IBM Control Center overview

Last Updated: 2021-03-05

IBM® Control Center is a centralized monitoring and management system.

It gives operations personnel the capability to continuously monitor the status of Configuration Managers, engines, and adapters across the enterprise for the following server types from one central location:

* IBM Sterling Connect:Direct®
* IBM Sterling Connect:Enterprise®
* IBM Sterling B2B Integrator
* IBM Sterling File Gateway
* IBM Global High Availability Mailbox
* IBM Sterling Connect:Express
* IBM QuickFile
* IBM MQ Managed File Transfer
* Many FTP servers

Operations personnel can also monitor the creation, modification, and deletion of Sterling Secure Proxy objects.

In addition, you can determine where your IBM Control Center is installed and running and manage the configurations of Sterling Connect:Direct servers.

Monitoring and managing your file transfer and B2B environments

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IBM® Control Center can help you answer questions about activities in your managed file transfer and B2B environment.

It helps you answer questions such as:

* Did my business process run on time?
* Did my file transfer take place when it should have?
* Are my servers operating the way they should?

IBM Control Center gives you tools to effectively monitor and manage your environment by giving you a common, centralized view of that environment. This insight into the environment helps you offer higher levels of service to your internal and external customers. IBM Control Center accomplishes this service level management by:

* Providing a real-time view of all your servers across products, platforms, and locations. To facilitate monitoring “like” servers, you can group them into server groups, by business unit or location for example, for a single view of system-wide activity.
* Monitoring activities such as business processes and file transfers.
* Monitoring the overall health of the environment in terms of server status, adapter status, Global Mailbox data center status, and cluster health.
* Using a common set of capabilities to create an early warning system for exceptions by:
  + Ensuring critical processing windows are met through service level criteria (SLCs) you set up for your environment.
  + Reducing the impact on downstream processing by verifying that expected processing occurs based on rules you define that are triggered by server events.
  + Providing proactive notification for at-risk business processes in the form of emails, SNMP traps, and alerts.
* Consolidating information for throughput analysis, capacity planning, post-processing operational or security audits, and workload analysis. This consolidation helps ensure that your file transfer and B2B environments are functioning at a high level.
* Reducing the risk of error associated with manual system administration, including:
  + The requirement to log on to each individual server to view activity
  + The necessity of separately configuring servers for error and exception notification

Ensuring your IBM Control Center environment is highly available

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Starting in IBM® Control Center V6.1, you can choose to have a high availability environment. There are the high-level tasks you need to complete to ensure your IBM Control Center environment is highly available.

Ensure that you complete the following high-level tasks to implement IBM Control Center in a high availability environment:

* Ensure that your database server is configured for high availability. See [Detailed System Requirements](http://www-01.ibm.com/support/docview.wss?uid=swg27036103).
* Install two or more event processors (EPs) and ensure that they started successfully.
  + Ensure that each EP has a unique name.
* Ensure that you install the Cognos® Business Intelligence server on at least one EP.
* Configure a load balancer for the event repository and your IBM Control Center web console.
* Ensure that you can view your EPs in the web console from **Manage** > **Event processors**.
  + Check to ensure that the first EP that started is marked as the controller EP.
  + Set server assignment, failover, and monitoring policies for your EPs.
  + Check to make sure that your servers are assigned to an EP. If your servers were not automatically assigned to an EP, then you can set an EP assignment.

Benefits by server type

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IBM® Control Center provides benefits for each server type supported.

**Sterling Connect:Direct®**

* Provides centralized visibility and control of Sterling Connect:Direct server environments by enabling you to consolidate and collect activity data and server data for various purposes.
* Allows you to suspend, release, or delete processes from a central location.
* Lets you configure notification about processes, or steps in processes, that did or did not occur or are late.
* Lets you monitor the queue depths of the Execution, Hold, Timer, and Wait queues.
* Enables you to configure multiple servers on multiple platforms, including configuration of Sterling Connect:Direct and Sterling Connect:Direct Secure Plus.

**Sterling Connect:Direct File Agent**

* Allows you to know when a Sterling Connect:Direct File Agent submits processes to a Sterling Connect:Direct server and to what server it submits those processes.
* Allows you to know when processes are not submitted to a Sterling Connect:Direct server.
* Enables you to know when a user has updated the configuration data for a Sterling Connect:Direct File Agent.
* Lets you configure notification about processes, or steps in processes, that did or did not occur or are late.

**Sterling Connect:Enterprise®**

* Provides visibility to the processes and files transferred into and out of mailboxes.
* Lets you configure notification about processes, or steps in processes, that did or did not occur or are late.

**Sterling B2B Integrator**

* Offers centralized visibility into the business processes and file transfer activities of your trading partners in a clustered, multi-node environment.
* Allows you to rerun business processes from a central location.
* Allows monitoring of the list nodes, clustered nodes, adapters, and perimeter server.
* Lets you configure notification about processes, or steps in processes, that did or did not occur or are late.
* Lets you monitor queue depths for Sterling B2B Integrator queues.
* Enables you to view Sterling B2B Integrator Java environment details, location of Sterling B2B Integrator installation, adapter properties and configuration, and perimeter service configuration.

**Sterling File Gateway**

* Provides enhanced, granular control over monitoring and alerting options compared to what is available in Sterling File Gateway.
* Enables monitoring of arrived file events, route events, and delivery events.
* Lets you configure notification about processes, or steps in processes, that did or did not occur or are late.
* Allows monitoring of Mailbox Service and Mailbox Browser Interface (MBI).

**Global Mailbox**

* Provides detailed information about the data centers, servers, and services that compose the Global Mailbox system so that you can diagnose and troubleshoot issues.
* Displays a graphical representation of your Global Mailbox system so that you can see data centers that servers depend upon, other data centers that share services with a data center, and connections between these elements.
* Enables monitoring of Global Mailbox system events, message creation, and replication so that you can troubleshoot issues when they occur.

**Sterling Secure Proxy**

* Provides monitoring of Sterling Secure Proxy Configuration Managers and their associated engines and adapters, also known as proxies.
* Allows you to view logs in a readable format and monitor the modifications made to all Sterling Secure Proxy objects: accepters, adapters, Configuration Manager users, external authentication servers, engines, key stores, netmaps, password policies, perimeter servers, policies, single signons, step injections, system globals, system SSL information, and user stores.
* Lets you configure notification about processes, or steps in processes, that did or did not occur or are late.

**Sterling Connect:Express**

* Provides visibility of files transferred.
* Allows you to centrally monitor file transfers.
* Lets you configure notification about processes, or steps in processes, that did or did not occur or are late.

**QuickFile**

* Provides visibility of files transferred.
* Allows you to centrally monitor file transfers.
* Lets you configure notification about processes, or steps in processes, that did or did not occur or are late.

**MQ MFT**

* Provides visibility of files transferred.
* Allows you to centrally monitor file transfers.
* Lets you configure notification about processes, or steps in processes, that did or did not occur or are late.

**FTP servers**

* Provides visibility of files transferred.
* Allows you to centrally monitor FTP usage.
* Lets you configure notification about file transfers that did or did not occur or are late.
* Allows you to identify where FTP usage violates corporate policy so that you can move FTP file transfers to a more secure and reliable solution, such as the IBM Sterling Managed File Transfer suite of products and solutions.

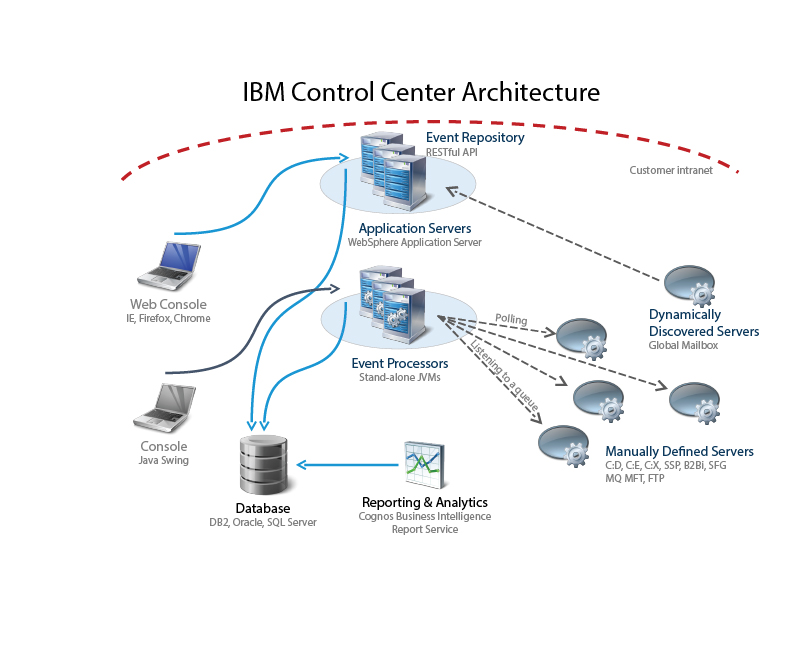
# IBM Control Center technical overview

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IBM® Control Center consists of user interfaces, application servers, event processors (EPs), and databases. IBM Control Center supports dynamically discovered servers and manually defined servers, and collects events from these types of servers in different ways.

The following diagram depicts the IBM Control Center architecture. Click each component in the diagram to read the detailed component introduction.

*Figure 1. IBM Control Center architecture*



## **User interfaces**

IBM Control Center user interfaces include the console and web console.

The web console is a web-based user interface that is hosted by the WebSphere Application Servers. The web console provides functions that are used routinely, such as monitoring activity and status, managing configuration objects, and running reports. All web consoles, regardless of the application servers they are connected to in a cluster, display the same information.

The console is a user interface that can be installed locally and opened as a web application on the computer. The console provides similar user functions as the web console for monitoring server activity and status. In addition, the console allows administrators to configure IBM Control Center and the configuration objects that are necessary for monitoring servers, manage the configurations of IBM Sterling Connect:Direct® servers, and define reports than can be run from the console or web console. Like web consoles, when multiple EPs are implemented, all consoles connected to EPs in a cluster display the same information.

## **Onboarding servers**

IBM Control Center supports onboarding servers through dynamic discovery and manual definition.

Dynamically discovered servers, such as IBM Global High Availability Mailbox, are onboarded when the servers begin posting events to the event repository (ER) through RESTful Application Programming Interfaces (APIs). WebSphere Application Servers host the ER. You do not need to configure IBM Control Center before the servers post events to the ER. The ER servlet dynamically discovers the new servers, assigns them to EPs, and writes events to the unprocessed event table in the IBM Control Center database. EPs then collect events of assigned servers from the unprocessed event table and process those events for rules and alerts.

Manually defined servers, such as IBM Sterling Connect:Direct and IBM Sterling B2B Integrator, are onboarded after the servers are configured in IBM Control Center through the console. EPs need to collect events from manually defined servers through polling, listening on a queue, or receiving Simple Network Management Protocol (SNMP) traps. EPs process events from manually defined servers immediately after the events are received.

## **Processing events**

After the ER servlet writes events from the dynamically discovered servers to the unprocessed event table, EPs poll the unprocessed event table for events from the dynamically discovered servers they are monitoring. Events from the servers are then passed through a series of services on the IBM Control Center EP for processing, including the visibility service, metadata service, rule service, and service level criteria (SLCs) service. The events trigger rules and SLCs, and associated actions. After EPs process the events, EPs write these events to the events table and remove them from the unprocessed event table.

EPs communicate with manually defined servers through the node services. EPs handle events from these servers immediately after the events are received. Similar to dynamically discovered servers, events from manually defined servers are also passed through visibility service, metadata service, rule service, and SLC service. Events also trigger rules and SLCs, and are written to the events table in the database after they are processed.

## **Databases and the reporting engine**

IBM Control Center uses a production database to store events and statistics that are gathered from the monitored servers. The unprocessed events table in the production database is used to record events that are received from dynamically discovered servers. The events table is used to record the processed events from both dynamically discovered servers and manually defined servers for historical purposes.

A reports database is used to generate IBM Control Center reports. Cognos Business Intelligence server is used as the reporting engine with the production and reports databases to access and report information about monitored servers.

## **High availability**

The high availability architecture can use one or more EPs and WebSphere Application Servers. When you install multiple EPs and WebSphere Application Servers, you can implement IBM Control Center in a high availability environment. When an EP in the cluster is down, the servers that are assigned to the EP are temporarily distributed to other EPs for event processing according to the defined EP failover policy. WebSphere Application Servers can host multiple web consoles and ERs. When a web console or an ER is down, the workload is failed over to other web consoles or ERs if a load balancer is configured.

If multiple EPs are implemented and connect to the same databases, you can set up and configure two Cognos Business Intelligence servers to support a high availability environment. One Cognos Business Intelligence server works as the primary reporting engine and the other is the secondary reporting engine.

IBM Control Center supports native database high availability solutions such as the database high availability solution provided by Oracle Real Application Clusters 12c.

# Application servers

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Application servers are a cluster of WebSphere® Application Servers that host the web console and the event repository (ER) servlets.

Application servers enable the ER servlet to forward events to the unprocessed events (CC\_UNPROCESSED\_EVENT) table in the IBM® Control Center database.

When multiple WebSphere Application Servers are installed, these servers are running in a cluster and are highly available. WebSphere Application Servers can host multiple web consoles and ERs. All web consoles, regardless of the application server they are connected to in a cluster, display the same information. You can choose to configure a load balancer for the application server. When an ER is down, the workload can be failed over to other ERs if the load balancer is used.

Because the complete copy of completed file transfers and completed processes data is stored in the IBM Control Center database, the web console obtains the data from the database instead of event processors (EPs).

# Event repository

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Event repository (ER) is the place where events from dynamically discovered servers, such as IBM® Global High Availability Mailbox servers, are posted to in the standard event format. ERs are hosted on WebSphere® Application Servers.

Existing events are converted to the standard event format before they are written to the ER. The ER receives and stores the events in the unprocessed events (CC\_UNPROCESSED\_EVENT) table in the IBM Control Center database. When an ER is down, the workload can be failed over to other ERs if the load balancer is configured.

The ER HTTP endpoint shares the same host address and port number with the application server; for example, http://host:port/sccwebclient/events.

# Event processors

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An event processor (EP) performs duties that were performed by the IBM® Control Center engine before V6.1. With an EP, you can manage and monitor multiple servers and process events from the monitored servers.

When multiple EPs are configured in a high availability environment, they are automatically or manually assigned to monitor servers depending on the configurations. All events from a server are processed by the same EP. The functions of all EPs are the same except for the controller EP. The controller EP is responsible for monitoring EPs and performing functions that cannot be delegated to other EPs. When an EP is down, the servers that are monitored by the EP are temporarily distributed to other EPs in the cluster according to the failover and load balancing policies configured for the EP.

If you have the administrator permission of IBM Control Center, you can rebalance your server assignments among EPs in the same cluster, including EPs that are not running. To do so, go to **Manage** > **Event processors** in the web console and click the rebalance button. When you click the button, your servers are evenly distributed among all EPs in the cluster based on the number of servers, except servers that are not allowed to reassign. This rebalance can take several minutes to complete.

**Important:** By default, Sterling Connect:Enterprise® for z/OS®, FTP z/OS, and WS\_FTP server types are pinned to a specific EP. These server types are not included in a rebalance or monitored by another EP when the assigned EP stops running. If you want to unpin these server types or to include them in a rebalance, in the advanced properties for each server, clear the **Pin this server to the currently assigned event processor** setting.

Event processor configuration in the web console

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If you have the administrator authority of IBM® Control Center, you can view and configure event processors (EPs) and the servers that each EP monitors in the IBM Control Center web console.

To view or configure the EPs and servers that each EP monitors, in the web console, click **Manage** > **Event processors**. Installed EPs are displayed on the event processor list pane. The controller EP is marked with an asterisk (\*).

**Attention:** Ensure that the system times for your EPs are synchronized. If the clocks are not synchronized, then the events for your EPs can display out of order in reports, for example.

The page contains the following tabs:

* **Event processor details** - this tab displays the general information about the EP, along with the properties and server assignment, failover, and monitoring policies accordions. The following list provides more information about your EPs:
  + **Properties** - Lists the properties and values of the selected EP.
  + **Server assignment, failover, and monitoring policies** - The policies that you set to determine the server assignment, failover, and monitoring for the EP. The following list contains the policies that you can set:
    - Accept newly added servers - Determines whether the controller EP can assign new servers to the selected EP. Select this option if the EP has more capacity for monitoring more servers.
    - Accept servers from failed event processors - Determines whether the controller EP can temporarily assign the servers that are monitored by a stopped EP to the selected EP. Select this option if the EP has more capacity for monitoring more servers.
    - Allow other event processors to monitor servers upon failure - Determines whether the controller EP can temporarily assign the servers that are monitored by the selected EP to other EPs when the selected EP stops. You might not want to select this option if the EP is dedicated for testing.
* **Servers** - This tab displays the servers that the EP is monitoring. You can also reassign servers by dragging the server to the new EP. The icon on each server indicates the server status. The icon with the down arrow indicates that the server is down. The icon with an exclamation mark indicates that the server status is unknown. The icon with two vertical bars indicates that the monitoring of the server was paused. The icon with a check mark indicates that the server is running.

If you choose to reassign an IBM WebSphere® File Transfer Protocol (WS\_FTP), or IBM Sterling Connect:Enterprise® for z/OS® server, you need to reconfigure the server to send Simple Network Management Protocol (SNMP) traps to the new EP. If you do not reconfigure the server, you might lose the traps. If you pin the servers to the assigned EP, the servers are not reassigned in case of failure and you do not need to reconfigure the servers. However, you might still lose the traps.

For an IBM Sterling Connect:Direct® File Agent, you must reconfigure the server to send SNMP traps to the controller EP instead. To prevent reconfiguration, you also need to pin the server to the assigned EP.

# Event processing

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While events from dynamically discovered servers and manually defined servers are collected in different ways, event processors (EPs) process events all in the same way.

## **Collecting events from dynamically discovered servers**

Dynamically discovered servers, such as IBM® Global High Availability Mailbox, post events to a RESTful API known as the event repository (ER) that is hosted by the application servers. Because these servers post events to IBM Control Center, these types of servers do not need to be explicitly registered or added by an administrator. IBM Control Center is able to dynamically discover these types of servers.

Dynamically discovered servers do not need to be manually added through the IBM Control Center console. To monitor a dynamically discovered server, you need to configure the server to publish events to the URL of event repository, in the standard event format.

IBM Control Center dynamically discovers new servers that post events and automatically assigns the servers to the least busy EP.

## **Collecting events from manually defined servers**

You need to configure manually defined servers in IBM Control Center, such as IBM Sterling Connect:Direct® and IBM Sterling B2B Integrator, before the servers can communicate with IBM Control Center.

Events from manually defined servers are not posted to the ER. Instead, events are collected by the assigned EPs through polling, listening on a queue, or receiving Simple Network Management Protocol (SNMP) traps.

## **Processing events**

EPs communicate with manually defined servers and process events from these servers right after the events are received. Node services in IBM Control Center are responsible for the communications that transpire between monitored servers and IBM Control Center.

Similar to dynamically discovered servers, events from manually defined servers are written to the EVENTS table in the database after they are processed.

IBM Control Center EP processes events from both dynamically discovered servers and manually defined servers and evaluates events through DVG membership, rules, and SLCs. Events are passed through the following series of services:

1. Visibility service - The visibility service applies data visibility group (DVG) criteria to all events before the events are passed on to the metadata service.
2. Metadata service - The metadata service applies enabled and active metadata rules to all events.
3. Rule service - The rule service applies enabled, active, linked, and non-linked rules to all events after they are processed by the metadata rule service. Events that are handled by the rule service trigger rules and their associated actions to be taken. The following actions can be taken:
   * Generating an email
   * Sending an SNMP trap
   * Raise an alert
   * Sending a self-defined server command to the server the event resulted from
   * Running a self-defined operating system command or script by the EPs to the operating system
4. SLC service - The SLC service generates events when things do or do not happen within a certain time frame or occur for a specified duration according to performance objectives that you define. Those events are run through the rules service to take actions.

Controller event processor

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A controller event processor (controller EP) is an event processor that monitors other EPs in the cluster and is responsible for functions that cannot be delegated to other EPs.

The first event processor that is started in the IBM® Control Center is designated as the controller EP. If the controller EP is down, one of the active EPs is designated as the new controller EP. When the former controller EP is restarted, it rejoins the cluster as a regular EP and resumes monitoring the servers it was previously monitoring.

The controller EP periodically checks if any EPs in the cluster are down. If the controller EP detects that an EP that was up and now is down, it temporarily distributes the servers that the EP monitors to the other EPs according to the defined EP failover policy. The controller EP is responsible for functions that cannot be delegated to other EPs, such as:

* Processing service level criteria (SLCs)
* Processing traps sent by a Sterling Connect:Direct® File Agent
* Triggering configuration jobs
* Partitioning and purging databases

# Databases

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Databases refer to traditional relational databases such as IBM® DB2®, Oracle, or Microsoft SQL Server. Event processors (EPs) that connect to and have access to a common database are part of the same cluster. IBM Control Center typically uses a production database and a reports database to record, store, and report information.

## **Production database**

IBM Control Center records the information that is gathered from the monitored servers for historical purposes in the production database. For example, data that is obtained from monitored servers and is used in user reports is stored in the production database. As information is received from manually defined servers, events are generated and passed through the rule, metadata, and SLC services as they are written to the events table of the database. For dynamically discovered servers, events are first written to the unprocessed event table. After events are processed, they are written to the events table.

The database server should be used by IBM Control Center only and should not be shared with other applications.

## **Reports database**

To generate IBM Control Center reports, the Cognos® Business Intelligence server is used with the production and reports databases to access and report information about monitored servers.

## **Staging database**

If you have a staging database and are upgrading to IBM Control Center V6.1, you can continue to use the staging database. However, the staging database is no longer efficient for reading, writing, storing, and maintaining. If you are using both a production and staging database, you should move your data to the partitioned database.

## **Database partitioning**

IBM Control Center can be set up to use database partitioning. This process allows the data in the production database to be partitioned by date. Database partitioning can improve database performance. For more information, see [Database partitioning](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.configure.doc/scc_data_base_partitioning.html#concept_gpg_lmn_4q).

# Reporting and analytics

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IBM® Control Center uses the IBM Cognos® Business Intelligence server as the reporting engine.

To generate IBM Control Center reports, the Cognos Business Intelligence server is used with the production and reports databases to access and report information about monitored servers.

Each Cognos Business Intelligence server connects to an event processor (EP). If the EP goes down, the Cognos Business Intelligence server stops working. The Cognos Business Intelligence server is used to generate reports for data from all EPs in the cluster. You can configure a secure connection to encrypt transactions between the IBM Control Center EP and Cognos Business Intelligence server and between the console and Cognos Business Intelligence server when you are running reports.

If multiple EPs are implemented and connect to the same databases, you can set up and configure two or more Cognos Business Intelligence servers to support a high availability environment. One Cognos Business Intelligence server works as the primary, active, reporting engine, and the other is the secondary, passive, reporting engine. If you install more than one Cognos Business Intelligence server, you can configure some of the servers to not automatically start when an EP starts. However, the Cognos Business Intelligence servers are going to stop when an EP is stopped.

# Servers

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IBM® Control Center supports onboarding servers through dynamic discovery and manual definition.

## **Dynamically discovered servers**

Dynamically discovered servers, such as IBM Global High Availability Mailbox servers and IBM Transformation Extender Advanced, are monitored by IBM Control Center through listening for events that are posted to the event repository (ER).

You do not need to configure IBM Control Center before the servers post events. You need to configure the dynamically discovered server to publish events to IBM Control Center.

The ER dynamically discovers the new servers, assigns them to event processors (EPs), and writes events to the unprocessed event table in the IBM Control Center database. EPs then collect events from the assigned servers through collecting events from the unprocessed event table.

## **Manually defined servers**

Manually defined servers are servers that you need to manually configure in IBM Control Center for monitoring. IBM Control Center monitors these servers through polling, listening on a queue, or receiving Simple Network Management Protocol (SNMP) traps.

IBM Control Center supports the following manually defined servers:

* IBM Sterling Connect:Direct®
* IBM Sterling Connect:Direct File Agent
* IBM Sterling Connect:Enterprise®
* IBM Sterling B2B Integrator
* IBM Sterling File Gateway
* IBM Sterling Connect:Express
* IBM QuickFile
* IBM MQ Managed File Transfer
* FTP servers

EPs collect and receive events from the manually defined servers that are assigned to them, and process the events immediately after they are received.

IBM Control Center retrieves the following data from the manually defined server resources:

**Sterling Connect:Direct**

* Statistics
* Processes

**Sterling Connect:Enterprise**

Information about files that are transferred into mailboxes and out of mailboxes:

* Remote connect batches
* Autoconnect batches
* Offline batches

**Sterling B2B Integrator**

* File transfer activities
* Business process activities

**Sterling File Gateway**

* Arrived file events
* Delivery events
* Route events

**Sterling Connect:Express**

* Queued process data
* Statistics

**Sterling Secure Proxy**

* Information about audit events for each engine that is defined to the Sterling Secure Proxy Configuration Manager
* Heartbeat messages with information on the Sterling Secure Proxy Configuration Manager, Configuration Manager engines, and the adapters for the engines
* Audit Event messages with information on Sterling Secure Proxy objects that are created, updated, and deleted

**QuickFile**

Messages with event information that is queued on the QuickFile server

**MQ MFT**

Messages with event information about files that are transferred to or from the MQ MFT server

**FTP server**

Messages with event information about files that are transferred to and from the FTP server

You need to configure the manually defined servers in IBM Control Center so that IBM Control Center can access these resources. For some manually defined servers, you need to configure them on the server side as well.

User interfaces

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IBM® Control Center has two user interfaces: the console and web console.

Both the IBM Control Center console and web console enable you to display information that is gathered from event processors (EPs) through an HTTP or HTTPS connection. Access to and functions of these interfaces are limited by the role-based privileges assigned to a user. The user interfaces serve the following purposes:

**Console**

The console is a Java-based user interface that enables you to configure IBM Control Center, view activity and status, and define and run reports. A console is installed locally on the computer that is connected to one of the EPs. When multiple EPs are implemented, all consoles display the same information regardless of the EPs that they are connected to. If a server is added through dynamic discovery and is assigned to an EP, any consoles that are connected to an EP in the cluster display the new server in the Server groups list.

**Web console**

The web console is a web-based user interface of IBM Control Center. It provides functions such as monitoring activity and status, managing configuration objects, and running reports. All web consoles that are attached to EPs in a cluster display the same information in near real time. If a server is added through dynamic discovery and is assigned to an EP, any web consoles that are connected to an EP in the cluster display the new server in the server list.

The following table describes the functions available in the consoles, which is limited by the interface (console versus web console) and the user's role-based privileges.

| **Function** | **Console** | **Web Console** |
| --- | --- | --- |
| Configure Sterling Connect:Direct® servers with configuration management. | X |  |
| Create and maintain users and data visibility groups. | X |  |
| Create and manage rules, actions, calendars, email lists, schedules, and message categories. | X | X |
| Create and manage simple service level criteria (SLCs). |  | X |
| Create and manage standard SLCs, wildcard SLCs, and workflow SLCs. | X |  |
| Change system settings. | X | X |
| Stop Sterling Connect:Direct servers. | X |  |
| Manage processes for Sterling Connect:Direct, Sterling B2B Integrator, and Sterling B2B Integrator by acting on queued processes (deleting, suspending, or releasing a process). | X |  |
| Launch the Sterling Connect:Direct Browser User Interface to access Sterling Connect:Direct, the Sterling B2B Integrator Dashboard to access Sterling B2B Integrator, and the Sterling File Gateway Console to access Sterling File Gateway. | X |  |
| View server properties, such as server version. | X | X |
| View and handle alerts from the Active Alerts Monitor and Handled Alerts Monitor. View alert properties and the rule or SLC properties associated with an alert.1 |  | X |
| View server activity from the Queued Process Monitor and the Completed Process Monitor.1 |  | X |
| View completed file transfers from the Completed File Transfers Monitor. |  | X |
| Check status from the Server Status Monitor, Daemon Status Monitor, and Adapter Status Monitor. | X | X |
| View process statistics for a particular process or for one or more servers, server groups, or a particular server type. | X | X |
| Clear processes from the queued processes list. |  | X |
| View a list of processes that were cleared by users. |  | X |
| Create reports. | X |  |
| Run and view reports. | X | X |
| View the volume of files for selected servers over a specific time period. |  | X |
| View the size of files for selected servers over a specific time period. |  | X |
| Access the workspace to view and personalize content (based on user permissions). |  | X |
| Access IBM Cognos Workspace to configure the workspaces for IBM Control Center users. | X |  |
| Export widgets from the workspace, and email the file to another user. |  | X |
| Create custom Cognos reports. | X |  |
| Import RAVE visualizations into Cognos. | X |  |
| Export workspaces from one IBM Control Center instance and import into another IBM Control Center instance. |  | X |
| Export widgets from one IBM Control Center instance and import into another IBM Control Center instance |  | X |
| View the details of the IBM Control Center EPs, view the details of the servers that each EP monitors, and reassign servers. |  | X |
| Customize the columns to be displayed for the Completed File Transfers and Completed Processes tables. |  | X |
| 1 In the console, the menu for these functions are still available under **Monitor**. You are redirected to the web console to view the alert and process details. |  |  |

The consoles provide the following types of tools to assist you:

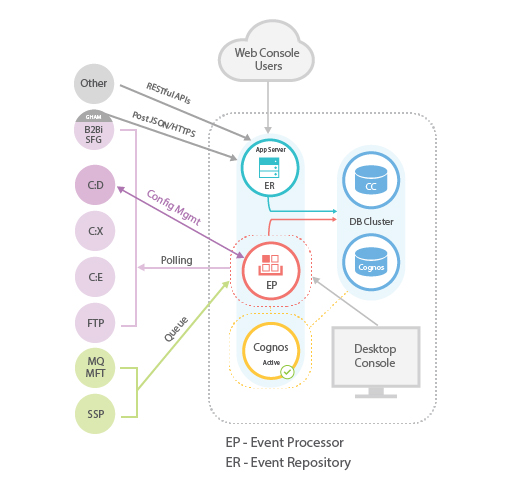
* Help - The consoles provide a full, searchable help system accessed from the Help menu. In addition, the status bar in many dialog boxes displays valid parameter values. Tooltips include a short parameter definition, valid entry requirements, and default value if any.
* Wizards - When you are defining IBM Control Center objects, such as rules, actions, and SLCs, wizards guide you through the process.

# High availability

Last Updated: 2021-03-05

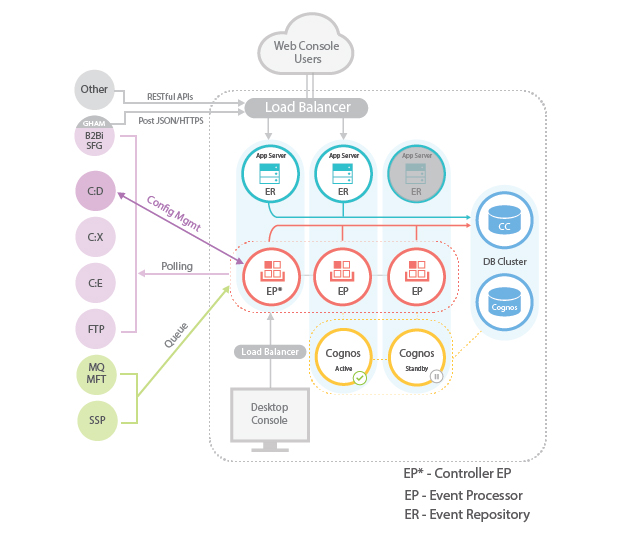
When you install more than one event processor (EP), WebSphere® Application Server, and at least one Cognos® Business Intelligence server, you can implement IBM® Control Center in a high availability environment.

To understand what an IBM Control Center high availability implementation can look like, it is best to first consider a non-high availability implementation as shown in the following diagram:



In a non-high availability environment with IBM Control Center, your components include the console, web console, reporting database, production database, one EP, one Cognos Business Intelligence server, one WebSphere Application Server, and your selected monitored servers.

The following diagram shows IBM Control Center deployed in a high availability environment:



In a high availability environment with IBM Control Center, your components include the console, web console, reporting database, production database, load balancers, multiple EPs, multiple instances of WebSphere Application Server, multiple Cognos Business Intelligence servers, an event repository, and your selected monitored servers.

## **High availability with event processors**

In a high availability environment, the servers that are monitored by a failed EP can be temporarily reassigned to other EPs in the cluster. If multiple EPs are installed, the controller EP periodically checks to see whether any EPs in the cluster are down. If the controller EP detects that an EP is down, the controller EP temporarily distributes the servers that the EP monitors to other EPs. You can configure an EP to run for event processing purposes without running a WebSphere Application Server or Cognos Business Intelligence server.

## **High availability with controller event processors**

All EPs in a cluster periodically check whether the controller EP is active. The first EP that notices that the controller EP is down takes over as the controller EP. When the controller EP is back online, it joins the cluster as a normal EP.

## **High availability with the console**

When a console connects to an EP in the cluster, you can view all servers that are monitored by all EPs in the cluster and their property information. With the console, you can also perform the following actions for the servers that are monitored by any EPs in the cluster:

* Pausing or resuming monitoring
* Refreshing the adapter list for a Sterling B2B Integrator server
* Refreshing the BP list for a Sterling B2B Integrator server
* Retrieving the license key for a Sterling B2B Integrator server
* Resetting the Max Concurrent Process Count
* Testing connection
* Turning on or turning off the debug level logging

You cannot pause or resume monitoring, test connections, or turning on and off debug level logging with dynamically discovered servers.

The consoles also supports failover. When a console connects to an EP in the cluster and the EP goes down, the console automatically connects to another active EP in the cluster.

## **High availability with WebSphere Application Server**

Multiple web consoles and event repositories (ERs) can be hosted on multiple WebSphere Application Server. You can configure a load balancer to evenly distribute web console sessions and ER workloads across any WebSphere Application Server that is installed, and to provide failover of web consoles and ERs. In a high availability environment, you can configure a WebSphere Application Server to not automatically shut down when an EP is stopped.

## **High availability with Cognos Business Intelligence servers**

If multiple EPs are implemented and connect to the same databases, you can set up and configure multiple Cognos Business Intelligence servers to support a high availability environment. One Cognos Business Intelligence server works as the primary reporting engine and the other Cognos Business Intelligence servers are the secondary reporting engines. When one Cognos Business Intelligence server is down, all the Cognos Business Intelligence server connections are switched to the other active Cognos Business Intelligence servers. If you install more than one Cognos Business Intelligence server, then you can configure some of the servers to not automatically start when an EP starts. However, when an EP stops the Cognos Business Intelligence server is going to stop.

You can access the workspaces and reports through any web console in the high availability environment.

## **High availability with databases**

IBM Control Center supports native database high availability solutions such as the database high availability solution provided by Oracle Real Application Clusters 12c.

Configuration objects

Last Updated: 2021-03-05

IBM® Control Center uses information you configure to determine how the engine needs to monitor servers in your environment and the user roles that have access to servers and IBM Control Center objects.

You define the following types of items when configuring IBM Control Center:

* Servers in your environment and how they might logically be grouped
* Roles that specify actions users can perform and data they can view and work with on the servers and server groups defined in IBM Control Center
* Calendars and schedules that define the day, date, and time constraints to place on the work that IBM Control Center performs
* Data visibility groups (DVGs) that limit what data (events) a user has access to
* Email lists that you can associate with rules/actions to notify groups of individuals when an event occurs
* Rules that specify server events that cause actions to be taken, and when those rules are active
* Service level criteria (SLCs) that specify processing must occur within a specific time frame and for a specific duration of time

# IBM Control Center information

Last Updated: 2021-03-05

The result of the configuration objects you define for IBM® Control Center is a wealth of information about the servers in your environment. An understanding of the types of information available in IBM Control Center will help you to access the information you need about those servers.

Types of information

Last Updated: 2021-03-05

IBM® Control Center provides you with several different types of information about the servers in your environment.

**Status**

Visual status indicators display in the consoles. You can tie rules/actions to status when you are defining work for IBM Control Center to perform.

**Server, adapter, Global Mailbox system data centers, and daemon status**

The following status monitors are available:

* Server Status Monitor
* Adapter Status Monitor
* Daemon Status Monitor
* Event Processor Status Monitor (web console only)

The Environmental health widget in the web console dashboard provides an aggregated health status of the servers in your environment, which gives you a place to begin troubleshooting server issues. The Environmental health widget shows a server, adapter (for Sterling B2B Integrator), file agent (for Sterling Connect:Direct®), data center (for Global Mailbox), daemon (for Sterling Connect:Enterprise®), or engines (for Sterling Secure Proxy) chart for each server type in your environment that you have permission to view. Each chart provides a color indicator and a corresponding status indicator of the ratio of alerts for the nodes, adapters, clusters, Global Mailbox system data centers, or daemons. From the charts, you can navigate to lists of filtered or unfiltered alerts. You can also access a list of status changes for a server type when applicable.

**Activity status**

The Process Activity Monitors display completed processes (Completed Process Activity Monitor) and queued processes (Queued Process Activity Monitor) on single or multiple servers or server groups, all managed servers of one type, or all managed servers.

The Recent file transfer activity widget in the web console dashboard provides a graph that depicts volume of file transfers over time for each type of monitored server. From the widget, you can access a list of transfers for each server type to troubleshoot server issues. The Recent file transfer activity widget provides server information for the servers that you have permission to view. Each line on the graph shows the volume of transfer activity for all servers of a server type for 30 days.

**Actions**

When an event occurs and it matches a rule, an action for the matched rule is initiated, such as displaying an alert in the consoles, sending an email, generating an SNMP trap, or initiating OS or server commands.

**File transfer status**

The Completed files list shows a searchable, and filterable list of the most recently recorded file transfers that you have permission to view. Searching and filtering this list facilitates troubleshooting file transfer issues. Access the Completed files list directly from the web console main menu, from the Recent file transfer activity widget, and the Transfer scorecard widget. To access the Completed files list from the web console, click **Monitor**> **Completed files**. To access the completed files list from one of the widgets, click the section of the widget graph about which you want more information.

**Alerts**

Visual indicators (icons) displayed in the consoles with varying severity levels that you specify in actions. Alerts are displayed as active or handled. The alerts monitors (Active Alerts Monitor and Handled Alerts Monitor) provide near real-time display of alert data as it occurs.

**Attention:** The Active Alerts monitor shows only the latest alert when more than one alert is triggered by the same SLC instance or linked rule.

When working with alerts, you can:

* View the properties of an alert, and you can view the statistics associated with a process related to an alert. You can also view the SLC or rule that generated the alert.
* Add a comment to the alert.
* Move an alert from active to handled status. When you move an alert to handled, you are required to add a comment about the update.

The Active alerts widget in the web console dashboard provides an aggregated view of total active alerts. From the widget, you can navigate to a list of active alerts to troubleshoot issues with servers monitored by IBM Control Center. The Active alerts widget displays alert information for the servers that you have permission to view. The widget counts the number of active alerts for three severity levels: high, medium, and low.

**Emails**

When an event occurs, an email can be sent to an individual or list of individuals defined as the action of a rule.

**SNMP trap**

A message generated and sent to one or more Simple Network Management Protocol (SNMP) hosts.

**Logs**

Information saved in log files for historical purposes that can help you troubleshoot issues.

**Audit logs**

Standard report of changes made to both IBM Control Center objects and Sterling Connect:Direct server configuration objects. Audit logs can be run as an on-demand report or displayed on the IBM Control Center console.

**Reports**

Used to gather information about the servers in your environment.

**Standard IBM Control Center Reports**

Produced from the IBM Control Center consoles on demand or automatically from schedules. Standard reports can grab any field in the database, and you can specify filtering criteria on report data. However, you cannot manipulate the format of standard reports or use them to perform complex queries, and they cannot be used to do calculations.

# Monitor status

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You can monitor the status of managed servers, Sterling B2B Integrator adapters, Sterling Secure Proxy, Sterling Connect:Enterprise® master daemons, and Global Mailbox data centers in your enterprise through the IBM® Control Center status monitors and the Environmental Health widget.

The status monitors include: Server Status Monitor, Adapter Status Monitor, and Daemon Status Monitor. You can open multiple monitor windows at the same time.

You can also determine the status of servers, adapters, daemons, and Global Mailbox system data centers in the web console Environmental Health widget.

So, how do you find out that the status of your server, adapter, Global Mailbox system, or daemon changes without constantly checking the status monitors or the Environmental Health widget? You can define rules based on status that cause a certain action to be taken when that status exists. For example, you can define a rule based on a server down condition with an action of sending an email notification status.

Monitor server status

Last Updated: 2021-03-05

The Server Status Monitor window provides a dynamic summary of managed server activity.

You can view the following types of server status:

* An individual server or server group
* Multiple servers or server groups
* All managed servers of one type
* All managed servers

The following types of information are displayed for servers; however, the exact information that displays depends on server type:

* Current server status, represented by a status icon
* Server IBM® Control Center name or alias
* Number of high, medium, and low severity alerts on the server
* Version of Sterling Connect:Direct®, Sterling Connect:Enterprise®, Sterling Connect:Express, QuickFile, Sterling B2B Integrator, Sterling Secure Proxy, or FTP software on a server
* For Sterling Connect:Direct, Sterling Connect:Express, QuickFile, and Sterling B2B Integrator servers, information about maximum number of concurrent sessions on the server. You can also see the number of executing and non-executing processes for these server types.
* For MQ MFT servers, information about maximum number of concurrent transfers on the server.
* For Sterling Secure Proxy servers, status of engines associated with a Sterling Secure Proxy Configuration Manager. Each Configuration Manager is considered to be as separate Sterling Secure Proxy instance that can be monitored by IBM Control Center.

Monitor adapter status

Last Updated: 2021-03-05

The**Adapter Status Monitor**displays summary information about adapters that are running on Sterling B2B Integrator and Sterling Secure Proxy servers. You can also view adapter and Sterling B2B Integrator perimeter server properties through the Adapter Status Monitor.

The following types of information are displayed for Sterling B2B Integrator adapters:

* Whether the adapter is turned on or off
* Whether the adapter is currently running or stopped
* Display name for the adapter
* Nodes on which the adapter is deployed
* Type of adapter
* Sterling B2B Integrator perimeter server through which the adapter accesses the network
* State of the perimeter server

IBM® Control Center does not monitor Sterling B2B Integrator protocol adapters when those adapters are not actively monitoring business processes or protocols. For clustered Sterling B2B Integrator servers, status is monitored for all servers in a cluster. However, to avoid duplication, only unique adapter entries are displayed.

The following types of information are displayed for Sterling Secure Proxy adapters:

* Adapter name
* Date the adapter was started
* State of the adapter: started, stopped, error, pending, or warning
* System message
* Listen port for the adapter
* Protocol used by the adapter

Monitor daemon status

Last Updated: 2021-03-05

The **Daemon Status Monitor**displays information about the master daemon status of managed Sterling Connect:Enterprise® for UNIX servers.

The following types of information are displayed:

* Daemon name
* Type of daemon
* Host workstation the daemon is running on
* Daemon process identifier, originator, resource, and session identifier
* Whether the daemon is up or down

Monitor Sterling Secure Proxy engine status

Last Updated: 2021-03-05

In the IBM® Control Center web console, the**Engine Status Monitor** displays summary information about Sterling Secure Proxy engines that are running on Sterling Secure Proxy servers.

The following types of information are displayed for Sterling Secure Proxy engines:

* Name of the engine
* Whether the engine is running or stopped
* Date that the engine was started
* Date when the engine configuration was updated last
* Version of the engine and the Configuration Manager associated with the engine
* System message

Monitor Global Mailbox status

Last Updated: 2021-03-05

You can get the health status of your Global Mailbox system from the Environmental Health widget.

The widget provides an at a glance status for the data centers in your Global Mailbox system. You can click a data center chart to access information about the servers in each data center and the server services and components. The following types of information are available for Global Mailbox:

* The current status for each of the servers, including management nodes, in a data center represented by a status icon
* A graphical representation of the relationships between servers and their services and connections
* Detailed information about the servers and their components, such as server details, properties, services, connections, messages, and events

Monitor activity

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From the Activity Monitors, you can view a configurable number of completed processes and queued processes for monitored servers.

From the two Activity Monitors: Queued Process Activity Monitor and Completed Process Activity Monitor. From the monitors, you can view processes on single or multiple servers or server groups, all managed servers of one type, or all managed servers. In addition to viewing queued and completed processes from the monitors, you can also:

* Take a snapshot of process activity for queued and completed Sterling Connect:Direct®, Sterling Connect:Express, QuickFile, MQ MFT, and Sterling B2B Integrator processes.
* Sort the entries in the order you want to see them and then print or save the entries.
* View statistics that are related to any process listed in the Process Activity Monitors
* View process statistics that are related to one or more servers, server groups, or server type
* Restart Sterling B2B Integrator business processes
* Act on a queued Sterling Connect:Direct and Sterling Connect:Express process, including deleting, suspending, or releasing it
* Use an existing process in the Completed Process Activity Monitor list to set up monitoring for future transactions using the**Monitor this** option in the IBM® Control Center web console.

Users who are DVG-restricted can access only the process steps that are associated with their data visibility group. As a result, DVG-restricted users cannot delete, suspend, or release queued processes. In the Completed Process Activity Monitor, users who are DVG-restricted see only the completed processes that are tagged for the DVGs associated with their role. However, unrestricted users see the maximum number (defaults to 200) configured by the administrator.

When you are viewing process activity in the Queued Process Activity Monitor, consider the following additional information about monitored server types:

* IBM Control Center does not “know” about FTP or Sterling Connect:Enterprise® activity until it occurs. Therefore, the Queued Process Activity Monitor is disabled for those server types.
* Held and deferred processes do not display in the Queued Process Activity Monitor for Sterling Connect:Express for z/OS.
* For QuickFile, IBM Control Center can detect when a packageStart event occurs, which is generated before an upload or download. However, IBM Control Center does not generate events for uploads or downloads until they are complete. As a result, you might not see any QuickFile activity in the monitor due to the timing of the events that are generated by IBM Control Center.

Working with alerts

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When a rule is triggered and its action is set to an alert level, the alert is displayed in the Active Alerts Monitor.

To remove this alert from the Active Alerts monitor, it must be “handled” (moved with appropriate comment to the Handled Alerts Monitor). Consider the following scenario:

* A rule is in place that watches for a Server Down event and generates a Sev 1 alert for that event.
* When that server goes down, an alert is generated and displayed in the Active Alerts Monitor.
* An operator who is watching the Active Alerts monitor notices the alert, investigates the server, and restarts the server.
* After the server is back up, the alert needs to be “handled” by specifying an appropriate comment, such as “restarted the server.”
* The user ID and the date and time when the alert was “handled” are recorded in the database along with the comment.
* The alert is moved to the Handled Alerts Monitor.

# Scenarios

Last Updated: 2021-03-05

Two types of scenarios are provided to help you: a sample implementation scenario and configuration scenarios. These scenarios provide guidance for helping you to plan your implementation and configure IBM® Control Center to meet your monitoring objectives.

# Installing IBM Control Center

Last Updated: 2021-03-05

Carefully read this section to understand the procedures and best practices for the installation of IBM® Control Center.

Installation process

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There are multiple tasks that you must complete to install IBM® Control Center.

Perform the following high-level tasks to install IBM Control Center:

* Create production and reports databases for use by IBM Control Center
* Install and configure the IBM Control Center engine
* Run the **configCC** utility after you install IBM Control Center if you are using a UNIX installation or a console installation.
* Log on to the IBM Control Center engine using the IBM Control Center console

To install IBM Control Center, you complete the following tasks at computers where you plan to install the IBM Control Center engine:

1. Review the [Release Notes](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.overview.doc/scc_releasenotes.html#releasenotes) and information center topics about installing, upgrading, and migrating IBM Control Center.
2. Download product updates from [IBM Passport Advantage®](http://www-01.ibm.com/software/passportadvantage/). Maintenance updates are available from [Fix Central](https://www-933.ibm.com/support/fixcentral/) or [Support Portal](https://www.ibm.com/support/home/).
3. Determine the computers where IBM Control Center will be installed. Based on the operating system, estimate the engine and database requirements. See [Detailed System Requirements](http://www.ibm.com/support/docview.wss?uid=swg27036103) and [Determining engine and database requirements](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.plan.doc/SCC_Determine_Engine_and_DB_Req.html#SCC_Determine_Engine_and_DB_Req).
4. Gather the database information that is required during the IBM Control Center installation. See [Creating and setting up databases](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/SCC_DBs.html) and [Detailed System Requirements](http://www.ibm.com/support/docview.wss?uid=swg27036103).
5. Create the production, and reports databases to store IBM Control Center processing information either on UNIX or Microsoft Windows.

**CAUTION:**

**A database with partitioned IBM Control Center tables is the preferred for better performance and data purging.**

The reports database is used by Cognos Business Intelligence server to generate IBM Control Center reports. Consult your database documentation and see [Configuring secure connections](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.secure.doc/SCC_Overview_Config_Secure_connect.html), [Creating DB2 databases and database users for Linux, UNIX, and Windows](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/SCC_DB2_Create_DB_Users.html), [Creating DB2 databases and database users on z/OS](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/SCC_DB2_Create_DB2_Users_zOS.html), [Creating an Oracle database and database users (schemas)](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/SCC_Oracle_Create_DB_Users.html), or [Creating Microsoft SQL Server databases and database users](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/SCC_MSSQL_Create_DBs_Users.html).

**Attention:** When you run theconfigCC utility after you install IBM Control Center, you are prompted for a Cognos dispatcher port value that is used by Cognos Business Intelligence server to communicate with IBM Control Center. Cognos Business Intelligence server uses the port that you specify and the following 15 ports for internal communications. If you install multiple copies of IBM Control Center on the same computer, you cannot use port 58085 for one installation and 9400 for another installation.

1. If you install IBM Control Center on z/Linux, make sure you install a 64-bit version of IBM System z/Linux on the computer where the engine will be installed. See [Detailed System Requirements](http://www.ibm.com/support/docview.wss?uid=swg27036103) and your z/Linux documentation.
2. If consoles will access the IBM Control Center engine using a secure connection, gather information to configure the HTTPS connection. See [Determine HTTPS information for the engine and console connection](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/SCC_Determine_HTTPS_Info.html).
3. Install the IBM Control Center engine. See [Installing and configuring IBM Control Center from the command line on UNIX](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/SCC_Install_Engine_Console_UNIX.html#ID12) or [Installing and configuring IBM Control Center by using the GUI installer on Microsoft Windows](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/SCC_Install_Engine_Console_Win.html#ID157).
4. If you plan to secure the connections between the IBM Control Center engine and the databases and between Cognos Business Intelligence server and the databases, complete the necessary setup on the database server, IBM Control Center engine, and Cognos Business Intelligence server. See [Creating a secure connection between the event processor and the databases](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.secure.doc/SCC_Create_Secure_Connection_Engine_DBs.html) and [Configuring a secure connection to the non-z/OS DB2 database server](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.secure.doc/SCC_Configure_Secure_Connection_DB2_DB.html), [Configuring a secure connection to the DB2 for z/OS database server](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.secure.doc/SCC_Configure_Secure_Connection_DB2_zOS_DB.html), [Configuring a secure connection to the Microsoft SQL Server 2008 database server](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.secure.doc/SCC_Configure_Secure_Connection_MSSQL_DB.html), or [Configuring a secure connection to the Oracle database server](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.secure.doc/SCC_Configure_Secure_Connection_Oracle_DB.html#SCC_Configure_Secure_Connection_Oracle_DB).
5. Configure Sterling Connect:Enterprise® for z/OS® servers to communicate with IBM Control Center. Skip this step if you are not using IBM Control Center to monitor Sterling Connect:Enterprise servers. See [Configuring Sterling Connect:Enterprise for z/OS](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/SCC_Configure_CE_zOS.html).
6. If you plan to monitor FTP servers, install the FTP agents. See [Setting up IBM Control Center to monitor Sterling Connect:Direct File Agent](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.configure.doc/SCC_Set_Up_Monitor_CD_File_Agents.html).

After you install the IBM Control Center engine, complete the following tasks at computers where you will run the IBM Control Center console:

1. Install the IBM Control Center console. See [Setting up a console](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/SCC_Set_Up_Console.html).
2. If the console needs to access the IBM Control Center engine using a secure connection, configure a secure connection between the IBM Control Center engine and the consoles. See [Configuring the console for a secure connection](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.secure.doc/SCC_Configure_Console_Secure_Connect.html).

Pre-installation checklist

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There are several considerations and tasks to complete before you decide to install IBM® Control Center for the first time. This pre-installation checklist helps you install IBM Control Center successfully for either a high availability or non-high availability environment.

**Important:** When you install IBM Control Center and configure the Microsoft SQL server, determine whether you want to enable the globalization parameter. If you enable this parameter, then IBM Control Center can store multi-byte characters among all of your event processors. If you do not enable this parameter during the initial installation and use a multi-byte character, then IBM Control Center cannot run and you must manually remove the character from your database. If you choose to enable the globalization parameter later, you must reinstall IBM Control Center.

The following table is a checklist of items to help you make decisions before you install IBM Control Center for the first time:

| **#** | **IBM Control Center pre-installation checklist** | **Related links** | **Your notes** |
| --- | --- | --- | --- |
| 1 | Review the release notes. | [Release Notes](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.overview.doc/scc_releasenotes.html#releasenotes) |  |
| 2 | Review topics about installing, including topics about a high availability and a non-high availability environment. Determine whether you plan to install one or more IBM Control Center event processors. | * [Installing IBM Control Center](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/SCC_Installing_SCC.html#installingsterlingcontrolcenter) * [Installing IBM Control Center in a high availability environment](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/scc_install_icc_high_availability.html#concept_ed2_qtc_bt) |  |
| 3 | Review topics about upgrading. | [Installing maintenance and fixes for IBM Control Center](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/scc_install_maintenance_fixes.html#concept_cvj_jjd_2p) |  |
| 4 | Review topics about migrating information. | [Upgrading and migrating](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.migrate.doc/scc_migrating_intro.html#concept_v3f_p3l_1p) |  |
| 5 | Download any product updates from IBM Passport Advantage. | [IBM Passport Advantage](http://www-01.ibm.com/software/passportadvantage/) |  |
| 6 | Determine the computers where IBM Control Center needs to be installed. |  |  |
| 7 | Determine which operating system you will install IBM Control Center on. IBM Control Center supports Microsoft Windows, Solaris, AIX, UNIX, and Linux operating systems. You can install IBM Control Center from the command line or with a GUI installer. | * [Installing IBM Control Center](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/SCC_Installing_SCC.html#installingsterlingcontrolcenter) * [Installing IBM Control Center in a high availability environment](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/scc_install_icc_high_availability.html#concept_ed2_qtc_bt) |  |
| 8 | If you are installing IBM Control Center in a high availability environment, determine on which event processors you will install Cognos® Business Intelligence server. You need to install the Cognos Business Intelligence on at least one event processor.  **Important:** If you install IBM Control Center with multiple EPs and do not install a Cognos Business Intelligence server on each EP, then you must ensure a successful Cognos Business Intelligence server connection on each EP. For more information, see [Ensuring a successful Cognos Business Intelligence server connection in a high availability environment](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/scc_ensure_cognos_server_connection_HA.html#task_ffl_kby_dv). | [Configuring Cognos Business Intelligence servers for high availability](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/scc_config_cognos_HA.html#task_kzb_gch_rs) |  |
| 9 | Based on the operating system, estimate the engine and database system requirements.  **Important:** If you are running at 80 percent or more CPU capacity with IBM Control Center V6.0, then in V6.1 you need to add more CPU. Adding more CPUs is necessary to properly scale an IBM Control Center environment with multiple EPs. | * [Detailed System Requirements](http://www.ibm.com/support/docview.wss?uid=swg27036103) * [Determining engine and database requirements](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.plan.doc/SCC_Determine_Engine_and_DB_Req.html#SCC_Determine_Engine_and_DB_Req) |  |
| 10 | Determine the type of database you will use to store IBM Control Center processing information. | * [Creating and setting up databases](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/SCC_DBs.html) * [Detailed System Requirements](http://www.ibm.com/support/docview.wss?uid=swg27036103) |  |
| 11 | If you install IBM Control Center on z/Linux, make sure that you install a 64-bit version of IBM System z/Linux on the computer where the event processor is installed. | * [Detailed System Requirements](http://www.ibm.com/support/docview.wss?uid=swg27036103) * Your z/Linux documentation |  |
| 12 | If consoles access the IBM Control Center event processor by using a secure connection, gather information to configure the HTTPS connection. | [Determine HTTPS information for the engine and console connection](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/SCC_Determine_HTTPS_Info.html) |  |
| 13 | If you are installing multiple IBM Control Center event processors, ensure an event processor is the controller event processor. All event processors must be installed on the same operating system. Ensure that any Sterling Connect:Direct® File Agent is configured to send traps to the controller EP. | [Controller event processor](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.overview.doc/scc_controller_event_processor.html#concept_p34_qvw_mt) |  |
| 14 | If you are installing multiple event processors, determine the server assignment, failover, and monitoring policy for the event processors. | [Setting a server assignment, failover, and monitoring policy for an event processor](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.admin.doc/scc_set_failover_load_policy_EP.html#task_i34_k4x_rs) |  |

Installation checklist

Last Updated: 2021-03-05

There are several considerations and tasks to complete when you install IBM® Control Center for the first time. The installation checklist helps you install IBM Control Center successfully for either a high availability or non-high availability environment.

**Important:** If you do not enable the globalization parameter for the Microsoft SQL server during an IBM Control Center installation, then you cannot use multi-byte characters. When you use a multi-byte character without enabling this parameter, then IBM Control Center cannot run and you must manually remove the character from your database. If you choose to enable the globalization parameter later, you must reinstall IBM Control Center.

The following table is a checklist of items to follow when you install IBM Control Center for either a high availability or non-high availability environment:

| **#** | **IBM Control Center installation checklist** | **Related links** | **Your notes** |
| --- | --- | --- | --- |
| 1 | Create your production and reports databases for IBM Control Center use. In a high availability environment, all event processors must use the same database. | * [Creating Linux, UNIX, and Windows DB2 databases and database users](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/SCC_Creating_LUW_DB2_Databases.html#SCC_Creating_LUW_DB2_Databases) * [Creating DB2 databases and database users on z/OS](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/SCC_DB2_Create_DB2_Users_zOS.html#SCC_DB2_Create_DB2_Users_zOS) * [Creating an Oracle database and database users (schemas)](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/SCC_Oracle_Create_DB_Users.html#SCC_Oracle_Create_DB) * [Creating Microsoft SQL Server databases and database users](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/SCC_MSSQL_Create_DBs_Users.html#SCC_MSSQL_Create_DBs_Users) * [Configuring secure connections](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.secure.doc/SCC_Overview_Config_Secure_connect.html#ID22) |  |
| 2 | Install and configure the IBM Control Center event processor. Complete the installation through a GUI installer or command line installer. | * [Installing and configuring IBM Control Center from the command line on UNIX](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/SCC_Install_Engine_Console_UNIX.html#ID12) * [Installing and configuring IBM Control Center by using the GUI installer on Microsoft Windows](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/SCC_Install_Engine_Console_Win.html#ID157) * [Installing and configuring IBM Control Center on z/Linux](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/SCC_Install_Engine_Console_zLinux.html#ID186) |  |
| 3 | If you are installing IBM Control Center for a high availability environment, install your first event processor.  To install your next event processor, your first event processor must be configured and started.  **Important:** If you enable JMS when you configure your event processors, then ensure that all event processors are JMS-enabled and have the same JMS configuration parameters. | * [Installing IBM Control Center in a high availability environment](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/scc_install_icc_high_availability.html#concept_ed2_qtc_bt) * [Installing and configuring IBM Control Center for high availability with the GUI installer](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/scc_install_configure_icc_HA_gui.html#task_ajv_5tc_bt) * [Installing and configuring IBM Control Center for high availability from the command line](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/scc_install_configure_icc_HA_command_line.html#task_kdq_c5c_bt) |  |
| 4 | Run the **configcc** utility to change the IBM Control Center settings if you are using a UNIX installation or a command line installation. |  |  |
| 5 | If you need a personal workspace, group workspace, or run reports, then you must install Cognos® Business Intelligence server on at least one event processor. Install Cognos Business Intelligence server on the event processor locations you chose. You do not have to install the Cognos Business Intelligence server with every event processor.  **Important:** If you install IBM Control Center with multiple EPs and do not install a Cognos Business Intelligence server on each EP, then you must ensure a successful Cognos Business Intelligence server connection on each EP. For more information, see [Ensuring a successful Cognos Business Intelligence server connection in a high availability environment](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/scc_ensure_cognos_server_connection_HA.html#task_ffl_kby_dv). | [Configuring Cognos Business Intelligence servers for high availability](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/scc_config_cognos_HA.html#task_kzb_gch_rs) |  |
| 6 | If you plan to secure the connections between the IBM Control Center event processor and the databases, and between Cognos Business Intelligence server and the databases, then complete the necessary setup on the database server, IBM Control Center engine, and Cognos Business Intelligence server. | * [Creating a secure connection between the event processor and the databases](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.secure.doc/SCC_Create_Secure_Connection_Engine_DBs.html#SCC_Create_Secure_Connection_Engine_DBs) * [Configuring a secure connection to the non-z/OS DB2 database server](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.secure.doc/SCC_Configure_Secure_Connection_DB2_DB.html#SCC_Configure_Secure_Connection_DB2) * [Configuring a secure connection to the DB2 for z/OS database server](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.secure.doc/SCC_Configure_Secure_Connection_DB2_zOS_DB.html#task_e1y_d4q_ll) * [Configuring a secure connection to the Microsoft SQL Server 2008 database server](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.secure.doc/SCC_Configure_Secure_Connection_MSSQL_DB.html#SCC_Configure_Secure_Connection_MSSQL_DB) * [Configuring a secure connection to the Oracle database server](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.secure.doc/SCC_Configure_Secure_Connection_Oracle_DB.html#SCC_Configure_Secure_Connection_Oracle_DB) |  |
| 7 | If you plan to monitor FTP servers, install the FTP agents. Configure your FTP servers to send SNMP traps to the active event processor. If you plan to have a high availability environment, configure the Sterling Connect:Direct® File Agent to send traps to the controller event processor. | [Setting up IBM Control Center to monitor Sterling Connect:Direct File Agent](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.configure.doc/SCC_Set_Up_Monitor_CD_File_Agents.html#ID43) |  |
| 9 | **Note:** Skip this step if you are not using IBM Control Center to monitor IBM Sterling Connect:Enterprise® for z/OS® servers.  Configure IBM Sterling Connect:Enterprise for z/OS servers to communicate with IBM Control Center, and send traps that contain event data to the event processors that are installed. All traps must be sent to the same port. If you plan to have a high availability environment, configure IBM Sterling Connect:Enterprise for z/OS to send traps to all installed event processors. | [Configuring Sterling Connect:Enterprise for z/OS](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/SCC_Configure_CE_zOS.html#ID1277) |  |
| 10 | **Note:** Skip this step if you are not using IBM Control Center to monitor IBM Global High Availability Mailbox servers.  Configure Global Mailbox servers to communicate with IBM Control Center. | [Configuring IBM Global High Availability Mailbox to publish events to IBM Control Center](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.configure.doc/scc_config_unsecure_conn_event_processing.html#task_ysx_l4y_ns) |  |
| 11 | Install the IBM Control Center console. | [Setting up a console](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/SCC_Set_Up_Console.html#ID1188) |  |
| 12 | If the console needs to access the IBM Control Center event processor with a secure connection, configure a secure connection between the IBM Control Center event processor and the consoles. | [Configuring the console for a secure connection](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.secure.doc/SCC_Configure_Console_Secure_Connect.html#ID2101) |  |
| 13 | If you want to create a secure connection between the IBM Control Center event repository and dynamically discovered servers, update the configuration file of the event publisher SDK on the server side. | [Creating a secure connection between the event repository and dynamically discovered servers](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.secure.doc/scc_create_secure_unsecure_conn_event_processing.html#concept_xw3_fpy_ns) |  |
| 14 | Enable authentication to the event repository. Enabling this authentication means that servers in a high availability environment need to pass IBM Control Center authentications to send events to IBM Control Center. | [Enabling authentication for posting events to the IBM Control Center event repository](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.secure.doc/scc_enable_authen_ep_sdk.html#task_f4p_xdr_ns) |  |
| 15 | Start IBM Control Center. |  |  |

# Preparing to install IBM Control Center

Last Updated: 2021-03-05

You need to complete certain tasks before you install IBM® Control Center.

Before you can install IBM Control Center for either a high availability or non-high availability environment, you must complete certain tasks. Some of the tasks include completing database worksheets, creating your databases, and installing required operating system patches.

Creating and setting up databases

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The IBM® Control Center engine uses DB2®, Oracle, or Microsoft SQL Server production and staging databases to store statistics and other information collected from monitored servers. In addition, Cognos® Business Intelligence server uses a reports database to generate IBM Control Center reports.

IBM Control Center supports the following database server types:

* DB2 on Linux, UNIX, and Microsoft Windows
* DB2 on z/OS®
* Oracle on UNIX, and Microsoft Windows
* Microsoft SQL Server on Microsoft Windows servers

For more information on supported platforms, versions, and editions, see the [Detailed System Requirements](http://www.ibm.com/support/docview.wss?uid=swg27036103).

IBM Control Center uses the following databases:

* Production database - To store activities and configuration information for monitored servers.
* Staging database (optional) - To offload the data from the production database.

**CAUTION:**

**A database with partitioned IBM Control Center tables is the preferred database setup over a staging database for performance reasons. If you set up database partitioning, do not set up a staging database. However, if your database does not support partitioning, it is a best practice to use both production and staging databases.**

* Reports database - To generate IBM Control Center reports.

For optimal performance, use a different database configuration for IBM Cognos than the production and staging databases.

Keep the following general requirements in mind when choosing and creating IBM Control Center databases:

* You must use the same database server type for all IBM Control Center databases.
* The databases must be created on a database server that the IBM Control Center engine can communicate with.

Before you install IBM Control Center, complete the following high-level tasks to create and setup databases for use with IBM Control Center:

1. Review all topics related to database requirements and configuration and create databases/schemas for IBM Control Center with the required settings.

**Tip:** Use the production, staging, and reports database worksheets to record database information.

1. After you create the required databases, provide the database server details such as host, port, user ID, password, and database name during the IBM Control Center installation and configuration process. IBM Control Center creates the required tables, views, and indexes during the installation and configuration process.
2. Ensure IBM Control Center database users are given the required permissions to access the created databases.

**Important:** The database servers should be used by IBM Control Center only and should not be shared with other applications. It is also recommended that the production database and reporting database are separated.

# Creating Linux, UNIX, and Windows DB2 databases and database users

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To use DB2® databases on Linux, UNIX, and Windows with IBM® Control Center, you need to create the databases with required settings.

## **Before you begin**

Install the DB2 server and ensure that you have the authority to create the databases and database users.

## **About this task**

Complete the high-level tasks for creating DB2 databases on Linux, UNIX, and Windows for use with IBM Control Center.

## **Procedure**

1. Create the databases with the required settings.
2. Grant the user the required permissions to access the databases that are created.

## **What to do next**

During the IBM Control Center installation or later when the conficCC utility is run, configure IBM Control Center to use the DB2 databases.

* [**Required settings for DB2 databases on Linux, UNIX, and Windows operating systems**](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/SCC_DB2_Req_Settings.html)  
  When you are creating DB2 databases on Linux, UNIX, and Windows operating systems, use the required settings to ensure IBM Control Center can use the databases.
* [**Additional settings for configuration parameters on DB2 databases**](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/SCC_DB2_9x_Additional_Settings_Config.html)  
  For optimal performance, use these parameters and values for DB2 databases.
* [**Additional settings for DB2 database features**](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/SCC_DB2_Additional_Settings_97_Above.html)  
  Use these settings for DB2 databases.
* [**Using example scripts to create DB2 databases**](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/SCC_Create_DB2_DB_From_Scripts.html)  
  You can use scripts to create DB2 databases with required parameters on Linux, UNIX, and Windows operating systems.
* [**Configure IBM Control Center to use DB2 databases on Linux, UNIX, and Windows operating systems**](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/SCC_DB2_Config_SCC_DB2_LUW.html)  
  To configure IBM Control Center to use DB2 databases on Linux, UNIX, and Windows operating systems, you need to specify database connection details.

# Required settings for DB2 databases on Linux, UNIX, and Windows operating systems

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When you are creating DB2® databases on Linux, UNIX, and Windows operating systems, use the required settings to ensure IBM® Control Center can use the databases.

| **Required setting** | **Production DB** | **Reports DB** | **Staging DB** | **More information** |
| --- | --- | --- | --- | --- |
| Code set | UTF-8 | UTF-8 | UTF-8 | Set this setting during database creation. |
| Buffer Pools | One buffer pool with the page size of 32K  One buffer pool with the page size of 16K  One buffer pool with the page size of 8K  One buffer pool with the page size of 4K | One buffer pool with the page size of 32K  One buffer pool with the page size of 16K  One buffer pool with the page size of 8K  One buffer pool with the page size of 4K | One buffer pool with the page size of 32K  One buffer pool with the page size of 16K  One buffer pool with the page size of 8K  One buffer pool with the page size of 4K | A default buffer pool is created as part of the database creation. The page size of the buffer pool defaults to the page size specified during database creation. |
| Regular Table Spaces | One regular table space with the page size of 32K  One regular table space with the page size of 16K  One regular table space with the page size of 8K  One regular table space with the page size of 4K | One regular table space with the page size of 32K  One regular table space with the page size of 16K  One regular table space with the page size of 8K  One regular table space with the page size of 4K | One regular table space with the page size of 32K  One regular table space with the page size of 16K  One regular table space with the page size of 8K  One regular table space with the page size of 4K | One regular default table space is created as part of the database creation. The size of the table space defaults to the page size specified during database creation. |
| User Temporary Table Spaces |  | One user temporary table space with a page  size of 32K |  |  |
| System Temporary Table Spaces | One system temporary table space with a page  size of 32K | One system temporary table space with a page  size of 32K |  |  |
| Table Space permissions | The database user must have access permissions to the newly created table spaces | The database user must have access permissions to the newly created table spaces | The database user must have access permissions to the newly created table spaces |  |
| Database user permissions | CREATETAB, BINDADD, CONNECT, IMPLICIT\_SCHEMA | CREATETAB, BINDADD, CONNECT, IMPLICIT\_SCHEMA | CREATETAB, BINDADD, CONNECT, IMPLICIT\_SCHEMA | The database user ID that will be specified during IBM Control Center configuration must have these permissions for the database. |

# Additional settings for configuration parameters on DB2 databases

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For optimal performance, use these parameters and values for DB2® databases.

| **Parameter** | **Description** | **Value** |
| --- | --- | --- |
| SELF\_TUNING\_MEM | Enables the DB2 self-tuning memory manager (STMM) to automatically and dynamically set memory allocations to memory consumers such as buffer pools, lock lists, package cache, and sort heap. | ON |
| DATABASE\_MEMORY | Allows DB2 to adjust the amount of database memory depending on load, memory pressures, and other factors. | AUTOMATIC (Windows and AIX®)  COMPUTED (Linux, and Solaris) |
| LOCKLIST | Allows STMM to dynamically manage memory allocations. | AUTOMATIC |
| MAXLOCKS | Allows STMM to dynamically manage memory allocations. | AUTOMATIC  If AUTOMATIC is not supported: 100 |
| PCKCACHESZ | Allows STMM to dynamically manage memory allocations. | AUTOMATIC |
| SHEAPTHRES\_SHR | Allows STMM to dynamically manage memory allocations. | AUTOMATIC |
| SORTHEAP | Allows STMM to dynamically manage memory allocations. | AUTOMATIC |
| NUM\_IOCLEANERS |  | AUTOMATIC |
| NUM\_IOSERVERS |  | AUTOMATIC |
| DFT\_PREFETCH\_SZ |  | AUTOMATIC |
| MAXAPPLS |  | AUTOMATIC |
| APPLHEAPSZ |  | AUTOMATIC |
| APPL\_MEMORY |  | AUTOMATIC |
| APP\_CTL\_HEAP\_SZ |  | 512  **Attention:** APP\_CTL\_HEAP\_SZ is deprecated in DB2 V9.5. |
| DBHEAP | Amount that is required depends on the amount of memory available and the traffic volume. | AUTOMATIC  **Attention:** The default DBHEAP value is inadequate. |
| LOGFILSIZ | Refer to the topic [Log Configuration](http://www.ibm.com/support/knowledgecenter/SS3JSW_5.2.0/com.ibm.help.performance_mgmt.doc/SIPM_DB2_Log_Cfg.html). | 65536 if you are configuring 20 transaction logs of 256 MB (65536 4KB pages) |
| LOGPRIMARY | Number of primary transaction logs. Refer to the topic [Log Configuration](http://www.ibm.com/support/knowledgecenter/SS3JSW_5.2.0/com.ibm.help.performance_mgmt.doc/SIPM_DB2_Log_Cfg.html). | 40 or more |
| LOGSECOND | Number of secondary transaction logs. These logs are allocated by DB2 when it cannot reuse any of the primary logs due to active transactions. Refer to the topic [Log Configuration](http://www.ibm.com/support/knowledgecenter/SS3JSW_5.2.0/com.ibm.help.performance_mgmt.doc/SIPM_DB2_Log_Cfg.html). | 12 |
| NUM\_LOG\_SPAN | Refer to the topic [Log Configuration](http://www.ibm.com/support/knowledgecenter/SS3JSW_5.2.0/com.ibm.help.performance_mgmt.doc/SIPM_DB2_Log_Cfg.html). | LOGPRIMARY - Safety buffer |
| DFT\_DEGREE | Sets the default degree of parallelism for intrapartition parallelism. In general, online transactional applications such as Sterling B2B Integratortypically experience a high volume of short queries that do not benefit from parallel queries. | 1 – Disable intrapartition parallelism |
| DB2LOCK\_TO\_RB |  | STATEMENT |
| STMT\_CONC |  | OFF |
| DB2\_COMPATIBILITY\_VECTOR | Enables one or more DB2 compatibility features. | NULL |

Additional settings for DB2 database features

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Use these settings for DB2® databases.

| **Feature** | **Description** | **Value** |
| --- | --- | --- |
| Currently Committed Semantics | The DB2 database used the default Cursor Stability (CS) isolation level in all versions until DB2 9.7. If an application changed a row and another application tried to read that row before the first application committed the changes, the second application waited until the commit.  You can now set the currently committed semantics of the CS level, which informs DB2 that when the second application tries to read a locked row, it will get an image of what the row looked like before committing the change.  In the enhanced currently committed semantics, only committed data is returned, as it was in previous versions. However, now the read operation does not wait for the write operation to release the row locks. Instead, the read operation returns the data before the start of the write operation.  The currently committed semantics is turned on by default in the new DB2 9.7 database. The new database configuration parameter, **cur\_commit** is used to override this behavior. For more information, see the [Currently committed semantics improve concurrency](https://www.ibm.com/support/knowledgecenter/SSEPGG_9.8.0/com.ibm.db2.luw.admin.perf.doc/doc/c0053760.html) topic in the DB2 for Linux UNIX and Windows Knowledge Center.  Currently committed semantics requires more log space for write operations. In addition, extra space is required for logging the first update of a data row during a transaction, which can have an insignificant or measurable impact on the total log space used.  The currently committed semantics feature has the following limitations:   * The target table that is used for a data update or delete operation does not use currently committed semantics. * An uncommitted modification to a row forces the currently committed read operation to access appropriate log records and determine the currently committed version of the row. Although log records that are no longer present in the log buffer can be physically read, currently committed semantics does not support the retrieval of log files from the log archive. * The following scans do not use currently committed semantics:   + Catalog table scans   + Referential integrity constraint enforcement scans   + LONG VARCHAR or LONG VARGRAPHIC column reference scans   + Range-clustered table (RCT) scans   + Spatial or extended index scans |  |

# Using example scripts to create DB2 databases

Last Updated: 2021-03-05

You can use scripts to create DB2® databases with required parameters on Linux, UNIX, and Windows operating systems.

There are two scripts you can use to create DB2 databases with required parameters on Linux, UNIX, and Windows operating systems:

* Option 1 - Use this script if the database user creating the database and the database user that is going to be used in IBM® Control Center are the same
* Option 2 - Use this script if the database user creating the database and the database user that is going to be used in IBM Control Center are not the same

## **Creating databases with the option 1 script**

To create a database with the option 1 script, complete the following steps:

1. Copy the option 1 script commands to a file named create\_scc\_db\_sql.
2. Edit the create\_scc\_db.sql file to replace @DBNAME@ with your database name.
3. Run the create\_scc\_db.sql script from the bin folder in the DB2 install (or using any other option).

* On Windows, type the following:
* C:\db2\BIN\DB2CW.BAT (This sets up the DB2 command line environment.)

C:\db2\BIN> db2 -stvf create\_scc\_db.sql

* On Linux and UNIX, type the following:
* . $HOME/sqllib/db2profile (For bash or Korn shell,
* this sets up the DB2 command line environment.)
* cd $HOME/sqllib/bin

db2 -stvf create\_scc\_db.sql

For more information on setting up the Linux and UNIX environments, see the [DB2 Knowledge Center.](http://www.ibm.com/support/knowledgecenter/SSEPGG_9.7.0/com.ibm.db2.luw.apdv.gs.doc/doc/t0004644.html)

Repeat this procedure to create all the databases needed by IBM Control Center.

**CAUTION:**

**A database with partitioned IBM Control Center tables is the preferred database setup for performance reasons.**

## **Option 1 script example**

-- Script to create production, reporting and staging databases for

-- IBM Control Center.

-- The db user that creates the database automatically inherits the

-- database administration privilege.

-- Edit this script and replace @DBNAME@ with your database name.

--

CREATE DATABASE @DBNAME@

AUTOMATIC STORAGE YES

USING CODESET UTF-8 TERRITORY DEFAULT

COLLATE USING SYSTEM PAGESIZE 32768;

CONNECT TO @DBNAME@;

CREATE BUFFERPOOL @DBNAME@\_04KBP IMMEDIATE SIZE AUTOMATIC PAGESIZE 4K;

CREATE BUFFERPOOL @DBNAME@\_08KBP IMMEDIATE SIZE AUTOMATIC PAGESIZE 8K;

CREATE BUFFERPOOL @DBNAME@\_16KBP IMMEDIATE SIZE AUTOMATIC PAGESIZE 16K;

CONNECT RESET;

CONNECT TO @DBNAME@;

CREATE USER TEMPORARY TABLESPACE SCCUSERTMP PAGESIZE 32K BUFFERPOOL IBMDEFAULTBP;

CREATE REGULAR TABLESPACE TS\_REG04\_@DBNAME@ PAGESIZE 4K BUFFERPOOL @DBNAME@\_04KBP PREFETCHSIZE AUTOMATIC;

CREATE REGULAR TABLESPACE TS\_REG08\_@DBNAME@ PAGESIZE 8K BUFFERPOOL @DBNAME@\_08KBP PREFETCHSIZE AUTOMATIC;

CREATE REGULAR TABLESPACE TS\_REG16\_@DBNAME@ PAGESIZE 16K BUFFERPOOL @DBNAME@\_16KBP PREFETCHSIZE AUTOMATIC;

CONNECT RESET;

## **Creating databases with the option 2 script**

To create a database with the option 2 script, complete the following steps:

1. Copy the option 2 script commands to a file named create\_scc\_db\_sql.
2. Edit the create\_scc\_db.sql file to replace @DBNAME@ with your database name and replace @USERID@ with your database user ID.
3. Run the create\_scc\_db.sql script from the bin folder in the DB2 install (or using any other option).

* On Windows, type the following:
* C:\db2\BIN\DB2CW.BAT (This sets up the DB2 command line environment.)

C:\db2\BIN> db2 -stvf create\_scc\_db.sql

* On Linux and UNIX, type the following:
* . $HOME/sqllib/db2profile (For bash or Korn shell,
* this sets up the DB2 command line environment.)
* cd $HOME/sqllib/bin

db2 -stvf create\_scc\_db.sql

Repeat this procedure to create all the databases needed by IBM Control Center.

## **Option 2 script example**

-- Script to create production and reporting databases for

-- IBM Control Center.

-- The db user that creates the database automatically inherits the

-- database administration privilege.

-- Edit this script and replace @DBNAME@ with your database name.

-- Replace @DBUSERID@ with your DB user ID.

CREATE DATABASE @DBNAME@

AUTOMATIC STORAGE YES

USING CODESET UTF-8 TERRITORY DEFAULT

COLLATE USING SYSTEM PAGESIZE 32768;

CONNECT TO @DBNAME@;

CREATE BUFFERPOOL @DBNAME@\_04KBP IMMEDIATE SIZE AUTOMATIC PAGESIZE 4K;

CREATE BUFFERPOOL @DBNAME@\_08KBP IMMEDIATE SIZE AUTOMATIC PAGESIZE 8K;

CREATE BUFFERPOOL @DBNAME@\_16KBP IMMEDIATE SIZE AUTOMATIC PAGESIZE 16K;

CONNECT RESET;

CONNECT TO @DBNAME@;

CREATE USER TEMPORARY TABLESPACE SCCUSERTMP PAGESIZE 32K BUFFERPOOL IBMDEFAULTBP;

CREATE REGULAR TABLESPACE TS\_REG04\_@DBNAME@ PAGESIZE 4K BUFFERPOOL @DBNAME@\_04KBP PREFECTCHSIZE AUTOMATIC;

CREATE REGULAR TABLESPACE TS\_REG08\_@DBNAME@ PAGESIZE 8K BUFFERPOOL @DBNAME@\_08KBP PREFETCHSIZE AUTOMATIC;

CREATE REGULAR TABLESPACE TS\_REG16\_@DBNAME@ PAGESIZE 16K BUFFERPOOL @DBNAME@\_16KBP PREFETCHSIZE AUTOMATIC;

CONNECT RESET;

CONNECT TO @DBNAME@;

GRANT CREATETAB,BINDADD,CONNECT,IMPLICIT\_SCHEMA ON DATABASE TO USER @DBUSERID@;

GRANT USE OF TABLESPACE SCCUSERTMP TO USER @DBUSERID@;

GRANT USE OF TABLESPACE USERSPACE1 TO USER @DBUSERID@;

GRANT USE OF TABLESPACE TS\_REG04\_@DBNAME@ TO USER @DBUSERID@;

GRANT USE OF TABLESPACE TS\_REG08\_@DBNAME@ TO USER @DBUSERID@;

GRANT USE OF TABLESPACE TS\_REG16\_@DBNAME@ TO USER @DBUSERID@;

CONNECT RESET;

Configure IBM Control Center to use DB2 databases on Linux, UNIX, and Windows operating systems

Last Updated: 2021-03-05

To configure IBM® Control Center to use DB2® databases on Linux, UNIX, and Windows operating systems, you need to specify database connection details.

Specify database connection details for the two different IBM Control Center databases using one of the following methods:

* On Windows operating systems - Either as part of the installation or later when **configCC** is run, you can specify the database connection details for the two IBM Control Center databases.
* On Linux and UNIX operating systems - After you install IBM Control Center, when you run **configCC**, you can specify the database details for the two IBM Control Center databases.

**Important:** Ensure you have the correct database version and supported JDBC drive files. For more information, see [Detailed System Requirements](http://www-01.ibm.com/support/docview.wss?uid=swg27036103).

Provide the following database connection information when you are configuring IBM Control Center to use DB2 databases:

| **DB connection information** | **Description** | **More information** |
| --- | --- | --- |
| Database Host Name |  |  |
| Database port | The port number on which the database server listens | Ensure that the database server is listening on this database port.  From the server where you are installing IBM Control Center, try establishing a “telnet” connection to the database host and port using the following command:  telnet <<dbhost>> <<dbPort>> |
| Database User ID |  |  |
| Database password for the DB User |  |  |
| Database Name |  |  |
| JDBC Drivers | db2jcc.jar and db2jcc\_license\_cu.jar or db2jcc4.jar and db2jcc\_license\_cu.jar | Copy these drivers to the server where IBM Control Center will be installed.  These files are typically in<<*DB2 installation location*>>/java folder. |

# Determine HTTPS information for the engine and console connection

Last Updated: 2021-03-05

You need to determine HTTPS information for the engine and console connection before you install IBM® Control Center.

## **About this task**

If the IBM Control Center console will use the HTTPS protocol to communicate with the IBM Control Center engine, gather the following information before installation:

## **Procedure**

1. The host name of any computer where the IBM Control Center engine or console is to be installed. Obtain the host name by doing the following:
   1. Open a command line prompt at the computer.
   2. Type **hostname** from the command line. The system returns a text string. For example, **WIN2000**. This string is the host name.
2. Determine a password to access the keystore (the file that contains certificates which include the identity and private key for an entity) and a password to access the truststore file (the file that contains the entities to be trusted. Each entity includes an identity and its public key).
3. Determine the HTTPS port the IBM Control Center engine will use.
4. Use this information during IBM Control Center installation.

## **What to do next**

After you install IBM Control Center, create a connection between the IBM Control Center engine and an IBM Control Center console or a Sterling Connect:Direct® managed server.

# HTTPS worksheet

Last Updated: 2021-03-05

Enter your HTTPS requirements in the following worksheet and refer to it during IBM® Control Center installation. Complete a worksheet for every computer on which the engine or a console is to be installed. Make additional copies as needed.

| **Field** | **Description** | **Value** |
| --- | --- | --- |
| Host name | The computer where the IBM Control Center engine or console will be installed. |  |
| Keystore file | The default location is installation directory/conf/security/CCenter.keystore. |  |
| Keystore password | There is no default password. The password must be at least six characters. Spaces are not allowed. |  |
| Truststore file | The default location is installation directory/jre/lib/ security/cacerts. |  |
| Truststore password | The default password is **changeit**. If you use the default truststore file, you must use **changeit**as the password. |  |
| HTTPS port | The default port is 58081. |  |
| HTTPS web port | The default port is 58083. |  |

Production database worksheet

Last Updated: 2021-03-05

Use the following worksheet to record production database setup information. You will need this information during IBM® Control Center installation.

| **Parameter** | **Database Type** | **Value** |
| --- | --- | --- |
| Database type  **Attention:** Production and reports databases must be of the same type and version. | All |  |
| Database name | All |  |
| User name | All |  |
| Password | All |  |
| Database hostname  Can be an IP address or the server name. | All |  |
| Port number to access the database | All |  |
| Location of the sqljdbc4.jar file | Microsoft SQL Server (2012 and 2014) |  |
| Location of the db2jcc.jar file | DB2® (UNIX and Microsoft Windows) |  |
| Location name of the DB2 database | DB2 (z/OS® or OS/390®) |  |
| Location of the db2jcc.jar database driver | DB2 (z/OS or OS/390) |  |
| Location of the DB2 database license file | DB2 (z/OS or OS/390, Microsoft Windows, UNIX) |  |
| Location of the ojdbc7.jar Oracle file | Oracle |  |

Note these points concerning the DB2 JDBC driver file:

* The DB2 JDBC driver files can be found in DB2InstallLocation\IBM\SQLLIB\java.
* DB2 version 10.x, Type 4 driver. This driver comes with two files, dbjcc.jar and db2jcc\_license\_cu.jar (UNIX and Microsoft Windows) or db2jcc\_license\_cisuz.jar (z/OS or OS/390).
* When you use the JDBC driver to configure IBM Control Center with DB2 databases, the JDBC driver files must come from the DB2 database location where IBM Control Center connects.

Reports database worksheet

Last Updated: 2021-03-05

Use the following worksheet to record reports database setup information. You will need this information during IBM® Control Center installation.

| **Parameter** | **Database Type** | **Value** |
| --- | --- | --- |
| Database type  **Attention:** Production and reports databases must be of the same type and version. | All |  |
| Database name | All |  |
| User name | All |  |
| Password | All |  |
| Database hostname  Can be an IP address or the server name. | All |  |
| Port number to access the database. | All |  |
| Location of the sqljdbc4.jar file | Microsoft SQL Server (2012 and 2014) |  |
| Location of the db2jcc.jar file | DB2® (UNIX and Microsoft Windows) |  |
| Location name of the DB2 database | DB2 (z/OS® or OS/390®) |  |
| Location of the db2jcc.jar database driver | DB2 (z/OS or OS/390) |  |
| Location of the DB2 database license file | DB2 (z/OS or OS/390, Microsoft Windows, UNIX) |  |
| Location of the ojdbc7.jar Oracle file | Oracle |  |

Note these points concerning the DB2 JDBC driver file:

* The DB2 JDBC driver files can be found in DB2InstallLocation\IBM\SQLLIB\java.
* DB2 version 10.x, Type 4 driver. This driver comes with two files, dbjcc.jar and db2jcc\_license\_cu.jar (UNIX and Microsoft Windows) or db2jcc\_license\_cisuz.jar (z/OS or OS/390).
* When you use the JDBC driver to configure IBM Control Center with DB2 databases, the JDBC driver files must come from the DB2 database location where IBM Control Center will connect.

Installing IBM Control Center

Last Updated: 2021-03-05

You can choose to install and configure IBM® Control Center for either a non-high availability or high availability environment. Installation of IBM Control Center in each environment varies based on your operating system.

Before you install and configure IBM Control Center, you must complete the preinstallation checklist to help you prepare for the installation process.

For a high availability environment, you can install and configure multiple event processors to monitor events from monitored servers. If an event processor is down or fails in a high availability environment, another event processor can start monitoring servers from the failed event processor until it becomes available again. No events are lost when IBM Control Center is installed and configured for a high availability environment. In a high availability environment, you can select which event processor has the Cognos® Business Intelligence server installed. The Cognos Business Intelligence server provides the reporting features for IBM Control Center and can be made high available. The Cognos Business Intelligence server must be installed with at least one event processor in a highly available environment.

**Important:** If you do not enable the globalization parameter for the Microsoft SQL server during an IBM Control Center installation, then you cannot use multi-byte characters. When you use a multi-byte character without enabling this parameter, then IBM Control Center cannot run and you must manually remove the character from your database. If you choose to enable the globalization parameter later, you must reinstall IBM Control Center.

After you complete your preinstallation checklist and choose whether you need to implement a high availability environment, you can begin the process of installing and configuring IBM Control Center on a Microsoft Windows, AIX, Solaris, or UNIX operating system. You can complete the following types of installation based on your operating system:

* GUI installer - you can complete a GUI installation on Microsoft Windows. You can also complete the installation on a Linux or UNIX platform where a GUI environment is configured and available.
* Command line installer - you can complete a command line installation on Microsoft Windows, UNIX, or z/Linux.

**Important:** IBM Control Center only provides 64-bit environment installers. The console and web console can be launched from either a 32-bit or 64-bit environment.

After you complete your installation and configuration of IBM Control Center, you will verify the installation and begin your setup of IBM Control Center to monitor servers.

# Installing and configuring IBM Control Center from the command line on UNIX

Last Updated: 2021-03-05

You can install the IBM® Control Center engine and the console on a UNIX operating system from a command line.

## **Before you begin**

* InstallAnywhere requires temporary space for some of its operations during installation. If there is insufficient space in the system temp, it attempts to extract the installer into the user's home directory. Ensure that the system temp has sufficient space for the installation.

**Tip:** You can force InstallAnywhere to use a different location for temp space by specifying the IATEMPDIR variable as shown in the following example:

export IATEMPDIR=$HOME

* In some UNIX environments, the installer reports that there is not enough disk space to install IBM Control Center even if there is sufficient disk space. To bypass this situation:
  1. Type the following commands:

export IATEMPDIR=$HOME export CHECK\_DISK\_SPACE=OFF

* 1. Run the IBM Control Center installer.

## **About this task**

Use this procedure to install the IBM Control Center engine and the console on a UNIX operating system from either a console or a command line.

**Attention:** If you are upgrading from a prior version of IBM Control Center, see [Release Notes](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.overview.doc/scc_releasenotes.html#releasenotes).

## **Procedure**

1. Navigate to the UNIX directory where you extracted the files.
2. Copy the CCInstall64.bin file to a directory on your computer.
3. Change to the directory where you copied CCInstall64.bin.
4. Type sh CCInstall64.bin -i console in the command line.
5. Run the **configCC.sh** command from the installation directory/bin directory to configure IBM Control Center.
6. Follow the installation prompts.

**Attention:** During the Event Processor Name installation step, you can use only alphanumeric characters to name the event processor. The event processor name must be unique in the database.

If the installation fails, determine the cause by reviewing the installation log, which is in installation directory/IBM\_Control\_Center\_v6.1.\_Install.log. If the configuration settings cause the installation to fail, you can run **configCC.sh** to reconfigure the settings.

The installation program installs the Java™ Runtime Environment (JRE) that is required to run IBM Control Center.

* [**Removing temporary files**](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.install.doc/SCC_Remove_Temp_Files.html)

# Removing temporary files

Last Updated: 2021-03-05

You need to remove the temporary files that are left by the installation program on some UNIX platforms.

Remove these files by typing the following commands at a command prompt:

rm /tmp/ia\_remove.\*

rm /tmp/persistent\_state

rm -R /tmp/install.dir.\* command

# Installing and configuring IBM Control Center by using the GUI installer on Microsoft Windows

Last Updated: 2021-03-05

You can install and configure the IBM® Control Center engine and console on Microsoft Windows with the GUI installer.

## **Before you begin**

Complete the preinstallation and installation checklists.

## **About this task**

To install and configure the IBM Control Center engine and console on Microsoft Windows with the GUI installer:

**Attention:** If you are upgrading from a prior version of IBM Control Center, see [Release Notes](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.overview.doc/scc_releasenotes.html#releasenotes).

## **Procedure**

1. Close all open applications.
2. Navigate to the Microsoft Windows directory where you extracted the files.
3. Double-click the **CCInstall64.exe** file.
4. Follow the installation prompts by using the information from the Production database worksheet, Reports worksheet, and the HTTPS worksheet. The installation program installs the JRE.

**Attention:** During the Event Processor Name installation step, you can use only alphanumeric characters to name the event processor. The event processor name must be unique in the database.

If the installation fails, determine the cause by reviewing the installation log, which is in installation directory/IBM\_Control\_Center\_v6.1\_Install.log. If the installation settings cause the installation to fail, you can run **configCC.bat** to reconfigure the settings.

# Installing and configuring IBM Control Center from the command line for Microsoft Windows

Last Updated: 2021-03-05

You can install the IBM® Control Center engine and the console on a Microsoft Windows operating system from a command line.

## **Before you begin**

* InstallAnywhere requires temporary space for some of its operations during installation. If there is insufficient space in the system temp, it attempts to extract the installer into the user's home directory. Ensure that the system temp has sufficient space for the installation.

**Tip:** You can force InstallAnywhere to use a different location for temp space by specifying the IATEMPDIR variable as shown in the following example:

set IATEMPDIR=<new\_temp\_dir>

## **About this task**

**Attention:** If you are upgrading from a prior version of IBM Control Center, see [Release Notes](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.overview.doc/scc_releasenotes.html#releasenotes).

To install the IBM Control Center engine and the console on a Microsoft Windows operating system from a command line:

## **Procedure**

1. Navigate to the Microsoft Windows directory where you extracted the files.
2. Copy the CCInstall64.exe file to a directory on your computer.
3. Change to the directory where you copied CCInstall64.exe.
4. Type sh CCInstall64.exe -i console in the command line.
5. Run the **configCC.bat** command from the install directory/bin directory to configure IBM Control Center.
6. Follow the installation prompts.

**Attention:** During the Event Processor Name installation step, you can use only alphanumeric characters to name the event processor. The event processor name must be unique in the database.

If the installation fails, determine the cause by reviewing the installation log, which is in installation directory/IBM\_Control\_Center\_v6.1\_InstallLog.log.

**Tip:** If the configuration settings cause the installation to fail, you can run **configCC.bat** to reconfigure the settings.

The installation program installs the Java™ Runtime Environment (JRE) that is required to run IBM Control Center.

# Installing and configuring IBM Control Center using the GUI installer for Linux and UNIX

Last Updated: 2021-03-05

You can install and configure the IBM® Control Center engine and console on Linux and UNIX with the GUI installer.

## **Before you begin**

Complete the preinstallation and installation checklists.

## **About this task**

To install and configure the IBM Control Center engine and console on Linux and UNIX with the GUI installer:

**Attention:** If you are upgrading from a prior version of IBM Control Center, see [Release Notes](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.overview.doc/scc_releasenotes.html#releasenotes).

## **Procedure**

1. Close all open applications.
2. Navigate to the Linux or UNIX directory where you extracted the files.
3. In the window, type **sh CCInstall64.bin -i gui**.
4. Follow the installation prompts by using the information from the Production database worksheet, Reports worksheet, and the HTTPS worksheet. The installation program installs the JRE.

**Attention:** During the Event Processor Name installation step, you can use only alphanumeric characters to name the event processor. The event processor name must be unique in the database.

If the installation fails, determine the cause by reviewing the installation log, which is in installation directory/IBM\_Control\_Center\_v6.1\_Install.log.

If the installation settings cause the installation to fail, you can run **configCC.sh** to reconfigure the settings.

# Taking the first steps after installation

Last Updated: 2021-03-05

There are tasks you need to complete after you installed IBM® Control Center for a high availability or non-high availability environment.

After you planned, downloaded, installed, and verified the installed of IBM Control Center, you can take next steps to set up your IBM Control Center environment. Tasks you can complete after the installation of IBM Control Center include setting up the IBM Control Center console, configuring IBM Control Center to databases, and changing event processor settings.

# Setting up a console

Last Updated: 2021-03-05

For computers other than the one IBM® Control Center was installed on, you install the console by using a browser such as Microsoft Internet Explorer or Firefox.

## **Before you begin**

Ensure that the correct level of JRE is installed. See [Detailed System Requirements.](http://www.ibm.com/support/docview.wss?uid=swg27036103)

## **About this task**

**Important:** To access many IBM Control Center user features without installing files locally on your computer, you can use the IBM Control Center web console. When you launch the IBM Control Center console from the launch page, you might receive security warnings if Java 1.7 Update 51 or later is installed on your computer.

## **Procedure**

1. Check with the administrator to ensure that the IBM Control Center engine is running.
2. Open the URL associated with the IBM Control Center engine. The URL format is https://hostname:port for a secure connection or http://hostname:port for a non-secure connection. The hostname is the DNS name or IP address where the engine is running and the port is the port number for the WebSphere® Application Server. (The default secure web port is 58083. The default non-secure web port is 58082.)
3. Click the IBM Control Center Console link you want to use.

The IBM Control Center components are downloaded to your local computer. When all components are downloaded, a security warning informs you that IBM Control Center is requesting unrestricted access to your computer.

1. Click **Start** to continue to the IBM Control Center console installation. A security warning informs you that Java Webstart is requesting unrestricted access to your computer. This access is necessary to install IBM Control Center.
2. Click **Install**.

When the IBM Control Center console installation is complete, create a shortcut for running the console from your desktop.

1. Do one of the following steps:
   * To create a shortcut on your desktop, click **Yes**.
   * To finish the installation without creating a shortcut, click **No**.
   * To defer creation of a shortcut, click **Ask Later**.

# Changing event processor settings after installation

Last Updated: 2021-03-05

You can change IBM® Control Center event processor settings after you install an event processor.

## **About this task**

To change IBM Control Center event processor settings (such as database connection details, the HTTP connector port, or HTTPS settings) you can run a configuration program to reconfigure the IBM Control Center setup.

## **Procedure**

1. From a command line, run **configCC.bat** (Microsoft Windows) or **configCC.sh** (UNIX) in the installation directory/bin subdirectory.

You are prompted for each step of configuration.

**Attention:** During the Event Processor Name configuration step, you can only use alphanumeric characters to name the event processor. The event processor name must be unique in the database.

1. To skip any step in which no change is required, type **n** and press **Enter**, then **y** and press **Enter**.

# Configuring Sterling B2B Integrator

Last Updated: 2021-03-05

To use IBM® Control Center with Sterling B2B Integrator servers, including IBM® Sterling File Gateway, set up an IBM Control Center service in Sterling B2B Integrator.

See the topic called Monitoring Sterling B2B Integrator with IBM Control Center in the Sterling B2B Integrator documentation for more information.

For IBM Control Center to monitor all the steps of Sterling B2B Integrator business processes, set the persistence level on Sterling B2B Integrator to PERSISTENCE\_FULL for the business processes.

IBM Control Center issues Ops commands to Sterling B2B Integrator to get adapter status. To avoid server down alerts, set the Ops command timeout on Sterling B2B Integrator to more than 2 minutes.

# Administering IBM Control Center

Last Updated: 2021-03-05

IBM® Control Center system administration tasks include starting and stopping the application, managing passwords and system settings, and managing servers.

# Starting and stopping IBM Control Center

Last Updated: 2021-03-05

Read these topics to understand tasks related to starting and stopping IBM® Control Center.

# Starting the IBM Control Center engine

Last Updated: 2021-03-05

The IBM® Control Center engine must be running for users and administrators to have access to the console and manage servers. On Microsoft Windows operating systems, the engine is set at installation to start automatically. This setting can be changed so the engine starts manually. The engine can also be set to start automatically on UNIX operating systems.

**Warning:** On the UNIX, Linux, or AIX® operating system, if you want to start IBM Control Center engine with a PuTTY session, do not enable X11 forwarding for the SSH connection. Otherwise, when the PuTTY session is closed, the engine port stops and disappears.

# Starting the engine manually on the UNIX operating system

Last Updated: 2021-03-05

You can start IBM® Control Center manually on the UNIX operating system by using **runEngine.sh**.

## **About this task**

**Warning:** On the UNIX, Linux, or AIX® operating system, if you want to start IBM Control Center engine with a PuTTY session, do not enable X11 forwarding for the SSH connection. Otherwise, when the PuTTY session is closed, the engine port stops and disappears.

Use the following procedure to start the engine automatically on UNIX.

## **Procedure**

1. Log in as root, or as the user who installed the engine.
2. Change the current working directory on the computer where the engine is installed to installation directory/bin.
3. Type sh runEngine.sh.

# Starting the engine automatically on the UNIX operating system

Last Updated: 2021-03-05

You can set the IBM® Control Center engine to start automatically whenever the engine's computer boots up, or to start manually.

## **About this task**

**Warning:** On the UNIX, Linux, or AIX® operating system, if you want to start IBM Control Center engine with a PuTTY session, do not enable X11 forwarding for the SSH connection. Otherwise, when the PuTTY session is closed, the engine port stops and disappears.

Use the following procedure to start the engine automatically on UNIX.

## **Procedure**

Insert a command line into a startup file.

**Note:** Because UNIX configurations vary, consult your UNIX administrator for the exact procedure and command syntax.

# Starting the engine manually in Microsoft Windows

Last Updated: 2021-03-05

You can start the IBM® Control Center engine manually in Microsoft Windows using startup settings.

## **About this task**

To start IBM Control Center, do one of the following:

## **Procedure**

* To start IBM Control Center as a Microsoft Windows service, click **Start Control Panel** > **Administrative Tools** > **Services** to display the **Services** window, then right-click **IBM Control CenterV6.0 Engine**, and click **Start**.
* From a command window (click **Start** > **All Programs** > **Accessories** > **Command Prompt**), change to the root directory, and type installation directory \IBM\ControlCenter\bin\ runEngine$.exe.
* In Microsoft Windows Explorer, double-click **runEngine$.exe** in the installation directory\IBM\ControlCenter\bin directory.
* In Microsoft Windows Explorer, double-click **runEngine.bat** in the installation directoryIBM\ControlCenter\bin directory.

# Manually starting the engine remotely in Microsoft Windows

Last Updated: 2021-03-05

You can start the IBM® Control Center engine service manually from a remote computer using the Microsoft Windows command line interface.

## **Procedure**

From a command line interface, type the following: sc “EngineHost start runEngine$” where EngineHost is the DNS name of the computer where the engine is running.

**Attention:** You must have administrative permissions for the IBM Control Center V6.0 engine service to perform this function.

# Changing the engine startup setting on Microsoft Windows

Last Updated: 2021-03-05

At installation, the engine is set to start automatically on Microsoft Windows. You can change the startup setting to start manually or automatically on Microsoft Windows whenever the engine's computer boots up.

## **Procedure**

1. Click **Start**> **Control Panel** > **Administrative Tools** > **Services**.

The **Services** window is displayed.

1. Right-click **IBM® Control Center V6.0 Engine** and select **Properties**.
2. Choose **Automatic** or **Manual** from the **Startup Type** list box.

# Cold starting IBM Control Center

Last Updated: 2021-03-05

It is possible to cold start your IBM® Control Center engine in order to avoid issues

## **About this task**

When the engine is restarted, it collects all statistical records from the monitored servers, including statistical records generated while IBM Control Center was inactive. If the engine was inactive for several hours, unnecessary statistics could fill up the IBM Control Center database and unimportant SLC events could be generated. Cold starting the IBM Control Center engine avoids this issue.

## **Procedure**

* On UNIX:
  1. Change the current working directory to the installation directory/bin directory.
  2. Type sh runEngineCold.sh.
* On Microsoft Windows:
  1. Open the IBM Control Center installation directory\bin folder.
  2. Double-click the file **runEngineCold.bat**.

# Stopping the IBM Control Center engine

Last Updated: 2021-03-05

When you are working from a Console or from a command line, you can stop the engine and disconnect all Consoles.

## **About this task**

IBM® Control Center checks to make sure that you have permission to issue a shutdown request before initiating shutdown. The following procedure gives instructions for stopping the engine and disconnecting Consoles:

## **Procedure**

* To stop the engine and disconnect all Consoles from the Console, click **IBM Control Center** > **Stop Sterling Control Center** and click **OK**.
* To stop only the Console, click **IBM Control Center**> **Exit Console**.
* To stop only the engine on a Microsoft Windows computer, click **Start**> **Control Panel**> **Administrative Tools** > **Services**, then right-click the **IBM Control Center V6.0 Engine** program, and click **Stop**.

**Attention:** You must manually stop WebSphere and Cognos processes. But before you stop the processes, read Cognos Business Intelligence server and WebSphere Application Server considerations in [Release Notes](http://www-01.ibm.com/support/docview.wss?uid=swg27048212) to understand all ramifications.

* To stop the engine and disconnect all Consoles from a command line:

**Important:** IBM Control Center checks to make sure that you have permission to issue a shutdown request before initiating shutdown.

* 1. Run either installation directory\bin\stopEngine.bat (Microsoft Windows) or installation directory/bin/stopEngine.sh (UNIX).
  2. Supply your IBM Control Center user ID and password when prompted.

# Stopping the engine without a user ID or password

Last Updated: 2021-03-05

A user who has permission to stop the IBM® Control Center engine can issue a command to stop the engine without providing a user ID and password. With this feature, you can script unattended engine stops and restarts to improve automation.

## **About this task**

To stop the engine from the command line without providing a user ID and password:

## **Procedure**

1. Switch to installation directory/bin.
2. Run one of the following commands:

|  |  |
| --- | --- |
| **Microsoft Windows** | **UNIX** |
| **stopEngine.bat -np** | **stopEngine.sh -np**. |

# Logging into IBM Control Center

Last Updated: 2021-03-05

You can log into IBM® Control Center from a console or a web console.

# Logging in from the computer where the engine is installed

Last Updated: 2021-03-05

You can start the full-functioned IBM Sterling Control Center Console and log in to IBM® Control Center from the computer where the IBM Control Center engine is installed.

## **Procedure**

1. Ensure that the IBM Control Center engine is running. Contact your system administrator if unsure.
2. Take one of the following actions:
   * Double-click the **Console-IBM Control Center V6.0** icon from the desktop.
   * In Microsoft Windows, click **Start** > **All Programs** > **IBM Control Center V6.0** > **Console - IBM Control Center V6.0**.
3. In the Login screen that displays, enter the following information:
   * Host name of the computer where the IBM Control Center engine is installed. This entry can be either a DNS host name or an IP address.
   * Port number that the IBM Control Center engine is configured to listen on. The default non-secure port is 58080.
   * Select **HTTPS** if you are signing onto the engine with a secure connection. If IBM Control Center was not configured for an HTTPS console-engine connection, this field cannot be selected. (The default port for the HTTPS connection is 58081.)
   * Your IBM Control Center user name and password. The password is case-sensitive. The default user ID and password are admin.

**Important:** After you log in using the default user ID and password, change the password.

1. The IBM Control Center Console is displayed. The next time you log in, you only need to enter your password. The rest of the information on the Login screen is populated from the information you previously entered.

* [**Setting console preferences**](https://www.ibm.com/docs/en/SS4Q96_6.1.0/com.ibm.help.scc.admin.doc/SCC_Set_Console_Prefs.html)  
  Console preferences determine how time is displayed and how often monitors are automatically refreshed. These settings are associated with your user ID and are employed whenever you log in to IBM Control Center. You can also enable screen readers for accessibility purposes.

# Setting console preferences

Last Updated: 2021-03-05

Console preferences determine how time is displayed and how often monitors are automatically refreshed. These settings are associated with your user ID and are employed whenever you log in to IBM® Control Center. You can also enable screen readers for accessibility purposes.

## **About this task**

The Time Preferences settings determine how time is displayed on the console. Time preferences are set for all IBM Control Center functions or information you select to view.

The Auto Refresh setting determines how often open monitors are automatically refreshed. (To access this setting, go to **IBM Control Center** > **System Settings**> **Console** > **Default Console Auto Refresh System Setting in seconds**.)

The Enable Compatibility with Screen Reader setting enables screen readers to more effectively read information that is displayed in console columns. When this feature is enabled, the horizontal scroll bar is enabled for all columns. In addition, the first four or five columns are not locked as in the standard grid display.

The Console Timeout settings determine the number of minutes of inactivity before users are logged out of their console session. When the inactivity timeout is set, you can set the point at which a warning message opens prior to the user session log out.

## **Procedure**

1. Click **IBM Control Center** > **Console Preferences**.
2. Click the **Time Preferences** tab and select a time display:

| **Setting** | **Description** |
| --- | --- |
| UTC | Displays the time in Coordinated Universal Time. (UTC is the accepted international acronym for Universal Time, Coordinated, which uses the same letters as the French acronym for Temps Universel Coordonné, TUC.)  **Important:** Since UTC never changes for daylight saving time (DST), do not use UTC for your rule or SLC schedules. Otherwise, you must manually adjust your schedules to compensate for DST. |
| Local Time | Displays the time from the computer where the IBM Control Center Console is installed. If you use local time display, verify that the Console is displaying the correct time zone. If the time zone is incorrect, you can take one of the following actions:   * + Manually select the correct time zone from the **Specific Time Zone** list box   + Adjust the time zone value of your system, as that is where the Console obtains this information |
| Engine Time | Displays the time on the computer where the IBM Control Center engine is installed. |
| Specific Time Zones | Displays the time that is selected from the list box of standard time zones. |

1. Click **Update**. The new time preferences take effect immediately. For the web console, the setting does not take effect, until the user associated with the change logs out of the full-functioned console.
2. Click **Auto Refresh Settings** and take one of the following actions:
   * To use the default system setting for all users, click **Use System Setting**. The current setting is displayed in seconds.
   * To set your auto refresh setting here (and override System Settings), select **Change Auto Refresh To** and enter a new auto refresh setting in seconds.
3. Click **Update**. The new auto refresh setting takes effect immediately. For the web console, the setting does not take effect until the user associated with the change logs out of the full-functioned console. Your web console session times out unless the **Auto Refresh** option is enabled.

**Note:** The auto refresh feature can be disabled for the web console for all users that belong to a particular role. To disable auto refresh:

* + Click **IBM Control Center** > **Roles**.
  + Double-click the role and select the **Permissions** tab.
  + Select the **None (Manual)** setting. If you select this setting, the web console sessions times out unless users click **Refresh**.

1. To enable a screen reader, click the **Web UI Accessibility Settings** tab and select **Enable Compatibility with Screen Reader**. The new screen reader setting does not take effect until the user associated with the change logs out of the full-functioned console.
2. Click the **Console Timeout** tab and take one of the following actions:
   * To use the default system setting, click **Use System Setting**.
   * To set your own console timeout (and override System Settings), click **Change Console Timeout to** and type a value for the following settings:
     + Time out after n minute(s) of inactivity
     + Display warning message n minute(s) before timing out.

**Attention:** The default setting in the IBM Control Center console is 0, and there is no session timeout. The default setting in the IBM Control Center web console will timeout in 30 minutes when the default value is set to 0.

1. Click **Update**.

# Logging in through Java Webstart

Last Updated: 2021-03-05

You can start the console and log in to IBM® Control Center from any computer by using the IBM Control Center Launch Page. Starting the Console through Java Web Start from the IBM Control Center Page gives you full Console functionality.

## **Procedure**

1. In the Web address field of your Web browser, enter the host and port number for the IBM Control Center Launch Page. Contact your system administrator for these values.
2. From the Launch Page, click IBM Control Center Console (Small, Medium, Large, or Very Large configuration).
3. In the Login screen that displays, enter the following information:
   * Host name of the computer where the IBM Control Center engine is installed. This entry can be either a DNS host name or an IP address.
   * Port number that the IBM Control Center engine is configured to listen on. The default non-secure port is 58080.
   * Select **HTTPS** if you are signing onto the engine with a secure connection. If IBM Control Center has not been configured for an HTTPS console-engine connection, this field cannot be selected. (The default port for the HTTPS connection is 58081.)
   * Your IBM Control Center user name and password. The password is case-sensitive. The default user ID and password are admin.

**Note:** After you log in using the default user ID and password, change the password.

1. **Note:** If you experience access-time problems by using Java WebStart in Microsoft Windows, perform the following steps:
   * Click **Start** > **Run**.
   * Type javaws -viewer in the **Open** field and click **OK**.
   * Select the **Direct Connection** option from the Java Control Panel Network Settings.

**Note:** Whenever you upgrade IBM Control Center or install a patch, it is recommended that you empty your Webstart and browser cache.

The IBM Control Center console is displayed. The next time you log in, you only have to enter your password. The rest of the information on the Login screen is populated from the information that you previously entered.

# Logging in through the web console

Last Updated: 2021-03-05

You can start the web console and log in to IBM® Control Center by using the IBM Control Center Launch Page.

## **About this task**

The IBM Control Center Web Console gives access to many but not all of the console features without installing console-related files on your computer.

## **Procedure**

1. In the web address field of your web browser, enter the host and port number for the IBM Control Center Launch Page. Contact your system administrator for these values. (The default secure port is 58083 while the default non-secure port is 58082.)
2. From the Launch Page, click IBM Control Center Web Console.
3. On the login page that displays, type your user ID and password and click **Log in**. The IBM Control Center web console is displayed.

**Tip:** If a user attempts to log in multiple times, at the end of the log in process, a warning message displays. The message identifies the user ID and number of other logins by that user.

# Setting the auto refresh interval for the IBM Control Center web console

Last Updated: 2021-03-05

You can set a regular refresh time interval for the web console.

## **About this task**

To perform this task, you need to have the Manage permission for System Settings and Console Auto Refresh. To set the refresh time interval for the IBM® Control Center web console:

## **Procedure**

1. In the IBM Control Center web console, go to your user ID, and then click **System configuration** > **Properties** > **engine.properties**.
2. Edit properties by adding the following parameter: <WEB\_CONSOLE\_REFRESH\_INTERVAL>Auto\_refresh\_intervals\_in\_seconds</WEB\_CONSOLE\_REFRESH\_INTERVAL>. For example, if you want the web console to refresh every 60 seconds, add <WEB\_CONSOLE\_REFRESH\_INTERVAL>60</WEB\_CONSOLE\_REFRESH\_INTERVAL>.

**Attention:** You can specify an integer that is no less than 15. If a value less than 15 is specified, the web console session is automatically refreshed every 15 seconds. If no value is specified, the session is refreshed every 30 seconds.

1. Click **Save**.

# Setting timeout value for the IBM Control Center web console

Last Updated: 2021-03-05

You can set the amount of time for an IBM Control Center web console session to be unused before the session is not valid.

## **About this task**

To complete this task, you need to have the Manage permission for System Settings and Console Timeout. To set the timeout value for the web console:

## **Procedure**

1. Locate the server.xml file in the Control\_Center\_intall\_directory/web/wlp/usr/servers/defaultServer/ directory.
2. Add invalidationTimeout="value\_in\_seconds" to the following field of the server.xml file : <httpSession cookieSecure="false" cookieHttpOnly="true"/>. For example, if you want the web console session to be timed out after 10 minutes, add invalidationTimeout="600" to the field: <httpSession cookieSecure="false" cookieHttpOnly="true" **invalidationTimeout="600"**/>.

**Attention:** If no value is specified, the user is logged off from the web console session in 30 minutes.

1. Restart the WebSphere® Application Server or the IBM® Control Center event processor.

# Reconnecting to the engine after a service interruption

Last Updated: 2021-03-05

If the IBM® Control Center console is disconnected from the IBM Control Center engine, the system automatically attempts to reconnect.

## **Procedure**

A Connection Lost message is displayed in the status bar and includes the time when the connection was lost. After the window opens, choose to exit the application. The console attempts to reconnect until either a connection is established or you click **Exit Console**. When the connection is reestablished, the console checks to make sure that your login credentials are still valid. If your login credentials are not valid, a second message window opens, which prompts you to log in again or exit the console.