQ_BPM/scripts/ UpdateProcessPortalLoginPage.zip archive file that is installed when the exception management components are installed. Then, open UpdateProcessPortalLoginPage.env with an editor and change the *WAS_PROFILE_DIR* environment variable to include the WebSphere Application Server profile directory that you specified when you installed IBM BPM.

   For example:

   Windows
   ```
   WAS_PROFILE_DIR=C:\IBM\BPM\v8.5\profiles\Node1Profile
   ```

   AIX HP-UX LinuxSolaris
   ```
   WAS_PROFILE_DIR=/opt/ibm/BPM/v8.5/profiles/Node1Profile
   ```

5. Run the following command:

   Windows
   ```
   UpdateProcessPortalLoginPage.bat update_BPM_LoginCSS
   ```

   AIX HP-UX LinuxSolaris
   ```
   ./UpdateProcessPortalLoginPage.sh update_BPM_LoginCSS
   ```

6. Follow the instructions in the command-line interface. Provide the values of the following parameters for IBM BPM:

   Host name
   For example, *mybpmserver.mycompany.com*

   Secure port number
   The SSL port number for IBM BPM. For example, *9443*.

   Note: To easily determine your secure port number for IBM BPM, you can launch Process Portal from the IBM BPM Quick Start page and take note of the port number in the URL for IBM BPM Process Portal.

   Cell admin user ID
   For example, *bpmadmin*

   Cell admin password
   For example, *bpmPWD123*

What to do next

Open the IBM Stewardship Center.

Importing and configuring the Data Quality Exception sample process application

Before you can use the Data Quality Exception sample process application, you must import and configure it in IBM Business Process Manager.

Before you begin

- Install the Data Quality Exception Events component.
- Install and configure IBM Stewardship Center.
- Configure the Data Quality Exception components.
- You must have the IBM InfoSphere Information Server suite administrator role.
- An IBM InfoSphere Information Server user with the Exception Management Data Steward Manager role must be created, so that you can associate the user ID with the process application.

About this task

The Data Quality Exception sample process application contains a model of the workflow that an organization might follow to manage identified exceptions, including the approval or rejection of proposed changes to exceptions and the application of fixes to the original data source to resolve them. To work with exceptions in the IBM Stewardship Center, the data rules or jobs that generate exceptions must be run so that exception sets can be collected by the Data Quality Exception Console. You must then send these exception sets to IBM Stewardship Center from the Data Quality Exception Console.

Procedure

1. Open the IBM Business Process Manager Quick Start page. You use the IBM Business Process Manager Quick Start page in the subsequent steps to open the IBM BPM Process Center Console, IBM WebSphere Application Server Administration Console, and IBM BPM Process Admin Console.

   For example:

   AIX HP-UX LinuxSolaris
   ```
   cd /opt/ibm/BPM/v8.5/bin
   ./BPMQuickStart.sh ProcessCenter DmgrProfile celladmin BPM123pwd
   ```

   Windows
   ```
   cd c:\ibm\bpm\v8.5\bin
   BPMQuickStart.bat ProcessCenter DmgrProfile celladmin BPM123pwd
   ```

2. Open the IBM BPM Process Center Console and import the Data Quality Exception sample process application. Specifically:
   a. On the Process Apps tab, click **Import Process Apps**.
   b. In the Import Process App window, click **Browse** and select `IIS_Exception_Remediation_Sample.twx`, which is in the `IS_install_path`/Clients/DQ_BPM/Samples directory by default.
   c. Click **Next**.
   d. Click **Import**. The import completes, and `IIS_Exception_Remediation_Sample.twx` is visible on the Process Apps tab and the `IIS Application Toolkit` is visible on the Toolkits tab.

3. Define an alias for an IBM InfoSphere Information Server user that has the **Exception Management Steward Manager** role. Specifically:

   a. On the computer where you installed IBM Business Process Manager Standard, log in to the IBM WebSphere Application Server Administration Console and click **Security** > **Global security**.

   b. In the Authentication section, click **Java Authentication and Authorization Service** > **J2C Authentication data** > **New**.

   c. Define an alias for an IBM InfoSphere Information Server user that has the **Exception Management Steward Manager** role. For example, *isuseralias*.

   d. Specify the user ID and password.

   e. Click **OK**.

   f. Click **Save**.

   Note: Take note of the final Alias name that is listed in Alias Table. Depending on your configuration, the final name might be different from the name that you originally defined. For example, you might define *isuseralias*, but the final name in the Alias table is *Dmgr/isuseralias*. In this case, you would need to use *Dmgr/isuseralias* the final Alias name when you configure the *iisUserAlias* EPV variable in the following step.

4. Open the IBM BPM Process Admin Console and configure the Exposed Process Values (EPVs) for the variables that are provided by the Data Quality Exception sample process application.

   a. In the Server Admin area of the IBM BPM Process Admin Console, click **Admin Tools**> **Manage EPVs**.

   b. Select the snapshot, *IIS Exception Remediation Sample (Main, Tip)*, with the name *RemediationConfig*. The available EPVs are displayed.

   c. In Variable List area, select the *iisUrl* value and click **New**.

   d. In the Exposed Process Value window, specify the host name and SSL port for IBM InfoSphere Information Server in the following format:

      `https://<services_tier_host_name>:<SSL_port_number>`

      Where:

      <services_tier_host_name>
      > The name of the computer where the IBM InfoSphere Information Server services tier is installed.

      <SSL_port_number>
      > The IBM InfoSphere Information Server SSL port (default is 9443).

      Note: Ensure that the date and time that is specified in the **Schedule to interval** field is later than the current date and time. You can enter a date and time that is 1 minute in the future.

   e. In Variable List area, select the *iisUserAlias* value and click **New**.

   f. In the Exposed Process Value window, specify the Alias name as it appeared in the Alias Table in step 3. For example, *Dmgr/isuseralias*.

      Note: Depending on your configuration, the Alias name that appears in the Alias Table might be different from the name that you originally defined.

      Note: Ensure that the date and time that is specified in the **Schedule to interval** field is later than the current date and time. You can enter a date and time that is 1 minute in the future.

g. Click **OK**.

5. Open the IBM BPM Process Admin Console and create the users listed in the following table. These users are predefined for the Data Quality Exception sample process application. Provide the user names and full names that are specified in the following table. You do not need to specify the user roles when you create these users. The role information in the following table is for reference only.

Table 2. Predefined users and their corresponding roles in the sample process application

User name	Full name	Role in sample application
silvers	Stewie Silvers	Data Steward
mcgregor	Martin McGregor	Data Steward Manager
williams	Chad Williams	Data source Owner

Downloading, importing, and configuring the Email Notification and Governance Rule Approval process applications

You must download and configure the sample process application file from IBM InfoSphere Information Governance Catalog. The application file has two processes that are used by IBM Business Process Manager when governance events occur in InfoSphere Information Governance Catalog.

Before you begin

- You must install and configure the Data Quality Exception and Governance Events components.
- You must install and configuring IBM Business Process Manager Standard.
- You must have the Information Governance Catalog Information Asset Administrator or the Glossary Administrator role.
- You must know the name of the InfoSphere Information Governance Catalog users and their email address that you want to create in IBM BPM and to which predefined group you want to assign each user.
- You must have the credentials of an administrator account with the Business Process Management Administrator role.
- You must have the credentials of an administrator account with the IBM BPM WebSphere Application Server role.

About this task

The sample application file, `IIS_IGC_Examples.twx`, is only in English. You download the application file from InfoSphere Information Governance Catalog.

You create a user alias account in IBM BPM. This account retrieves information from InfoSphere Information Governance Catalog by using IBM InfoSphere Information Governance Catalog REST API.

You create users in IBM BPM and associate them with a predefined team for email notification. The teams were created for you when you imported the application file into IBM BPM.

The two processes that are in the application file are imported into IBM BPM. You configure process variables for the application in IBM BPM.

Procedure

1. Download the sample application file from the **Administration** tab of InfoSphere Information Governance Catalog. Complete these steps:

   a. Open and log in to InfoSphere Information Governance Catalog with the credentials of a user with the Information Governance Catalog Information Asset Administrator or the Glossary Administrator role.

   b. Click **Administration**.

   c. Expand **Setup**.

   d. Click **Event Notification**.

   e. In the Event Notification window, click the **Download a sample IBM Business Process Management application file** link, and then save the file `IIS_IGC_Examples.twx` to your local disk.

2. Define an alias in IBM BPM for the user account that retrieves asset details from InfoSphere Information Governance Catalog. This user account must have the Information Governance Catalog Information Asset Administrator and the Glossary Administrator role.

   This user account handles asset and workflow actions in InfoSphere Information Governance Catalog.

   a. On the computer where you installed IBM Business Process Manager Standard, log in to the IBM WebSphere Application Server Administration Console for IBM BPM. Use the credentials of an administrator account.

   b. Click **Security** > **Global security**.

   c. In the Authentication section, click **Java Authentication and Authorization Service** > **J2C Authentication data** > **New**.

   d. Define an alias for an IBM InfoSphere Information Server user that has the Information Governance Catalog Glossary Administrator and the Information Asset Administrator role. For example, *igcuseralias*.

   e. Specify the user ID and password.

   f. Click **OK**.

   g. Click **Save**.

   Note: Take note of the final Alias name that is listed in Alias Table. Depending on your configuration, the final name might be different from the name that you originally defined. For example, you might define *igcuseralias*, but the final name in the Alias table is *Dmgr/igcuseralias*. In this case, you would need to use *Dmgr/igcuseralias* the final Alias name when you configure the *IGC_USER_ALIAS_NAME* EPV variable in step 6 on page 28.

3. Open the IBM BPM Process Center Console and Import the Information Governance Rule Approval sample process application. Specifically, browse to where you saved the file `IIS_IGC_Examples.twx`.

   a. On the Process Apps tab, click **Import Process Apps**.

   b. In the Import Process App window, click **Browse** and select `IIS_IGC_Examples.twx`, from the directory where you saved it in Step 1.

   c. Click **Next**.

   d. Click **Import**. The import completes, and `IIS_IGC_Examples.twx` is visible on the Process Apps tab.

4. Create users in IBM BPM for those users who receive email messages for governance events. In addition, users who belong to RuleApproversGroup can approve the information governance rule for publication.

   a. Open the IBM BPM Process Admin Console and select **User Management** to create the users for this process. While there are no pre-defined users for the Information Governance Rule Approval sample process application, you can follow the examples in the following table. Provide the user names and full names. You do not need to specify the user roles when you create these users. The role information in the following table is for reference only.

   Table 3. Example users and their corresponding roles in the sample process application

User name	Full name	Role in sample application
igcsteward	Igc Steward	Rule Reviewer
igcmgr	Igc Manager	Rule Approver
igcpub	Igc Publisher	Rule Publisher

   b. Open the IBM BPM Process Admin Console and select **Bulk User Attribute Assignment** to Assign attributes to users, specifically the email notification attribute.

      1) Select the View by Attribute option.
      2) In the Select an Attribute list, select **Task Email Address**.
      3) Under Select Users, enter **%** in the **User** field and click **Search** to retrieve the set of available Users.
      4) Select specific users or Select **All Users** by marking the associated box.
      5) In the **Specify a Value** field, enter the email address of all users to receive email messages from the IIS IGC Examples application.
      6) Click **Assign**.

   c. Associate users with predefined groups. Identify that users that you want to assign to each of the groups for the process. The following groups are created for you when you import the application:

      EmailNotificationGroup
         This group is referenced by the Email Notification process of IIS IGC Examples application. Users who belong to this group receive email messages about the asset changes in InfoSphere Information Governance Catalog.

         To use the Email Notification process, at least one user must be added to this group.

      RuleApproversGroup
         This group is referenced by the Governance Rule Approval process of the IIS IGC Examples application. Users who belong to this group receive email messages to approve the assets that are submitted for approval. In addition, a task is created in IBM BPM Process Portal for the user to approve the rule or return the rule to Draft status.

         To use the Governance Rule Approval process, at least one user must be added to this group.

      RulePublishersGroup
         This group is referenced by the Governance Rule Approval process

of the IIS IGC Examples application. Users who belong to this group receive email messages to publish the assets that are approved.

To use the Governance Rule Approval process, at least one user must be added to this group.

For example, based on the users from the table, Table 3 on page 27, you might assign **igcsteward** to the group, **EmailNotificationGroup**, **igcmgr** to the group, **RuleApproversGroup**, and **igcpub** to the group, **RulePublishersGroup**.

5. Log in to the IBM BPM Process Admin Console. Use the credentials of an administrator account.

6. Specify the values to configure the Exposed Process Values (EPVs) for the application.

   a. In the Exposed Process Values pane, do the following actions:
      - In the **Snapshot** field, select **IIS IGC Examples (Main, Tip)**.
      - In the **Name** field, select **SYSTEM_DETAILS**.

      The available EPVs are displayed.

   b. In the Variable List pane, assign values to the following variables.

Table 4. Values for Exposed Process Variables (EPV)

Variable name	Value
BPM_PROCESS_PORTAL _URL	`https://`*`BPM_Server:Port`*`/ProcessPortal/login.jsp`
IGC_USER_ALIAS_NAME	The credentials of the alias name that was defined in step 2 on page 26. **Note:** Depending on your configuration, the Alias name that appears in the Alias Table might be different from the name that you originally defined.
IS_BASE_URL	The base address of IBM InfoSphere Information Server. For example, `https://`*`server:port`*`/ibm/iis`. If clustering is not set up, the *server* variable is the name of the computer where you installed IBM InfoSphere Information Server. The default port number is 9443. If you use the default HTTPS 9443 port, you can omit the port number, and 9443 is used automatically. If clustering is set up, *server:port* is the name or IP address and the port of the front-end dispatcher, either the web server or the load balancer. Do not use the host name and port of a particular cluster member.
SMTP_EMAIL _SERVER	*SMTP_email_server_address*. For example, `smtp2.your_company.com`.
SENDER_EMAIL _ADDRESS	This email address is listed as the Sender in email messages from IBM BPM. For example, `MY_EMAIL_ADDRESS@MYCOMPANY.COM`.

Note: Ensure that the date and time that is specified in the Schedule to interval field is later than the current date and time. You can enter a date and time that is 1 minute in the future

   c. Click **OK**.

Chapter 3. Subscribing to events

Use the Subscription Manager to manage notifications for events that are generated by suite tools.

Overview of the Subscriptions Manager

You can subscribe to exception events and governance events and specify the action to take when an event is generated.

The Subscriptions Manager provides a notification service that you can use to keep track of and act on events that are of interest to you. You can subscribe to receive notifications for the following types of events:

- Exception events for data quality rules, which are created in InfoSphere Information Analyzer and in the Exceptions stage in InfoSphere DataStage and QualityStage.
- Governance events, which are created for events that are managed in InfoSphere Information Governance Catalog.

An event is an occurrence of significance to a task or system. Events can include completion or failure of an operation, a user action, or the change in state of a process. For example, a NEW_EXCEPTIONS_EVENT is created when there are one or more exceptions to a data rule. An IGC_BUSINESS_TERM_EVENT is created when a term is created, modified, deleted, or subject to a workflow action in InfoSphere Information Governance Catalog.

In the Subscriptions Manager, you can view and subscribe to any exceptions event type if you have the required role. Governance events do not require a role.

You can filter the event type of the subscription to receive notifications for only those events that you are interested in. You filter the subscription by specifying values for one or more properties of the event type. For example, you might specify that you want to receive notification only when a NEW_EXCEPTIONS_EVENT is created for exceptions to a specific rule in a specific project, or only when a business term is modified or deleted.

Notification types

You can choose between the following types of notification in the Subscription Manager:

Email Email notifications are sent to you. You can specify that other suite users receive copies of the email.

> **Note:** Subscribers to most governance events can use the email notification sample application Email Notification instead of the Subscription Manager email notification process.

Application

Notification is sent to a program that processes notices of events. Applications can be specific to one or more event types. For example, if you select the governance event type IGC_BUSINESSRULE_EVENT, you

can select the sample process application Governance Rule Approval to manage approvals for information governance rules.

You can specify only one application per subscription. Not all event types support applications. Some support only email notification.

Applications that send events to IBM Business Process Manager require that you specify the credentials of an IBM BPM user. Applications that send events to an InfoSphere Information Server tool or product do not require credentials.

Viewing and deleting subscriptions

On the Subscriptions tab you can see only those subscriptions that you create. You can select a subscription to view its properties, including its description and the event-type filters that it uses.

You can delete one or more selected subscriptions. To maintain continuous notification of events, you might want to first create a subscription to replace the subscription that you plan to delete.

Note: Two subscriptions are created automatically when you install the Data Quality Exception Console, one subscription for each exceptions event type. You must have the role of InfoSphere Information Server suite administrator to see and delete those subscriptions.

You can also filter the display of subscriptions on the tab. For example, you might display only subscriptions for events of the type NEW_EXCEPTIONS_EVENT that were created within the past week, where any text includes the word `Customer`.

Viewing event types

On the Event Types tab, you can view descriptions of the event types that you have the required role to see. You can choose from any of these event types when you create a subscription.

Subscribing to exception events

You can use the Subscription Manager to manage exception events for data quality rules that occur in InfoSphere Information Analyzer and in the exception stages of InfoSphere DataStage and QualityStage.

Before you begin

Before you can use the email notification option in the Subscription Manager, you must configure the email provider: http://www.ibm.com/support/docview.wss?uid=swg27044422.

To receive email notification, the recipient must be listed as a user of InfoSphere Information Server and must have an email address that is specified in the Administration Console.

To subscribe to exception events, you must have the following roles and credentials:
- To open the Subscription Manager, you must have the InfoSphere Information Server suite user role or higher.

- To see and subscribe to exception events, you must have the role of Exception Management Administrator or Exception Manager Data Steward.
- To create subscriptions that use IBM Business Process Manager process applications, you must specify the user name and password of an IBM BPM user of the computer where IBM Stewardship Center is installed.

Procedure

1. Open the Subscription Manager.
2. On the Subscriptions tab click **Add**.
3. In the Add Subscription window, enter a name for the subscription.
4. Select an event type.
5. Select either **Email** or **Application** as the notification type. If no application is registered for the selected event type, email notification is automatically chosen.
6. Specify the notification details:

   Email Your email address appears in the **To:** field. To send copies of the email notifications for this subscription to other suite users, start typing the recipient name in the **CC:** field, and then select the name. You can enter names of multiple suite users.

   Application
   Select an application that is registered to receive events of your selected event type. If you select a process application that uses IBM BPM, enter your IBM BPM user name and password. The password is encrypted before it is saved. If necessary, you can use the encryption tool to encrypt the password first and then paste it into the password field.

7. To filter the events that you subscribe to, click **Filter event type** and specify values for any properties of the event type that you want to filter on. By filtering, you subscribe to only those events that are important to you. If you specify multiple values, your subscription includes only those events for which all specified values are true. For example, if you filter on **projectName** and on **exceptionSetName**, only those events that are from the specified project and from the specified data rule or exception stage are included in the subscription.

Example of creating a subscription

An Exception Management Administrator wants to subscribe to exception events from certain projects in InfoSphere Information Analyzer and InfoSphere DataStage and QualityStage. The events will be sent to the Data Quality Exception Console for processing.

On the Subscriptions tab of the Subscription Manager, the administrator clicks **Add**, and then specifies details in the Add New Subscription window.

The administrator selects **NEW _EXCEPTIONS_EVENT** and selects **Application** as the form of notification. The administrator selects the application Data Quality Exception Console, which makes the exceptions sets visible in the Data Quality Exception Console. Because this application does not use IBM BPM, no user name or password is required.

The administrator filters the events by using the **projectName** property to specify that the subscription is for only those exception events from the project *SA_Customer*. Any other exception events are ignored and not sent to the Data Quality Exception Console.

As necessary, the administrator creates more subscriptions for events from different projects, from particular rules, or from particular software applications.

Related concepts:

"Exception management architecture" on page 3
Exception management within IBM InfoSphere Information Server collects data quality issues in a unified way, either as data is processed within data integration or cleansing jobs, or during data rule analysis that can be ran by subject matter experts.

Subscribing to governance events

You can use the Subscription Manager to send notifications to an application whenever governance events of various types are generated.

Before you begin

To use the sample process applications that are provided by IBM InfoSphere Information Governance Catalog, you must download, import, and configure the Email Notification and the Governance Rule Approval applications.

To use the default email notification option in the Subscription Manager, you must configure the email provider: http://www.ibm.com/support/docview.wss?uid=swg27044422. This prerequisite does not apply to using the Email Notification sample process application.

To subscribe to governance events, you must have the following roles and credentials:

- To open the Subscription Manager, you must have the InfoSphere Information Server suite user role or higher.
- To create subscriptions that use the sample process applications or any other IBM Business Process Manager applications, you must specify the user name and password of an IBM BPM user of the computer where IBM Stewardship Center is installed.

About this task

Most governance event types can use the Email Notification sample process application, which provides more information on governance assets than the default email notification option in the Subscription Manager. The sample process application sends notifications to selected users by using IBM BPM.

To use the Governance Rule Approval sample process application, you create a subscription to the event type IGC_BUSINESSRULE_EVENT.

Procedure

1. Open the Subscription Manager.
2. On the Subscriptions tab, click **Add**.
3. In the Add Subscription window, enter a name for the subscription.
4. Select a governance event type.
5. Select and configure the form of notification.

Option	Description
To use the sample Email Notification or Governance Rule Approval sample process applications, or any other application that uses IBM BPM	1. Select **Application** 2. Select an application that is registered for your event type and specify your IBM BPM user name and password.. .
To use the default Subscription Manager email notification for the event type IGC_GLOSSARY_IMPORT_EVENT or any other event type	1. Select **Email** 2. (Optional) Specify other suite users to receive copies. .

6. Filter the events that you receive due to this subscription. Click **Filter event type** and specify values for any properties of the event type that you want to filter on. By filtering, you subscribe to only those events that are important to you. If you specify multiple values, your subscription includes only those events for which all specified values are true.
   - To use the Governance Rule Approval sample process application, filter on the action SEND_FOR_APPROVAL.
   - To use the Email notification process, filter on one of the following actions: CREATE, MODIFY, SEND_FOR_APPROVAL, RETURN_TO_DRAFT, ADD_COMMENT, APPROVE, PUBLISH. The DELETE and DISCARD actions are not supported for the Email Notification application.

Examples of creating a subscription

Subscription to notify users of pending approval for an information governance rule

A steward modified an information governance rule. The modified rule must be approved before it can be moved to the catalog in InfoSphere Information Governance Catalog. Workflow is enabled in InfoSphere Information Governance Catalog.

The steward uses the istool **event registerCallback** command to register the Governance Rule Approval application to work with IGC_BUSINESSRULE_EVENT.

In Subscription Manager, the steward creates a subscription to IGC_BUSINESSRULE_EVENT, selects **Application** as the notification type, selects the Governance Rule Approval sample process application and specifies IBM BPM credentials. The steward filters the events by typing SEND_FOR_APPROVAL as the value for the **ACTION** property.

When the information governance rule is set to Pending Approval in InfoSphere Information Governance Catalog, the subscription notifies the specified email recipients to approve or reject the modified rule.

Subscription to notify users of changes in terms

A steward wants to use the Email Notification sample process application to handle any events in which terms are modified in InfoSphere Information Governance Catalog. She uses the istool **event registerCallback** command to register the application to work with the IGC_BUSINESSTERM_EVENT.

In the Subscription Manager, the steward creates a subscription to
IGC_BUSINESSTERM_EVENT. She selects **Application** as the notification type, and
selects Email Notification as the application. She filters the event type on the
ACTION property, specifying the value `MODIFY`. When terms are modified in
InfoSphere Information Governance Catalog, her subscription notifies the specified
users by email.

Related concepts:

⇨ Encrypt command

Registering sample process applications with governance event types

To receive email messages for governance events and to approve information
governance rules for publication, register the sample process applications with
specific event types.

About this task

Before you can use applications in subscriptions to governance events, you must
use the istool `event registerCallback` command to register the applications.

InfoSphere Information Governance Catalog provides the following sample process
applications that work with governance event types and use IBM Business Process
Manager:

Governance Rule Approval
> Use this application to manage approval of information governance rules
> in IBM Stewardship Center. The application sends email to selected users
> when information governance rules are set to the Pending Approval status.
> It creates tasks for approval actions in IBM Stewardship Center.

Email Notification
> Use this application to send email to selected users when governance
> assets are created, modified, or subject to a workflow action. You must
> register the application separately for each event type that you want to
> receive notification about.

For details about the sample process applications, see "Applications for governance
events" on page 43.

For details about the types of governance events, see "Governance event types and
their properties" on page 37.

Procedure

1. Register the IGC_BUSINESSRULE_EVENT event type with the Governance
   Rule Approval sample process application by using the **event
   registerCallback command**:

   ```
   event registerCallback
   authentication parameters
   generic parameters
   -eventTypeName IGC_BUSINESSRULE_EVENT
   -callbackType HTTP_POST
   -callbackName "Governance Rule Approval"
   -callbackService "https://BPM_Server:SSL_Port
   /rest/bpm/wle/v1
   /service/IIGC@StartRuleApproval?action=start"
   -callbackDescription "This application sends email to selected users when the
   ```

```
governance event type IGC_BUSINESSRULE_EVENT occurs for a SEND_TO_APPROVAL
action.
You can use the application to track approval of information governance rules."
```

Authentication parameters specify the IBM InfoSphere Information Server services tier to connect to. For details, see Table 2 in Commands and common parameters for istool.

Generic parameters are parameters that can be used in any istool command. For details, see Table 3 in Commands and common parameters for istool.

BPM_Server:SSL_Port specifies the server and port where IBM BPM is installed.

2. Register the IGC_BUSINESSTERM_EVENT event type with the Email Notification sample application by using the **event registerCallback command**:

```
event registerCallback
authentication parameters
generic parameters
-eventTypeName  IGC_BUSINESSTERM_EVENT
-callbackType  HTTP_POST
-callbackName  "Email Notification"
-callbackService  "https://BPM_Server:SSL_Port/rest/bpm/
wle/v1/service/IIGC@StartEMail?action=start"
-callbackDescription "This application sends email to selected users when any
governance event type except IGC_GLOSSARY_IMPORT_EVENT occurs. The application
is invoked for all action types except deletion of an asset."
```

3. Repeat step 2 to register the Email Notification sample process application for each event type that you want to receive notifications about. Change the value of **-eventTypeName** for each command. You can script the commands.

What to do next

After you register an application for an event type, create a subscription in the Subscription Manager that links the event type to the process. When actions occur in InfoSphere Information Governance Catalog that generate governance events of the type that you subscribe to, the events are processed by the sample applications.

Related reference:

↪ event registerCallback command

Event types for subscriptions

InfoSphere Information Server suite tools generate different types of events that you can subscribe to.

Related reference:

↪ event registerCallback command

Exception event types and their properties

Exception events are generated for data rules in InfoSphere Information Analyzer and the Exceptions stage of InfoSphere DataStage and QualityStage jobs.

To see and create subscriptions to exception event types in the Subscription Manager you must have the role of Exception Management Administrator or Data Steward Manager.

The following table describes the names and descriptions of exception event types and the applications that are registered by default for each event type. You can also create your own applications, and then register them to event types by using the istool command **event registerCallback**.

Table 5. Exception event types

Name	Description	Applications that are registered by default
NEW_EXCEPTIONS_EVENT	Generated when new exceptions are generated by an exception provider. Exception providers are InfoSphere Information Analyzer and the Exceptions stage in InfoSphere DataStage and QualityStage.	**Data Quality Exception Console**. When a NEW_EXCEPTIONS_EVENT occurs, this application displays the exception set to the Data Quality Exception Console.
NEW_MANAGED_SET_EVENT	Generated when new managed sets are created by the exception manager service. The Data Quality Exception Console automatically creates a NEW_MANAGED_SET_EVENT when it receives notification of a NEW_EXCEPTIONS_EVENT.	**IBM Stewardship Center - Data Quality Exception**. When a NEW_MANAGED_SET_EVENT occurs, this sample process application sends the exception set to the Stewardship Center.

The following table describes the properties that you can use to filter subscriptions to exception event types.

Table 6. Filter properties for exception event types

Event type property	Description	Valid values
applicationType	The product or tool that generated the exception.	• Information Analyzer • Exception Stage **Note:** *Exception* is singular in this case. .
projectName	The name of the project that the exception was generated in.	• If you specify `Information Analyzer` for **applicationType**, specify the name of an InfoSphere Information Analyzer project. • If you specify `Exception Stage` for **applicationType**, specify the name of an InfoSphere DataStage and QualityStage project.
exceptionSummaryName	The name of the data rule or the name of the exception descriptor in a stage that generated the exception.	• If you specify `Information Analyzer` for **applicationType**, specify the name of a data rule in the specified project. • If you specify `Exception Stage` for **applicationType**, specify the name of an exception descriptor in an exception stage in the specified project. **Note:** Your subscription includes events of the selected type that occur in any stage in any job in the specified project where the stage contains an exception descriptor of the specified name. To limit the subscription to events from a single stage, define a unique name for the exception descriptor in that stage.

Governance event types and their properties

IBM InfoSphere Information Governance Catalog generates governance events for catalog assets that you can subscribe to. Most event types have properties that you can filter your subscription on.

When you subscribe to governance event types, you can have such events processed by sample process applications that are provided by InfoSphere Information Governance Catalog. The sample process applications, Email Notification and Governance Rule Approval, process events by using IBM Business Process Manager. You can also create your own applications to process events.

The following table describes the names and descriptions of event types that are created by InfoSphere Information Governance Catalog. The types of actions that you can filter the event types on are also listed. The full list of properties that you can filter on and all valid values are listed in Table 8 on page 41, Filter properties for governance event types.

Table 7. Governance event types and their description

Event type	Description	Assets in each group
IGC_GLOSSARY_IMPORT _EVENT	Generated when glossary assets are imported into InfoSphere Information Governance Catalog. You cannot filter on the properties of this event type.	Glossary assets: • Terms • Categories • Information governance policies • Information governance rules
IGC_BUSINESSTERM _EVENT	Generated when a term is created, modified, deleted, or when a workflow action occurs in InfoSphere Information Governance Catalog.	Terms
IGC_BUSINESSCATEGORY _EVENT	Generated when a category is created, modified, deleted, or when a workflow action occurs in InfoSphere Information Governance Catalog.	Categories
IGC_BUSINESSRULE _EVENT	Generated when a rule is created, modified, deleted, or when a workflow action occurs in InfoSphere Information Governance Catalog.	Information governance rules
IGC_POLICY_EVENT	Generated when a policy is created, modified, deleted, or when a workflow action occurs in InfoSphere Information Governance Catalog.	Information governance policies
IGC_DATABASESGROUP _EVENT	Generated when an asset that belongs to the Database group is modified or deleted in InfoSphere Information Governance Catalog.	Database group: • Hosts that host databases, data files, and IDoc assets • Databases • Database schemas • Database tables • Views • Database fields • Stored procedure schemas • Parameter definitions

Table 7. Governance event types and their description (continued)

Event type	Description	Assets in each group
IGC_DATAFILESGROUP _EVENT	Generated when an asset that belongs to the Data Files group is modified or deleted in InfoSphere Information Governance Catalog.	Data Files group: • Data file folders • Amazon S3 buckets • Data files • Data file elements • Data file attributes • Data file definitions • Data file attribute definitions • Parameter definitions
IGC_IDOCDATASOURCES GROUP_EVENT	Generated when an asset that belongs to the IDoc Data Sources group is modified or deleted in InfoSphere Information Governance Catalog.	IDoc Data Sources group: • IDoc types • IDoc segment types • IDoc fields
IGC_LOGICALMODELS GROUP_EVENT	Generated when an asset that belongs to the Logical Data Model group is modified or deleted in InfoSphere Information Governance Catalog.	Logical Data Model group: • Logical data models • Subject areas • Logical entities • Entity attributes
IGC_PHYSICALMODELS GROUP_EVENT	Generated when an asset that belongs to the Physical Data Model group is modified or deleted in InfoSphere Information Governance Catalog.	Physical Data Model group: • Physical data models • Physical entities • Design views • Physical attributes • Stored procedure models • Parameter definitions
IGC_MDMGROUP_EVENT	Generated when an asset that belongs to the Master Data Management group is modified in InfoSphere Information Governance Catalog.	Master Data Management group: • MDM models • Physical objects • Physical object attributes • Member types • Attributes • Composite views • Entity types • Attribute types • Attribute type fields

Table 7. Governance event types and their description (continued)

Event type	Description	Assets in each group
IGC_APPLICATIONS GROUP_EVENT	Generated when an asset that belongs to the Applications group is modified or deleted in InfoSphere Information Governance Catalog.	Applications group: • Applications • Object types • Methods • Input parameters • Output values
IGC_FILESGROUP_EVENT	Generated when an asset that belongs to the Files group is modified or deleted in InfoSphere Information Governance Catalog.	Files
IGC_STOREDPRO CEDUREDEFINITIONS GROUP_EVENT	Generated when an asset that belongs to the Stored Procedure Definitions group is modified or deleted in InfoSphere Information Governance Catalog.	Stored Procedure Definitions group: • Stored procedures • InOut parameters • In parameters • Out parameters • Result columns
IGC_BIGROUP_EVENT	Generated when an asset that belongs to the BI Reports group is modified or deleted in InfoSphere Information Governance Catalog.	BI Reports group: • BI servers • BI models • BI collections • BI collection members • BI cubes • BI reports • BI report queries • BI report query items
IGC_DATAQUALITY GROUP_EVENT	Generated when an asset that belongs to the Data Quality group is modified in InfoSphere Information Governance Catalog.	Data Quality group: • Data rule definitions • Data rule set definitions • Data rules • Data rule sets • Standardization rule sets • Match specifications

Table 7. Governance event types and their description (continued)

Event type	Description	Assets in each group
IGC_ETLGROUP_EVENT	Generated when an asset that belongs to the ETL group is modified in InfoSphere InfoSphere Information Governance Catalog.	ETL group: • Hosts that host ETL assets • Transformation projects • Jobs • Shared containers • Table definitions • Column definitions • Stages • Stage columns • Stage variables • Stage types • Parameter sets • Routines • Machine profiles
IGC_MAPPINGSGROUP _EVENT	Generated when an asset that belongs to the Mappings group is created, modified, or deleted in InfoSphere Information Governance Catalog.	Mappings group: • Mapping projects • Mapping specifications • Extension mapping documents • CDC mapping documents • Warehouse mapping documents • Blueprints
IGC_STREAMSGROUP _EVENT	Generated when an asset that belongs to the Streams group is modified or deleted in InfoSphere Information Governance Catalog.	Streams group: • Endpoints • Tuple attributes
IGC_WEBSERVICESGROUP _EVENT	Generated when an asset that belongs to the Web Services group is modified in InfoSphere Information Governance Catalog.	Web Services group: • Information Services projects • Information Services applications
IGC_IISREPORTSGROUP _EVENT	Generated when an asset that belongs to the Information Server Reports group is modified in InfoSphere Information Governance Catalog.	Information Server reports
IGC_MISCELLANEOUS GROUP_EVENT	Generated when an asset that belongs to the Miscellaneous group is modified or deleted in InfoSphere Information Governance Catalog.	• Collections • Labels • Stewards

The following table describes the properties that you can use to filter subscriptions to governance event types.

Table 8. Filter properties for governance event types

Event type property	Description

ASSET_RID	The unique ID of a particular asset.
	
	You can find the unique ID by using either method in InfoSphere Information Governance Catalog:
	
	• Query the asset type, and then select **Display the asset ID in the query results** check box.
	
	• Click the asset name link to open its Details page. The URL link for the page contains the RID.
	
	For example, the URL for the Details page of a term might be
	
	`https://<IGC_host>:<port>/ibm/iis/igc/`
	`#dossierView/6662c0f2.e1b1ec6c.`
	`6uh4j4u55.lgqlngo.abbr6q.`
	`t55bie62v0v8prlg22cfq`
	
	In this case, the RID of the term is
	
	`is6662c0f2.e1b1ec6c.6uh4j4u55.lgqlngo.`
	`abbr6q.t55bie62v0v8prlg22cfq`

ACTION	An action that is supported for events of this type.
	
	The supported actions for each event are listed in the event description:
	
	• CREATE, MODIFY, and DELETE
	
	• Work flow actions:
	
	  – SEND_FOR_APPROVAL
	  – RETURN_TO_DRAFT
	  – ADD_COMMENT
	  – APPROVE
	  – PUBLISH
	  – DISCARD
	
	Note: You cannot filter on the DELETE action or the DISCARD action when you use the Email Notification application.

Applications

When you subscribe to an event type, you can specify an *application* that is notified when events of this type are generated.

An application is a software program or routine that takes a specific action when it is notified of the event. For example, an application might start a process to notify users of a change to a business rule or an exception that occurred in a data rule.

Applications for exception event types are provided by default with the installation of the IBM Stewardship Center. Sample process applications for governance event

types can be registered after you download and import the sample process
applications into IBM Stewardship Center.

You can create your own process application in IBM Business Process Designer and
then register it to an exception event type or governance event type by using the
istool `event registerCallback` command. Specify a description for the application
by using the `callbackDescription` option, so that users of the Subscription
Manager understand what the application does. You can register the same
application for multiple event types and multiple applications for the same event
type.

When an application is registered, it is available to be used in a subscription to a
specified event type. It appears in the **Application** list for that event type when
you create a subscription in the Subscription Manager. Applications are available to
all users of the Subscription Manager that have the required roles for the event
type and the necessary credentials to run the application. Not all applications
require credentials, and not all event types require specific roles.

When you no longer need an application, you can remove it by using the istool
`event unregisterCallback` command. The application is removed from the
Subscription Manager and you need to delete any subscriptions that use the
removed application.

Related reference:

➡ event registerCallback command

Applications for exception events

Two types of applications are available by default for exception events, one for
each exception event type.

When you install the Data Quality Exception Console, the following applications
are installed and registered, and subscriptions that use the applications are
automatically created.

Data Quality Exception Console

>   When a NEW_EXCEPTIONS_EVENT is generated, a pre-existing
>   subscription to the Data Quality Exception Console application ensures
>   that all new exception sets appear in the Data Quality Exception Console.
>
>   You cannot customize the application, but you can create your own
>   subscriptions to NEW_EXCEPTIONS_EVENT to customize which
>   exception sets are sent to the Data Quality Exception Console. For example,
>   you can filter the subscriptions so that only those events that are generated
>   by a specific data rule or that are generated in a specific project appear in
>   the Data Quality Exception Console.

IBM Stewardship Center - Data Quality Exception

>   IBM Stewardship Center - Data Quality Exception is a sample IBM
>   Business Process Manager process application that sends exceptions sets
>   from the Data Quality Exceptions Console to IBM Stewardship Center to
>   be managed.
>
>   Users of the Data Quality Exception Console can select exception sets and
>   click **Manage**, which creates a NEW_MANAGED_SET_EVENT. A
>   pre-existing subscription to the event type NEW_MANAGED_SET_EVENT
>   invokes the IBM Stewardship Center - Data Quality Exception application,
>   which sends the exception sets to be managed IBM Stewardship Center

When new exception sets of the same type appear in the Data Quality Exception Console in the future, the sample application is automatically invoked to send the exception sets to IBM Stewardship Center.

You can also create and register your own IBM BPM process applications to manage exception sets in IBM Stewardship Center.

Related concepts:

"Exception management architecture" on page 3
Exception management within IBM InfoSphere Information Server collects data quality issues in a unified way, either as data is processed within data integration or cleansing jobs, or during data rule analysis that can be ran by subject matter experts.

Applications for governance events

Two sample process applications are available for governance event types. You can customize the sample applications or create your own applications.

Applications can be linked to one or more governance event types. InfoSphere Information Governance Catalog provides the following sample process applications that work with IBM Business Process Manager:

Email Notification

> This sample application can send email to selected users when any governance event type except IGC_GLOSSARY_IMPORT_EVENT is generated. You create a separate subscription for each asset type that you want notification about. You can filter the subscription to send notifications whenever a particular type of assets or an asset in a particular asset group is created, modified, or subject to a workflow action. If you do not filter the subscription, you receive notifications for all action types except deletion of an asset. The application cannot send notification about a deleted asset, because its details cannot be retrieved.

> The application sends email to stewards of the asset and to users who belong to the EmailNotificationGroup team, which is automatically configured in IBM BPM.

> To use the application, subscribe to a selected event type in the Subscription Manager, select the Email Notification sample process application, and filter the event on the ACTION property to specify the type of action that you want to subscribe to. For a list of valid values, see Table 8 on page 41 in Governance event types and their properties.

Governance Rule Approval

> Users of this sample application can manage approvals for information governance rules in IBM Stewardship Center.

> When an information governance rule is set to Pending Approval status, the application creates a task in IBM Stewardship Center and sends email to stewards of the information governance rule and to members of the RuleApproversGroup team, which is automatically configured in IBM BPM.

> A member of the RuleApproversGroup team can open the task and select either **Approve** or **Return to draft**. If the member selects **Approve**, an email is sent to users in the RulePublishersGroup team and the stewards, announcing that the rule is approved for publication in InfoSphere Information Governance Catalog.

When you configure the Governance Rule Approval application, do not take approval actions from within InfoSphere Information Governance Catalog. Instead, approve or return the rule to draft by doing the task in IBM Stewardship Center.

To use the application, subscribe to the IGC_BUSINESSRULE_EVENT event type in the Subscription Manager, select **Governance Rule Approval**, and specify `SEND_TO_APPROVAL` as the filter for the **ACTION** property.

You can customize the sample process applications in IBM BPM and create your own applications.

Note: Before you can use applications for governance events in subscriptions you must register the applications by using the istool `event registerCallback` command.

Example of using the Email Notification and Governance Rule Approval sample process applications

A security officer decides to create the information governance rule "Address must be validated and verified against postal reference source" in InfoSphere Information Governance Catalog.

Before creating the information governance rule, the security officer creates two subscriptions to the event type IGC_BUSINESSRULE_EVENT.
- The first subscription uses the Email Notification application, and filters the event type on the CREATE action.
- The second subscription uses the Governance Approval Rule application, and filters the event type on the SEND_TO_APPROVAL action.

Then, the officer creates the information governance rule and enables the Workflow state. The new information governance rule is in Draft status.

Creating the information governance rule generates an event that meets the criteria of the first subscription, which starts the Email Notification application. The application sends email to members of the EmailNotificationGroup team and to stewards of the information governance rule.

After the email recipients review the new information governance rule, a reviewer can change the status of the rule to Pending Approval.

The status change generates an IGC_BUSINESSRULE_EVENT that matches the criteria for the second subscription, which starts the Governance Rule Approval application. The application sends email to notify members of the RuleApproversGroup team to approve the modified rule or return it to Draft status.

A team member clicks the link in the email message to open the task in IBM Stewardship Center, and clicks **Approve**.

The application sends email to members of the RulePublishersGroup team stating that the rule was approved for publication in InfoSphere Information Governance Catalog. Email is also sent to the stewards of the information governance rule.
Related tasks:

Downloading, importing, and configuring the Governance Email and Workflow
Notification process application
You must download and configure the sample process application file from IBM
InfoSphere Information Governance Catalog. The application file has two processes
that are used by IBM Business Process Manager when governance events occur in
InfoSphere Information Governance Catalog.

Related reference:

 event registerCallback command

Chapter 4. Monitoring and managing data quality issues with the Data Quality Exception Console

You use the Data Quality Exception Console to track and handle exceptions that are generated by InfoSphere Information Server.

You can view exception sets and related details in the Data Quality Exception Console, edit the priority of the exception sets, and send exception sets to be managed in the IBM Stewardship Center.

Tracking and handling exceptions with the Data Quality Exception Console

You can use the Data Quality Exception Console to monitor exception sets and review their exception records to determine the root cause of data quality issues.

Before you begin

To work with exceptions in the Data Quality Exception Console, the data rules or jobs that generate exceptions must be designed and then run such that appropriate information is included in the exception sets that are sent to the Data Quality Exception Console. Review the information about tracking exceptions from InfoSphere DataStage and InfoSphere QualityStage.

Procedure

1. Open the Data Quality Exception Console and login as a user with an exception management role, such as Exception Management Steward Manager.
2. In the Exception Sets window, select exception attributes to filter the list of exception sets in the Exception Sets table. You can also type text in the filter text box to filter the list to show exception sets that contain specific terms or phrases.
3. To review more details about an exception set, select an exception set.
4. To view the individual records that are contained in the exception set, click **View Records**. Use the breadcrumb at the top of the page to return to the Exception Sets window.
5. In the Exception Sets window, select an exception set or multiple exception sets and click **Edit** to edit the priority.
6. Optional: Send selected exception sets to IBM Stewardship Center.

Related information:

Exceptions
In InfoSphere Information Server, conditions or events that might require additional information or investigation are called exception events, or "exceptions". Information about each group of exceptions is provided by exception sets.

Sending exception sets to IBM Stewardship Center

You use the Data Quality Exception Console to send certain exception sets to IBM Stewardship Center to be managed by the Data Quality Exception sample process application or by your own IBM BPM process applications.

Before you begin

- IBM Stewardship Center must be installed.
- Review information on tracking exceptions from InfoSphere DataStage and QualityStage jobs.

About this task

The Data Quality Exception Console is designed to send selected exception sets to the Data Quality Exception sample process application in IBM Stewardship Center by default. Exception sets that are sent to the Data Quality Exception sample process application appear as tasks in the data steward team task list. As the tasks move through an IBM Stewardship Center workflow, status, and owner changes are reflected in the Data Quality Exception Console. See Scenario: Tracking and managing exception sets for more information. However, use can use the Data Quality Exception Console to send selected exception sets to IBM BPM process applications, depending on the way that those exception sets were generated. For more information, contact your system administrator or see Customizing the Data Quality Exception Console.

Procedure

1. Log in to the Data Quality Exception Console to view exception sets.
2. From the Exception Sets window, in the Manage Exception Sets table, select an exception set to see more details, including implemented data resources, notes, and status history.
3. Optional: To view the exception records associated with the exception set, click **View Records**. The View Exception Records table opens. Use the breadcrumb at the top of the window to return to the Exception Sets page.
4. To send the exception set to the IBM Stewardship Center, click **Manage**. That exception set and all future related exception sets are sent to IBM Stewardship Center. Related exception sets are exception sets that were generated in the same way, as defined by your system administrator. An example of related exception sets might be exception sets that are created by the same exception provider, such as InfoSphere Information Analyzer, or by a specific InfoSphere Information Analyzer rule or InfoSphere DataStage project name, job name, or stage name.
5. To stop future related exception sets from being sent to IBM Stewardship Center, select one of the related exception sets in the Manage Exception Sets table and click **Monitor**. The workflow for existing tasks in IBM Stewardship Centerfor related exception sets is not affected and the status and owner changes continue to reflect in the Data Quality Exception Console.

Related tasks:

"Customizing the Data Quality Exception Console to send exception sets to different IBM BPM process applications in IBM Stewardship Center" on page 51 To use your own IBM BPM process applications to manage exception sets that are generated by IBM InfoSphere Information Server exception providers, you must configure the Data Quality Exception Console to send exception sets to your process applications.

Related information:

Remediating exceptions with IBM Stewardship Center You can use IBM Stewardship Center to help manage data governance policy implementation with IBM InfoSphere Information Governance Catalog, and to resolve exceptions that are identified by IBM InfoSphere Information Server components.

Customizing the Data Quality Exception Console

You can specify which exception sets are sent to the Data Quality Exception Console and manage those exception sets with different IBM BPM process applications in IBM Stewardship Center.

Customizing which exception sets are sent to the Data Quality Exception Console

You can control which exception sets are displayed in the Data Quality Exception Console.

About this task

By default, all exception sets generated by IBM InfoSphere Information Server products and components are displayed in the Data Quality Exception Console. However, you might have test jobs, sample jobs, or low priority jobs that are generating exceptions that you do not want to be included with the data that you are monitoring and analyzing in the Data Quality Exception Console. You customize which exception sets are sent to the Data Quality Exception Console by creating new subscriptions and filtering the exception sets by certain properties.

Procedure

1. Open the Subscription Manager, and on the Subscriptions tab, delete the subscription to the Data Quality Exception Console that is created by default.

   Note: To work with the subscription for NEW_EXCEPTIONS_EVENT, you must have the InfoSphere Information Server Suite Administrator role.
   You can identify this subscription by selecting it and confirming that it has the following properties:

Table 9. Properties of the default subscription that enables all exceptions for exception management

Subscription properties	Values
Name	NEW_EXCEPTIONS_EVENT/*<Unique_ID>*, where *<Unique_ID>* is a unique identifier that is generated by the exception provider.
Event type	NEW_EXCEPTIONS_EVENT
Creation date	*<SubMgrAndDataQuality_patch_run_date>*
Application	Data Quality Exception Console
Event filters	*None*

2. To specify which exception sets are sent to the Data Quality Exception Console, create new subscriptions with event filters.

   a. Specify these values for the subscription

Table 10. Properties of a NEW_EXCEPTIONS_EVENT subscription

Property	Value
Name	A friendly name for your subscription. For example, *IA_rule_AgeCheckCustomer*
Event Type	NEW_EXCEPTIONS_EVENT
Notification Type	Application
Application	Data Quality Exception Console

b. Specify values for the event filters for each subscription to limit which exception sets are sent to Data Quality Exception Console. You can limit by application or project, or for Information Analyzer by data rule. You can use these event filters:

Table 11. Event filters to limit exception sets

Event filters	Valid values
applicationType	Information Analyzer Exception Stage
projectName	*IA_project_name* *DS_project_name*, for example, *IOD_Bank_Demo*.
exceptionSummaryName	• If you specify `Information Analyzer` for **applicationType**, specify the name of a data rule in the specified project. • If you specify `Exception Stage` for **applicationType**, specify the name of an exception descriptor in an exception stage in the specified project. **Note:** You receive notifications for events of the selected type that occur in any stage in any job in the specified project where the stage contains an exception descriptor of the specified name. To limit notifications to events from a single stage, define a unique name for the exception descriptor in that stage. **Note:** Your subscription includes events of the selected type that occur in any stage in any job in the specified project where the stage contains an exception descriptor of the specified name. To limit the subscription to events from a single stage, define a unique name for the exception descriptor in that stage.

3. Optional: To restore the default configuration so that all exception sets that are generated by IBM InfoSphere Information Server products and components are sent to the Data Quality Exception Console, delete all subscriptions for the event type NEW_EXCEPTIONS_EVENT and then add a new subscription, specifying the properties in Table 9 on page 49. Do not specify filter properties for this subscription.

Example

A data steward manager wants to send only the following exception sets to the Data Quality Exception Console for tracking and monitoring:

• All exception sets that are generated by InfoSphere DataStage jobs
• Exception sets that are generated by a specific InfoSphere Information Analyzer rule, *IA_rule_AgeCheckCustomer*

On the Subscriptions tab of the Subscription Manager, the administrator deletes the subscription to the Data Quality Exception Console that is created by default.

Next, the administrator clicks **Add**, and then specifies details in the **Add New Subscription** window. The administrator selects NEW _EXCEPTIONS_EVENT as the event type and selects Application as the form of notification. The administrator selects the application Data Quality Exception Console, which sends notifications to the Data Quality Exception Console. The administrator filters the events by using the **applicationType** property to specify *Exception Stage*. All exceptions that are generated jobs are sent to the Data Quality Exception Console and

Next, the administrator creates another subscription with the same properties, and filters the events by using the **exceptionSummaryName** property to specify that the subscription is for only those exceptions from the data rule *IA_rule_AgeCheckCustomer*. With this configuration, exception sets that are generated by other InfoSphere Information Analyzer data rules are ignored and not sent to the Data Quality Exception Console.

Related information:

Subscriptions
A subscription is a request to be notified of a specific type of event.

Subscribing to events
Use the Subscription Manager to manage notifications for events that are generated by suite tools.

Customizing the Data Quality Exception Console to send exception sets to different IBM BPM process applications in IBM Stewardship Center

To use your own IBM BPM process applications to manage exception sets that are generated by IBM InfoSphere Information Server exception providers, you must configure the Data Quality Exception Console to send exception sets to your process applications.

Before you begin

- Follow the steps that are outlined in Create your own IBM BPM process application with the Stewardship Center Application Toolkit.
- To register IBM BPM applications and create new subscriptions to exception events for those applications by using Subscription Manager, you must have the **Exception Management Steward Manager** role.
- To work with the default subscription for NEW_EXCEPTIONS_EVENT, you must have the InfoSphere Information Server Suite Administrator role.

About this task

You need to register your IBM BPM process applications so that they are notified when a user of the Data Quality Exception Console chooses to manage new exception sets with IBM Stewardship Center. Then, you use Subscription Manager to update the subscription that was configured by default to send all exception sets to the Data Quality Exception sample process application in IBM Stewardship Center.

Procedure

1. Define a friendly name for each IBM BPM process application. You use this name when you register a callback and create subscriptions.
2. Register a callback to each IBM BPM process application, and specify the following values:

Table 12. Parameter values for the istool event registerCallback command

Parameter	Value
-authentication parameters	The user name and password for the computer where IBM BPM is installed.
-eventTypeName	NEW_MANAGED_SET_EVENT
-callbackType	HTTP_POST
-callbackName	The friendly name that you define for your IBM BPM process application.
-callbackDescription	The friendly description that you define to help identify your IBM BPM process application.
-callbackService	The REST URL to your IBM Stewardship Center sample process application. Use the format, `https://<bpm_server>:<SSL_port>/rest/bpm/wle/v1/service/<BPM_process_application_acronym>@<service>?action=start` Where: *<BPM_process_application_acronym>* The acronym for your IBM BPM process application. *<service>* Name of the service in the IBM BPM process application that is accessible by URL.

For example, if you define the friendly name for your IBM BPM process application as *DataStage_exception_workflow*, you might run the following command:

```
event registerCallback -eventTypeName "NEW_MANAGED_SET_EVENT"
-callbackType "HTTP_POST" -callbackName "DQ_workflow"
-callbackDescription "When a NEW_MANAGED_SET_EVENT occurs, this
callback is invoked to send the exception set to
DataStage_exception_workflow."-callbackService "https://
my_bpm_server.com:9443/rest/bpm/wle/v1/service/
DQWKFLW?@StartProcess?action=start" -u isadmin -p infsv123pwd
```

3. To specify which exception sets are sent to which IBM BPM process application, create new subscriptions with event filters.

   a. Specify these values for each subscription

Table 13. Properties of a NEW_MANAGED_SET_EVENT subscription

Subscription properties	Values
Name	A friendly name for your subscription, for example, *DQ_workflow*
Event Type	*NEW_MANAGED_SET_EVENT*
Notification Type	Application

Subscription properties	Values
Application	The friendly name that you defined for your IBM BPM process application. This name is also the value that you specified on the `–callbackName` parameter when you registered the callback. To send exception sets to the Data Quality Exception sample process application, select `IBM Stewardship Center - Data Quality Exception`
Application user name	TheIBM BPM cell admin ID.
Application password	The password for the IBM BPM cell admin ID that you specified for the **Application Username** property

    b. Specify values for the event filters for each subscription to limit which exception sets are sent to which IBM BPM process application in IBM Stewardship Center. You can limit by application or project, or for InfoSphere Information Analyzer, by data rule. You can use these event filters:

Table 14. Event filters to limit exception sets

Event filters	Valid values
applicationType	Information Analyzer Exception Stage
projectName	*<IA_project_name>* *<DS_project_name>*, for example *DQ_project*
exceptionSummaryName	• If you specify `Information Analyzer` for **applicationType**, specify the name of a data rule in the specified project. • If you specify `Exception Stage` for **applicationType**, specify the name of an exception descriptor in an exception stage in the specified project. **Note:** You receive notifications for events of the selected type that occur in any stage in any job in the specified project where the stage contains an exception descriptor of the specified name. To limit notifications to events from a single stage, define a unique name for the exception descriptor in that stage. **Note:** Your subscription includes events of the selected type that occur in any stage in any job in the specified project where the stage contains an exception descriptor of the specified name. To limit the subscription to events from a single stage, define a unique name for the exception descriptor in that stage.

When a user of the Data Quality Exception Console selects an exception set and clicks **Manage**, the exception set is sent to the appropriate IBM BPM process application, depending on the filters that you specify in your subscription.

4. Optional: If you do not want exception sets sent to a specific IBM BPM process application, delete the NEW_MANAGED_SET_EVENT subscription for that process application. For example, the subscription for the default Data Quality Exception sample process application has the following properties:

Table 15. Properties of the subscription that was configured by default to send all exception sets to the Data Quality Exception sample process application

Property	Value
Name	NEW_MANAGED_SET_EVENT/*<Unique_ID>*
Event type	NEW_MANAGED_SET_EVENT
Application	IBM Stewardship Center - Data Quality Exception
Event filters	*None*

5. Optional: To restore the default configuration so that all exception sets that are generated by IBM InfoSphere Information Server exception providers are sent to the Data Quality Exception sample process application, delete all subscriptions for the event type NEW_MANAGED_SET_EVENT, and then add a new subscription, specifying the properties in Table 15. Do not specify filter properties for this subscription.

Example

A data steward manager wants to route exception sets that are generated by InfoSphere Information Analyzer to be managed with the Data Quality Exception sample process application, and route exceptions sets that are generated by the InfoSphere DataStage project, *IOD_Bank_Demo* to be managed with a different IBM BPM process application, *DataStage_exception_workflow*.

On the Subscriptions tab of the Subscription Manager, the administrator deletes the subscription to the Data Quality Exception sample process application that is created by default.

Next, the administrator creates two subscriptions, both with NEW_MANAGED_SET_EVENT as the event type and Application as the form of notification. For the first subscription, the administrator specifies IBM Stewardship Center - Data Quality Exception as the application and filters the events by using the **applicationType** property to specify that the subscription is for only those exception events from InfoSphere Information Analyzer. With this subscription, only exceptions that are generated by InfoSphere Information Analyzer are sent to the Data Quality Exception sample process application.

Next, the administrator creates another subscription with the same properties, specifies DataStage_exception_workflow as the application, and filters the events by using the **projectName** property to specify that the subscription is for only those exception events from the project *IOD_Bank_Demo*. With this subscription, exception sets that are generated by the *IOD_Bank_Demo* project are sent to the *DataStage_exception_workflow* process application. Exceptions that are generated by other InfoSphere DataStage projects are ignored and not sent to the IBM Stewardship Center.

Related tasks:

"Sending exception sets to IBM Stewardship Center" on page 47
You use the Data Quality Exception Console to send certain exception sets to IBM Stewardship Center to be managed by the Data Quality Exception sample process

application or by your own IBM BPM process applications.

Related information:

Subscriptions
A subscription is a request to be notified of a specific type of event.

Subscribing to events
Use the Subscription Manager to manage notifications for events that are generated by suite tools.

Chapter 5. Managing governance events and exceptions with IBM Stewardship Center

You can use IBM Stewardship Center to help manage data governance policy implementation with IBM InfoSphere Information Governance Catalog, and to resolve exceptions that are identified by IBM InfoSphere Information Server components.

To work with exceptions in the IBM Stewardship Center, the data rules or jobs that generate exceptions must be run so that exception sets can be collected by the Data Quality Exception Console. You must then send jobs, rules or projects to the IBM Stewardship Center from the Data Quality Exception Console.

Opening IBM Stewardship Center

You open IBM Stewardship Center with the IBM Business Process Manager Quick Start console or by using its URL.

Before you begin

IBM Stewardship Center is a browser-based application that is imported into IBM Business Process Manager Standard. You must be an existing IBM Stewardship Center user. Contact your system administrator if you do not have a IBM Stewardship Center user ID.

Procedure

- Open the Process Portal from the IBM Business Process Manager Quick Start console.
  1. Open the IBM Business Process Manager Quick Start console.
  2. Click the **Process Portal** icon to open the Process Portal.
- Open a web browser and enter the following url:

  `https://<server>:<port>/ProcessPortal`

  Where:

  server   The name of the computer where IBM Business Process Manager is installed.

  port   The default port number for the server is 9443. If you use the default HTTPS 9443 port, you can omit the port number, and 9443 is used automatically.

Dashboards for monitoring

IBM Stewardship Center contains IBM Process Portal dashboards to monitor team performance and process performance.

A dashboard is a user interface that displays status information about a business process. IBM Stewardship Center uses the capabilities of IBM Process Portal Dashboard.

The following table contains descriptions for the IBM Process Portal dashboards:

Table 16. Dashboards used with the IBM Stewardship Center.

Dashboard Name	Description
Process Performance	Displays the status of the tasks by task type. The categories of task status are overdue, at risk, or on track. This dashboard appears only for users who are listed on the Process Owner team.
Team Performance	Displays the status of the tasks by team or group. The categories of team status are overdue, at risk, or on track. This dashboard appears only for users who are listed in the Data Steward Manager team.

Related information:

⇨ Team performance dashboard

⇨ Process performance dashboard

Managing information governance rules with the Email Notification and Governance Rule Approval sample process applications in IBM Stewardship Center

The Email Notification and Governance Rule Approval sample process applications notifies users by email when glossary and asset activities occur and defines a workflow that allows users to review and approve changes to information governance rules in IBM InfoSphere Information Governance Catalog. These sample process applications define teams and an email template that formats governance events to send to specified users.

Before you begin

Enable event notification in InfoSphere Information Governance Catalog

Procedure

1. In your email application, open the notification email that was sent from the Email Notification sample process application. If the notification is for an information governance rule that was set to PendingApproval status and you are a member of the RuleApproversGroup team, click the link to open IBM Stewardship Center.

2. Log in as a user from the RuleApproversGroup team.

   In the **My Work** tab, in the My Tasks pane, locate the task for the approval that was referenced in your notification email.

3. Optional: To view additional information about a task, click the gray box that surrounds the task title.

4. Click the title of the task, and then click **Claim Task** to assign that task to you.

   After the task is assigned to someone, no other user can approve the information governance rule or return it to Draft status.

5. In the Approve Information Governance Rule window, review the information about the rule change. You can also click the **Click here** link to view the Details page of the information governance rule in InfoSphere Information Governance Catalog.

6. Resolve the task in one of the following ways:

- To approve the changes to the information governance rule and put the rule in the Approved state, click **Approve**.
- To return the information governance rule to the Draft state, click **Return to draft**.

Managing exceptions with the Data Quality Exception sample process application in IBM Stewardship Center

The Data Quality Exception sample process application defines a workflow to allow a stewardship team to manage data quality issues.

The Data Quality Exception sample process application uses a team assignment option to route exception management tasks to users. All users on a particular team can view all available tasks in that team's task list, and are able to claim tasks from that list.

Managing exceptions

The Data Quality Exception sample process application defines the steps that a data steward follows to manage exceptions that are generated by exception providers in InfoSphere Information Server.

Before you begin

To work with exceptions in the IBM Stewardship Center, the data rules or jobs that generate exceptions must be run so that exception sets can be collected by the Data Quality Exception Console. You must then send exception sets to the IBM Stewardship Center from the Data Quality Exception Console. If expected exception sets are not displayed in the IBM Stewardship Center, contact your system administrator.

Procedure

1. "Opening IBM Stewardship Center" on page 57 as a data steward, such as the predefined user Donna Silvers.
2. In the My Work screen, in the My Tasks window, review all unclaimed tasks for your data steward team. This list of unclaimed tasks can include both newly identified exceptions and rejected updates that must be corrected.
3. Optional: To view additional information about a task, click the gray box that surrounds the task title.
4. Click the **task title** to claim that task. When you claim a task that is related to exception management, the Exception Set page opens and displays the exception record for that task.
5. Optional: Fix the exception records in one of the following ways:

Option	Description
Edit the value of each record individually in the Exception Records table.	1. From the Exception Set page, select a record from the Exception Record table, and click **Edit Record**. 2. Click the value in the New Value column to change it. The change is indicated by a check mark in the Updated column. 3. Click **Save** to save your fixes. 4. On the Exception Set page, enter a comment in the **Data Steward comment** field at the top of the Exception Set page that explains your changes. 5. Click **View Fixes** at the top of the Exception Records table to see your fixes that are highlighted in the table. 6. Click **Submit Fixes**. Submitted fixes are routed to the appropriate data steward manager for approval or rejection.
Export the entire exception set to a `.csv` file to make batch changes and then import your fixes back into the system.	1. From the Exception Set page, click **Export**. You are prompted to log in. Provide the user name and password credentials for the computer that you are exporting to. 2. Follow prompts from your web browser to save the csv file. 3. After you edit the `.csv` file, on the Exception Set page click **Import**. Browse to your changed `.csv` file and follow prompts from your web browser to import. 4. Optional: Click **View Fixes** to see your fixes that are highlighted in the table. 5. Enter a comment in the **Data Steward comment** field at the top of the Exception Set page that explains your changes. 6. Click **Submit Fixes**. Submitted fixes are routed to the appropriate data steward manager for approval or rejection.
If you think the exceptions were caused by a system error, escalate the task to the data steward manager team.	1. From the Exceptions page, click **Escalate Task**. 2. Enter a comment that explains the reason for the escalation. 3. Click **Submit**. Submitted escalations are routed to the appropriate data steward manager to be processed.

Approving or rejecting fixes

The Data Quality Exception sample process application defines the steps that a data steward manager follows to approve or reject exception changes that are submitted by data stewards.

Procedure

1. "Opening IBM Stewardship Center" on page 57 as a data steward manager, such as the predefined user, Max McGregor.
2. In the My Work tab, in the My Tasks window, review unclaimed tasks that are assigned to you. The unclaimed tasks can include exception fixes that must be approved or rejected and escalated tasks that must be handled.
3. Optional: To view additional information about a task, click the gray box that surrounds the task title.
4. Click the **task title** to claim that task. When you claim a task that is related to exception management, the Exception Set page opens and displays the exceptions records for that task.
5. Review both the changes and comments that the data steward provided.
6. Optional: Enter a comment in the comment field at the top of the page that explains the action you plan to take.
7. Depending on the action that is needed by your task, complete one of the following steps:
   - From the Exception Set page, click **Approve Fixes**. Approved fixes are sent to the data source owner team.
   - From the Exception Set page, click **Reject Fixes**. Rejected fixes are routed back to the data steward team for correction.
   - For escalations, refer the issue to the appropriate individual. After the suggested changes are made, click **Finish** from the Exception Set page.

Resolving exceptions by updating the data in the data source

The Data Quality Exception sample process application sample defines the steps that a data source owner follows to resolve exceptions based on appropriate information that a data steward provided and that has been approved by a data steward manager.

Procedure

1. "Opening IBM Stewardship Center" on page 57 as a data source owner, such as the predefined user Chad Williams.
2. In the My Work tab, in the My Tasks window, review the unclaimed tasks that are assigned to you.
3. Optional: To view additional information about a task, click the gray box that surrounds the task title.
4. Click the **task title** to claim that task. When you claim a task that is related to exception management, the Exception Set page opens and displays the exceptions records for that task.
5. Review the changes and comments from the data steward and data steward manager.
6. Edit the data source and make the approved changes.
7. On the Exception Set page, click **Apply Fixes**. The task is removed from the task list.

Customizing the Data Quality Exception sample process application

The Data Quality Exception sample process application provides two reusable business process definitions (BPDs). You can customize the BPDs to work in your business environment.

The BPDs in the sample application define a set of teams with members who have access to complete specific tasks in the workflow, and lanes for each team of users who participate in the process.

The sample BPDs route tasks to one of three teams: Data Steward team, Data Steward Manager team, or Data Source Owner team.

Table 17. Provided BPDs and Decision Services

BPD Name	BPD Description
Correct Exceptions	Routes tasks that are generated by exception events to the data steward team and escalation tasks to the data steward manager team.
Approve Updates	Routes updates that are provided by a data steward to the data steward manager, and then routes approvals to the correct data source owner. Rejects are routed to the data steward team.

You can use the IBM Business Process Manager Process Designer to customize the Data Quality Exception sample process application in the following ways:
- Update the predefined team list.
- Add additional lanes to the existing BPDs.

For more information about using IBM Business Process Manager Process Designer to customize the BPDs, see Creating processes in IBM Process Designer.

Using the Stewardship Center Application Toolkit

You can use the Stewardship Center Application Toolkit to design IBM Business Process Manager Standard process applications that integrate with IBM InfoSphere Information Server to manage and resolve data quality issues in your organization.

You can use the Stewardship Center Application Toolkit to retrieve information about exceptions that are generated by IBM InfoSphere Information Server products. You use this toolkit to extend the capabilities of existing IBM Business Process Manager Standard process applications (such as the Data Quality Exception sample process application) or design new process applications that integrate with IBM InfoSphere Information Server products. For example, you can design a IBM Business Process Manager Standard process application that routes tasks that are related to systematic errors to a team that is responsible for resolving these issues.

Components in the Stewardship Center Application Toolkit

The Stewardship Center Application Toolkit provides four integration services and several associated business objects that are required by these services.

The following integration services are provided in the Stewardship Center Application Toolkit:

GetExceptionDescriptor
> This integration service retrieves exception information that is generated from the last run of a data rule in InfoSphere Information Analyzer or that is generated from the last InfoSphere DataStage job run for a job that includes an exception stage. The information that is retrieved includes the provided application type, exception name, exception descriptor UID, and project name. The service returns the ExceptionDescriptor business object.

GetExceptions

This integration service retrieves a list of exception records from the analysis database or the exceptions database. The ExceptionDescriptor business object, which is generated from the GetExceptionDescriptor service, is required as an input of the service. This service returns the TableData business object, which includes TableDataColumnDefinition and TableDataRow objects.

SendFixes

This integration service uses the pendingChanges attribute of the TableData business object to send the fixes that are available for a particular exception set. These fixes and their corresponding exception records can later be retrieved by the getExceptions service. The TableData and ExceptionDescriptor business objects are required inputs of this service.

SetStatus

This integration service updates the status of an exception, which is stored within the exception manager. The ExceptionDescriptor business object, which is generated from the GetExceptionDescriptor service, is required as an input of the service in addition to the status value and a comment. This service returns the HttpResponse business object, which includes a response code and a response code reason, in addition to the message body.

Creating your own IBM Business Process Manager Standard process application with the Stewardship Center Application Toolkit

You can use the Stewardship Center Application Toolkit to create an IBM Business Process Manager process application that uses information about exceptions that are generated by IBM InfoSphere Information Server exception providers.

Before you begin

- Install the event and exception management components
- Install and configure IBM Business Process Manager

Procedure

1. To make the Stewardship Center Application Toolkit available in IBM Business Process Manager Standard, import the Data Quality Exception sample process application.
2. In IBM Business Process Manager Standard, create a process application and add a dependency to the Stewardship Center Application Toolkit. Follow the tasks outlined in Creating your first project in IBM Business Process Manager Standard Knowledge Center.
3. Define an alias for an IBM InfoSphere Information Server user that has the **Exception Management Steward Manager** role.
   a. Log in to the IBM WebSphere Application Server Administration Console on IBM Business Process Manager Standard and click **Security** > **Global security**.
   b. In the Authentication section, click **Java Authentication and Authorization Service** > **J2C Authentication data** > **New**.
   c. Define an alias for an IBM InfoSphere Information Server user with the **Exception Management Steward Manager** role. For example, *isuseralias*.
   d. Specify the user ID and password.

e. Click **OK**.

f. Click **Save**. The final Alias name is listed in Alias Table.

   Note: Depending on your settings IBM WebSphere Application Server
   might add a prefix to the alias name that you specified.

4. Open the Process Admin Console and configure the values for the Exposed
   Process Variables (EPVs) for your process application.

   iisUrl `https://<services_tier_host_name>:<SSL_port_number>`, where
   <services_tier_host_name> is the name of the computer where the IBM
   InfoSphere Information Server services tier is installed and
   <SSL_port_number> is the IBM InfoSphere Information Server SSL port.

   iisUserAlias
   The final alias name that is listed in the Alias table, as mentioned in
   step 3f.

What to do next

Configure the Data Quality Exception Console to send exception sets to yourIBM
Business Process Manager Standard process application.

Appendix A. Product accessibility

You can get information about the accessibility status of IBM products.

The IBM InfoSphere Information Server product modules and user interfaces are not fully accessible.

For information about the accessibility status of IBM products, see the IBM product accessibility information at http://www.ibm.com/able/product_accessibility/index.html.

Accessible documentation

Accessible documentation for products is provided in IBM Knowledge Center. IBM Knowledge Center presents the documentation in XHTML 1.0 format, which is viewable in most web browsers. Because IBM Knowledge Center uses XHTML, you can set display preferences in your browser. This also allows you to use screen readers and other assistive technologies to access the documentation.

The documentation that is in IBM Knowledge Center is also provided in PDF files, which are not fully accessible.

IBM and accessibility

See the IBM Human Ability and Accessibility Center for more information about the commitment that IBM has to accessibility.

Appendix B. Contacting IBM

You can contact IBM for customer support, software services, product information, and general information. You also can provide feedback to IBM about products and documentation.

The following table lists resources for customer support, software services, training, and product and solutions information.

Table 18. IBM resources

Resource	Description and location
IBM Support Portal	You can customize support information by choosing the products and the topics that interest you at www.ibm.com/support/ entry/portal/Software/ Information_Management/ InfoSphere_Information_Server
Software services	You can find information about software, IT, and business consulting services, on the solutions site at www.ibm.com/ businesssolutions/
My IBM	You can manage links to IBM Web sites and information that meet your specific technical support needs by creating an account on the My IBM site at www.ibm.com/account/
Training and certification	You can learn about technical training and education services designed for individuals, companies, and public organizations to acquire, maintain, and optimize their IT skills at http://www.ibm.com/training
IBM representatives	You can contact an IBM representative to learn about solutions at www.ibm.com/connect/ibm/us/en/

Appendix C. Accessing the product documentation

Documentation is provided in a variety of formats: in the online IBM Knowledge Center, in an optional locally installed information center, and as PDF books. You can access the online or locally installed help directly from the product client interfaces.

IBM Knowledge Center is the best place to find the most up-to-date information for InfoSphere Information Server. IBM Knowledge Center contains help for most of the product interfaces, as well as complete documentation for all the product modules in the suite. You can open IBM Knowledge Center from the installed product or from a web browser.

Accessing IBM Knowledge Center

There are various ways to access the online documentation:
- Click the **Help** link in the upper right of the client interface.
- Press the F1 key. The F1 key typically opens the topic that describes the current context of the client interface.

  Note: The F1 key does not work in web clients.
- Type the address in a web browser, for example, when you are not logged in to the product.

  Enter the following address to access all versions of InfoSphere Information Server documentation:

  `http://www.ibm.com/support/knowledgecenter/SSZJPZ/`

  If you want to access a particular topic, specify the version number with the product identifier, the documentation plug-in name, and the topic path in the URL. For example, the URL for the 11.3 version of this topic is as follows. (The ⇒ symbol indicates a line continuation):

  `http://www.ibm.com/support/knowledgecenter/SSZJPZ_11.3.0/⇒`
  `com.ibm.swg.im.iis.common.doc/common/accessingiidoc.html`

  Tip:

  The knowledge center has a short URL as well:

  `http://ibm.biz/knowctr`

  To specify a short URL to a specific product page, version, or topic, use a hash character (#) between the short URL and the product identifier. For example, the short URL to all the InfoSphere Information Server documentation is the following URL:

  `http://ibm.biz/knowctr#SSZJPZ/`

  And, the short URL to the topic above to create a slightly shorter URL is the following URL (The ⇒ symbol indicates a line continuation):

  `http://ibm.biz/knowctr#SSZJPZ_11.3.0/com.ibm.swg.im.iis.common.doc/⇒`
  `common/accessingiidoc.html`

Setting up a locally installed information center

IBM Knowledge Center contains the most up-to-date version of the documentation. However, you can install a local version of the documentation as an information center and configure your help links to point to it. A local information center is useful if your enterprise does not provide access to the internet.

Set up a locally installed information center on the computer of your choice by completing one of the following actions:

- Use the installation instructions that come with the information center installation package
- Use the installation instructions in the following technote: http://www-01.ibm.com/support/docview.wss?uid=swg27042237

Changing help links to refer to locally installed documentation

After you install and start your locally installed information center, you can use the **iisAdmin** command on the services tier computer to change the documentation location that the product help links refer to. (The ⇒ symbol indicates a line continuation):

Windows
```
IS_install_path\ASBServer\bin\iisAdmin.bat -set -key ⇒
com.ibm.iis.infocenter.url -value http://<host>:<port>/help/topic/
```

AIX Linux
```
IS_install_path/ASBServer/bin/iisAdmin.sh -set -key ⇒
com.ibm.iis.infocenter.url -value http://<host>:<port>/help/topic/
```

Where <host> is the name of the computer where the information center is installed and <port> is the port number for the information center. The default port number is 8888. For example, on a computer named server1.example.com that uses the default port, the URL value would be http://server1.example.com:8888/help/topic/.

Obtaining PDF documentation

The PDF file books are available online and can be accessed from this support document: https://www.ibm.com/support/docview.wss?uid=swg27008803&wv=1.

Appendix D. Providing feedback on the product documentation

You can provide helpful feedback regarding IBM documentation.

Your feedback helps IBM to provide quality information. You can use any of the following methods to provide comments:

- To provide a comment about a topic in IBM Knowledge Center that is hosted on the IBM website, sign in and add a comment by clicking **Add Comment** button at the bottom of the topic. Comments submitted this way are viewable by the public.
- To send a comment about the topic in IBM Knowledge Center to IBM that is not viewable by anyone else, sign in and click the **Feedback** link at the bottom of IBM Knowledge Center.
- Send your comments by using the online readers' comment form at www.ibm.com/software/awdtools/rcf/.
- Send your comments by e-mail to comments@us.ibm.com. Include the name of the product, the version number of the product, and the name and part number of the information (if applicable). If you are commenting on specific text, include the location of the text (for example, a title, a table number, or a page number).

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Table 19. Use of cookies by InfoSphere Information Server products and components

Product module	Component or feature	Type of cookie that is used	Collect this data	Purpose of data	Disabling the cookies
Any (part of InfoSphere Information Server installation)	InfoSphere Information Server web console	• Session • Persistent	User name	• Session management • Authentication	Cannot be disabled
Any (part of InfoSphere Information Server installation)	InfoSphere Metadata Asset Manager	• Session • Persistent	No personally identifiable information	• Session management • Authentication • Enhanced user usability • Single sign-on configuration	Cannot be disabled

Table 19. Use of cookies by InfoSphere Information Server products and components (continued)

Product module	Component or feature	Type of cookie that is used	Collect this data	Purpose of data	Disabling the cookies
InfoSphere DataStage	Big Data File stage	• Session • Persistent	• User name • Digital signature • Session ID	• Session management • Authentication • Single sign-on configuration	Cannot be disabled
InfoSphere DataStage	XML stage	Session	Internal identifiers	• Session management • Authentication	Cannot be disabled
InfoSphere DataStage	IBM InfoSphere DataStage and QualityStage Operations Console	Session	No personally identifiable information	• Session management • Authentication	Cannot be disabled
InfoSphere Data Click	InfoSphere Information Server web console	• Session • Persistent	User name	• Session management • Authentication	Cannot be disabled
InfoSphere Data Quality Console		Session	No personally identifiable information	• Session management • Authentication • Single sign-on configuration	Cannot be disabled
InfoSphere QualityStage Standardization Rules Designer	InfoSphere Information Server web console	• Session • Persistent	User name	• Session management • Authentication	Cannot be disabled
InfoSphere Information Governance Catalog		• Session • Persistent	• User name • Internal identifiers • State of the tree	• Session management • Authentication • Single sign-on configuration	Cannot be disabled
InfoSphere Information Analyzer	Data Rules stage in the InfoSphere DataStage and QualityStage Designer client	Session	Session ID	Session management	Cannot be disabled

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