ElectricFlow 5.2
User Guide

Electric Cloud, Inc.
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ElectricFlow Overview **6**
Terminology 6
Credentials and Impersonation in ElectricFlow 8
Email Notifications in ElectricFlow 9
Running Applications in ElectricFlow 9
Local ElectricFlow System 10
Logging in to ElectricFlow 11
ElectricFlow User Interfaces **13**
ElectricFlow Icons 13
Landing Page 20
Home Page 21
Main Menu 21
Administrative Settings Menu 22
Applications List 25
New Applications 26
Applications Designer 26
Application Tiers 28
Application Tier Details 29
Component Details 31
Configuring Components 34
Component Processes 37
Application Processes 43
Designing Process Steps 47
Component and Application Process Steps 51
Designing a New Process Step 51
Designing an Existing Process Step 52
Setting Parameters in the Process Step Dialog Boxes 52
Environments List 53
Environments Designer 55
Environment Tiers 56
Environment Tier Details 57
Resource Details 59
Adding Resources to Environment Tiers 61
Tier Maps 62
Application Notifications Wizard 63
Setting Notifications for the First Time 64
Enabling Notifications 65
Adding Notifications 67
Deleting Notifications 70
Disabling Notifications 70
Different Ways to Run Applications 73
Inventory Tracking 81
Tracking at the Component Process Level 81
Application Inventory Tracking 82
Environment Inventory Tracking 84

Viewing Job Details ... 87
Designing and Running Applications ... 91
Designing Applications ... 93
Adding an Application ... 94
Adding Components to the Application Tiers ... 97
Designing Component Processes ... 101
Designing Application Processes ... 107
Adding an Application ... 113
Adding Components to the Application Tiers ... 116
Designing Component Processes ... 119
Designing Application Processes ... 126
Using the Drag and Drop Method to Add Process Steps ... 134
Adding Credentials ... 138
Configuring Plugins ... 139
Component and Application Process Steps: ectool Example ... 140
Designing Environments ... 144
Adding an Environment ... 144
Assigning Resources to Environment Tiers ... 148
Adding an Environment ... 150
Assigning Resources to Environment Tiers ... 153
Making Tier Maps ... 155
Preparing to Run Applications ... 159
Setting Email Notifications ... 160
Selecting and Editing Email Messages ... 168
Running Applications ... 174
Running Applications with New Parameters ... 177
Running Applications with Parameters from Previous Runs ... 184
Running Applications with Schedules ... 190
Viewing Results and Troubleshooting ... 197
Viewing the Environment Inventory ... 198
Viewing the Application Inventory ... 199
Examples ... 200
Process Branching ... 204
About Process Branching ... 204
How to Use the Process Branching UI ... 204
UI Objects ... 205
Branching Conditions Menu ... 206
Analysis of a Process With Simple Branching ... 209
Process Branching States and Conditions ... 211
State of the Branching Condition Connectors in the UI ... 211
Examples of Branching Conditions ... 211
Custom Conditions in Process Branching ... 212
Configuration Guidelines for Process Branching ... 216
Simple Process Branching Example ... 216
Process Branching Example: Deleting Steps ... 223
ElectricFlow Tutorials ... 229

Running Applications with Deploy Options 229
Before You Begin 229
Tutorial 229

ElectricFlow Overview

ElectricFlow™ accelerates the continuous delivery of software. It provides domain-specific capabilities to orchestrate build, test, deploy, and release processes across many delivery pipelines. ElectricFlow includes ElectricCommander, a powerful platform that natively integrates these domain specific capabilities to provide Enterprise level continuous delivery. ElectricFlow makes software delivery processes repeatable, visible, scalable, and efficient.

ElectricCommander® is a powerful automation platform that provides distributed DevOps teams shared control and visibility into infrastructure, tool chains, and processes. ElectricCommander accelerates and automates the software delivery process, enabling agility, availability, predictability, and security across many build-test-deploy pipelines.

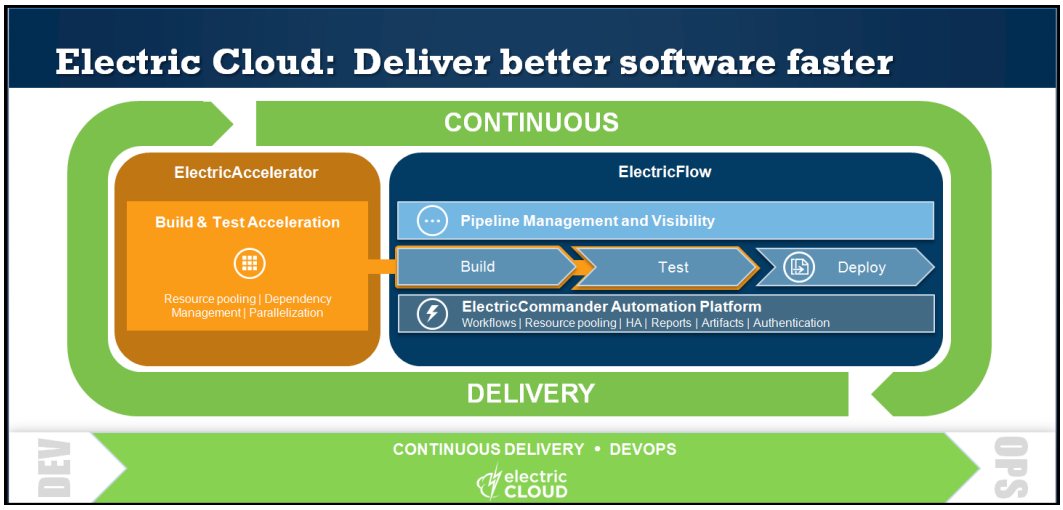
The following diagram shows how ElectricFlow provides continuous delivery.

- ElectricFlow provides management and visibility of the build, test, deploy, and release phases.

  It provides tracking and pipelines for continuous delivery using deployment application processes.

- ElectricFlow is built on the proven ElectricCommander platform, which automates the software build and release process using procedures.

- ElectricAccelerator performs the build and test phases of the continuous delivery process using procedures.



Terminology

You use ElectricFlow to orchestrate processes for continuous delivery of software.You design applications that automate tasks and orchestrate processes in the build, test, deploy, and release phases of your software life cycle.

In ElectricFlow, the terms *deploy* and *run* are synonymous. When you deploy an application in ElectricFlow, you are actually running the application. The result is software to make continuous delivery of your product possible.

The following objects and concepts apply to ElectricFlow:

- **Application**–A software program consisting of application and component processes that allow you to provide continuous delivery across different pipelines. To run the application, you must have application processes with components and component processes.
- **Application process**–Group of steps or actions in an application. You can re-use and rerun the process more than once.
- **Application tier**–Logical grouping of components in an application. A tier can have more than one component. The application must have at least one configured tier with one component.
- **Automation platform**–A software program that automatically runs tasks and procedures and manages the objects in them. ElectricFlow, a continuous delivery solution, is built on the ElectricCommander automation platform.
- **Component**–An object based on a specific version of an artifact. A component is the result of running an application in ElectricFlow and has details, properties, and access control settings. It can be used by other applications in ElectricFlow, or it can be the part of the continuous delivery solution. You add a component to an application tier.
- **Component process**–Group of steps or actions for a component. You can re-use and rerun these processes more than once.
- **Environment**–In the ElectricFlow system, location to which a resource is assigned and where the application runs.
- **Environment tier**–Logical grouping of resources in an environment. A tier can have more than one resource. The application must have at least one configured tier with one resource.
- **Inventory tracking**–How ElectricFlow tracks what is built, tested, deployed, and released in continuous delivery solutions.
    - The environment inventory represents the state of an environment at any point in time during the life cycle of your software product. It tracks the application processes that were run, the results of these processes, the version of the deployed software artifacts, the resources used in the processes, and errors.
    - The application inventory shows the status of an application when it is run. You can see when the application ran, what processes were successfully run or failed, and the errors.
- **Launch pad**–Starting point on the Home page that you select to design the application for continuous delivery.
- **Process branching**–A way to run job steps in an application or component process on a conditional basis.
- **Process type**–Select one of the following parameters to configure the inventory tracking on an application or component process:
    - **Deploy**–Select this to enable inventory tracking. The ElectricCommander server tracks artifacts deployed to environments. This is the default.
    - **Undeploy**–Select this to configure the ElectricCommander platform to remove the environment inventory record after the first job step in a component process runs successfully.
    - **Other**–Select this to disable inventory tracking.
- **Resource**–An agent machine configured to communicate with the ElectricCommander platform. The application runs on the resource.

- **Tier map**–Mapping of the application that you want to run to the environments to which resources are assigned. To run an application, you map one application tier to one or more environment tiers and must have at least tier map.

Credentials and Impersonation in ElectricFlow

ElectricFlow uses credentials and impersonation to control who can run applications and where the applications are run (environment). The user settings and credentials are defined and managed in the ElectricCommander platform.

You can attach one or more credentials to component or application process steps. However, you can attach only one impersonation credential to these objects:

- Component process
- Component process step
- Application process
- Application process step

You can design and run an application that applies credentials and impersonation depending on the ElectricFlow user permissions and that runs in one or more environments.

This example describes how you might attach impersonation credentials to an application in ElectricFlow. ElectricFlow applies credentials differently than the ElectricCommander platform.

An application has these credentials:

- Development (dev)
- Quality Engineering (qe)
- Production (prod)

Users have these privileges:

- User A is allowed to run the application to build a MyQSQL database in any environment and has admin privileges.
- User B is allowed to only run the application in the Dev and QE environments and is not trusted in the production environment.

You can use impersonation to give User A higher-order privileges than other users. For each environment, set a property using a reference such as `$[myEnvironment/dbConfigName]` and define a unique value, which can be passed as a credential to a process or process step.

- In the development (dev) environment, set `dbConfigName = dbUser_dev`.
- In the quality engineering (QE) environment, set `dbConfigName = dbUser_qe`.
- In the production (prod) environment, set `dbConfigName = dbUser_prod`.

User permissions determine what the user is allowed to do.

To use impersonation in the ElectricCommander platform, the credentials are more complicated. They would include three unique credentials for the environments and additional credentials for various user and environment combinations, such as User A and the development environment.

Related information:

- Adding Credentials
- Application Processes
- Component Processes

Email Notifications in ElectricFlow

ElectricFlow uses email notifications at the application, application process, and process step levels. The user settings are defined and managed in the ElectricCommander platform.

In ElectricFlow, email notifications work as follows:

- The notifications are triggered based on how the job finishes (the onCompletion event) and on the success or failure of the job.
- You set email notifications at the application, application process, and process step levels.
- You specify users, groups, or email addresses as recipients of the notifications.
- You can also target notifications at specific environments.
- You can enable or disable notifications at the application, application process, or process step level.

ElectricFlow provides two default templates for success and failure. You can also create new email templates to meet your needs. The templates have a name, subject, body, and type content that are stored as properties in ElectricFlow.

Related information:

- Application Notifications Wizard
- Setting Email Notifications
- Selecting and Editing Email Messages

Running Applications in ElectricFlow

Starting in ElectricFlow 5.2, you can run applications for full or partial deployments. You can also run applications based on schedules.

ElectricFlow supports these options:

- Full deploy–The system deploys all the objects (including application processes, components, and artifacts) in the application.
- Smart deploy–The system deploys only the artifacts that have not been deployed to a resource or specific versions of the artifacts that have not been deployed to new resources.
- Partial deploy–The system deploys only objects that you select.
- Partial deploy with specific artifact versions–The system deploys only the artifacts with selected versions.
- Schedule–You can create schedules to run applications on a one-time, daily, weekly, or monthly basis.

You can run applications by doing more than one deployment type, such as smart deploy and a partial deploy with specific artifact versions or only a smart deploy.

These scenarios describe how you might deploy your application.

When you create an application, you first run it in full-deploy mode. By default, Smart Deploy is disabled the first time that you run an application.

- If the application is not successfully run, you can rerun parts of it to troubleshoot the application or component processes that failed.

  You can do a partial deploy and rerun the application with only the objects that failed.

  You can also do a partial deploy only with specific versions of artifacts to determine if one or more specific versions of artifacts are causing problems.
- Later, after you successfully run the application, you can rerun parts of the application when new versions of artifacts or new resources are available.
- When a new version of an artifact is released, you can deploy only the artifact by selecting the new version and doing a partial deploy.
- When you add artifacts and resources to the application, you deploy the new artifacts to resources and specific versions of selected artifacts to the new resources, a combination of smart deploy and partial deploy with specific artifact versions.

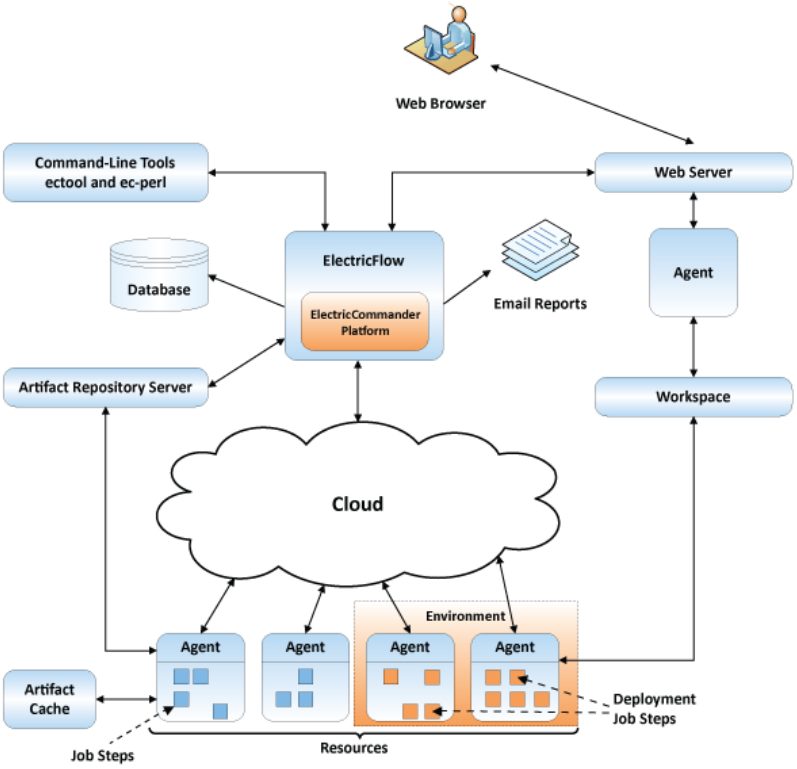
Related information:

- Different Ways to Run Applications
- Running Applications

Local ElectricFlow System

In this local configuration:

- The ElectricCommander server manages resources, issues commands, and generates reports.
- Applications, components, environments, and job steps are defined in ElectricFlow.
- Job steps are executed on resources in the defined environments.
- An underlying database stores commands, metadata, and log files.



If you are only evaluating ElectricFlow, the ElectricFlow software, the database, the ElectricCommander server, the web server, and the repository server can reside on the same machine.

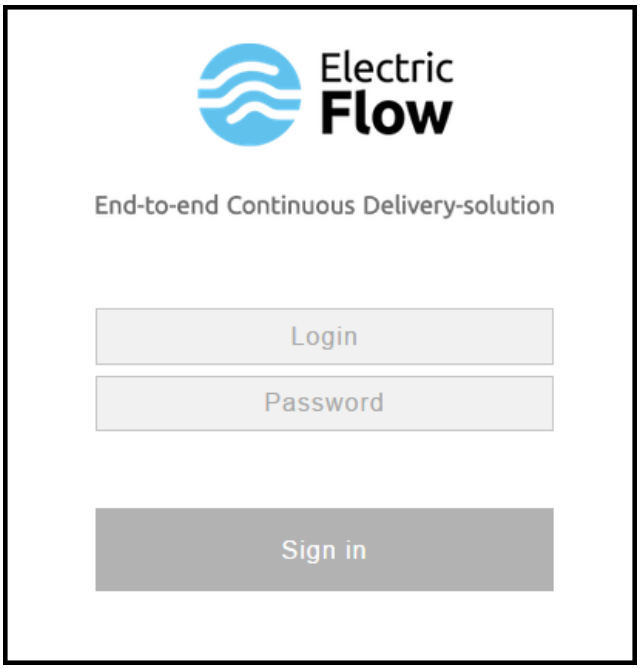
In a production environment, the database should reside on a separate machine from the ElectricCommander server to prevent performance issues. It is acceptable for the Commander server, web server, and repository server to reside on the same machine in a local configuration, but not required.

Logging in to ElectricFlow

1. Enter http://<commander-server>/flow in a browser window, where <commander-server> is the ElectricCommander server IP address or host name.

   For example, when you go to https://123.123.1.222/flow/, the landing page opens.

   Example:



IMPORTANT: For a new installation, the default admin account user name is *admin* and the password is *changeme*. You should change the default admin password as soon as possible.

2. Enter a user name and password.
3. Click **Login**.

   The ElectricFlow Home page opens.

Related information:

- Home Page

ElectricFlow User Interfaces

The following topics describe how to use the ElectricFlow user interfaces (UIs) that you use to design and run applications in ElectricFlow.

Related information:

- Designing and Running Applications

ElectricFlow Icons

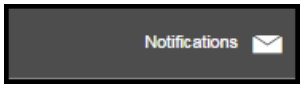
These icons appear in the ElectricFlow user interface (UI).

For more information about how they work in the UI, see the ElectricFlow UI topics.

Icon	Meaning	How to Use It
	Add application or Add environment	Click this to add an application or environment from the Applications List or the Environments List.
	Add application process	In the Applications Designer, click this to add an application process.
	Add component process	In a component, click this to add a component process.
	Add resource	Click this to add a resource to an environment tier.

Icon	Meaning	How to Use It
	Add step	Click this to add a step to an application or component process. When you click it, an undefined step appears. Drag and drop the step to where you want to add it in the process. For more information, see the "Using the Drag and Drop Method to Add Process Steps" section.
	Add tier	Click this to add a tier in the Applications Designer or the Environments Designer.
	Add tier component	This appears in lower right corner of an application tier. Click it to add a component to the application tier.
	Add tier map	This appears in the Applications Designer.
	Application	An application consists of one or more application processes, which consists of one or more components and component processes.
	Application or component process	This appears in the Application Process Designer or the Component Process Designer.

Icon	Meaning	How to Use It
	Automations	This appears on the landing page. Click this to go to the ElectricCommander platform.
	Breadcrumbs	This example shows a breadcrumb in the Environments Designer. Breadcrumbs also appear in application tiers and components and in environment tiers and resources and start with *object type/object name/....* In this context, a breadcrumb specifying a component process has this format: *Application/<application name>/<component name>*.
	Component	Add a component to an application tier in the Applications Designer.
	Component Processes	This appears in the lower right corner of a component in an application tier. Click the down arrow next to the number to see the existing component processes.
	Delete	This deletes the selected applications in the Applications List or environments in the Environments List when the **X** is red.

Icon	Meaning	How to Use It
	Edit	Edit the object in which this icon appears, such as a component, resource, or process step.
	Email notifications	Click this to configure email notifications for the selected application.
	Email notification, add	Click this to add an email notification to the selected application, application process, or process step in the "Application notification / edit" wizard.
	Email notification, delete	Click this to delete an email notification in the selected application, application process, or process step in the "Application notification / edit" wizard.
	Email message template	Click this to open the drop-down list of templates that you can use for an email notification setting.
	Environment status	When the status is *Enabled* and the green button appears, you can run the application when a tier map is configured.
	Environment	An environment consists of environment tiers to which resources are assigned.

Icon	Meaning	How to Use It
	Hide Hide running process	Click this to hide details of the application.
	Inventory	Click this to open the environment inventory.
	Menu	This is referred to as the main menu in the Home page, Applications List, and the Environments List. For more information, see the " Main Menu" topic. For more information, see Main Menu. This icon also appears in Applications Designer and the Environments Designer. In application tiers with components and environment tiers with resources, click it to show details about the object.
*	New component	Click the star or asterik to configure a new component. After you click the first component in a tier, this icon disappears.
	Number of tier maps for an application	In the Applications Designer, click the down arrow next to the number to see the list of existing tier maps. Click the "Add tier map" icon to add a tier map to the application.

Icon	Meaning	How to Use It
	Number of application processes in an application	In the Applications Designer, click the down arrow next to the number to see the list of existing application processes. Click the "Add process" icon to add an application process to the application.
	Number of steps in a component or application process	In the Component Process Designer or Applications Process Designer, click the "Add step" icon to add a step to the process.
	Number of tiers in an application or environment	In the Applications Designer or Environments Designer, click the down arrow next to the number to see the list of existing tier. Click the "Add tier" icon to add a tier in the Applications Designer or the Environments Designer.
	Run process	In the Applications List, click this icon to run the application when it is green.

Icon	Meaning	How to Use It
 	Select (toggles between All and **None**)	This appears in the Applications List or Environments List. To delete all of the objects in the list, click **All**. **All** changes to **None**, and all of the objects in the list are selected. Then click the red **X** next to **Delete** to delete all the objects.
	Settings	This is also referred to the *Administrative settings menu*. Click this icon to open a list of links to the administration area in the ElectricCommander platform. For more information, see the " Administrative Settings Menu" topic.
	Show component processes	In a component, click the down arrow to view the existing component processes.
	Tier map	This is a mapping of application tiers to environment tiers. You must map each application tier to an environment tier.
	View details	This appears in the Applications List or Environments List. Click this to go to the Applications Designer or the Environments Designer.

Icon	Meaning	How to Use It
	View View running process	This appears in several pages, dialog boxes, and wizards including the Applications List, the Applications Inventory, the Environment Inventory, and the Application notifications wizard. Click this to show the details of the application.

Landing Page

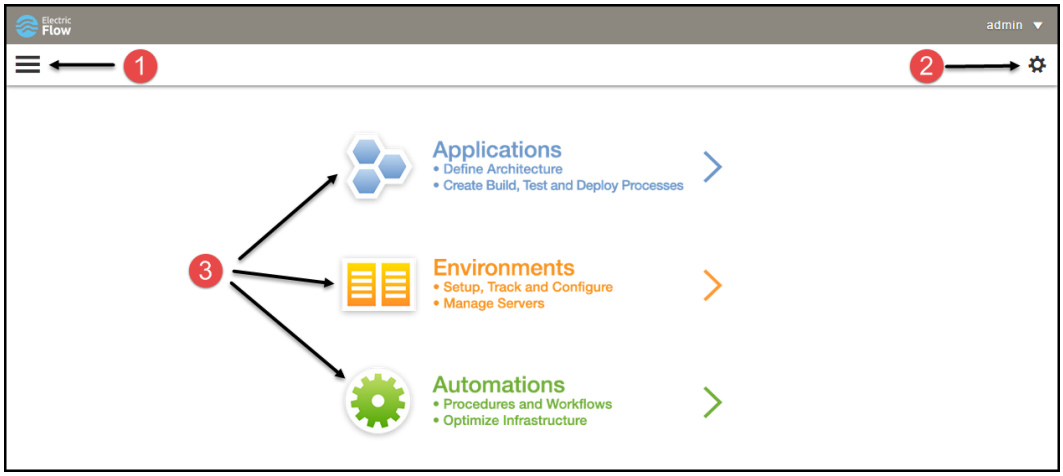
How to get to here: Enter **http://<commander-server>/flow** in a browser window, where <commander-server> is the ElectricCommander server IP address or host name.

To log in, go to the landing page:

Home Page

How to get to here: From the landing page, enter your user name and password and click **Login**.

From the Home page, you can design the application for your continuous delivery solution.



1	Main menu–When you click on this icon, a list of destinations appears, which matches the list of launch pads on the Home page.
2	Administrative settings for ElectricFlow–When you click on this icon, links to the administrative area in the ElectricCommander platform appear.
3	Launch pads–Click one to start designing your application.

To design your application, select these launch pads:

- **Applications**–Model applications by defining the application architecture and designing component and application processes.

  Click **Applications** to open the Applications List page.

- **Environments**–Model environments in which applications are run by assigning and managing resources.

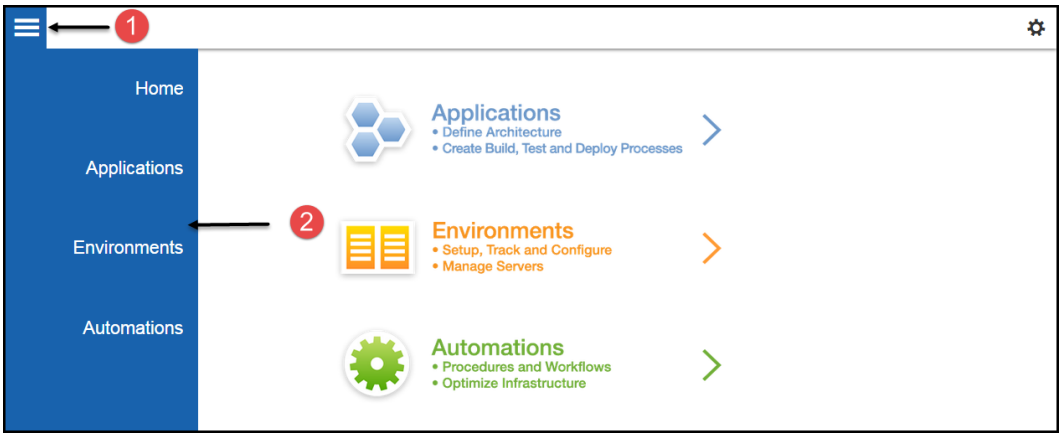
  Click **Environments** to open the Environments List page.

- **Automations**–Define procedures and workflows for your software development life cycle in the ElectricCommander platform.

  Click **Automations** to open the Home UI in the ElectricCommander platform.

Main Menu

How to get here: From the Home page, click on the main menu icon.



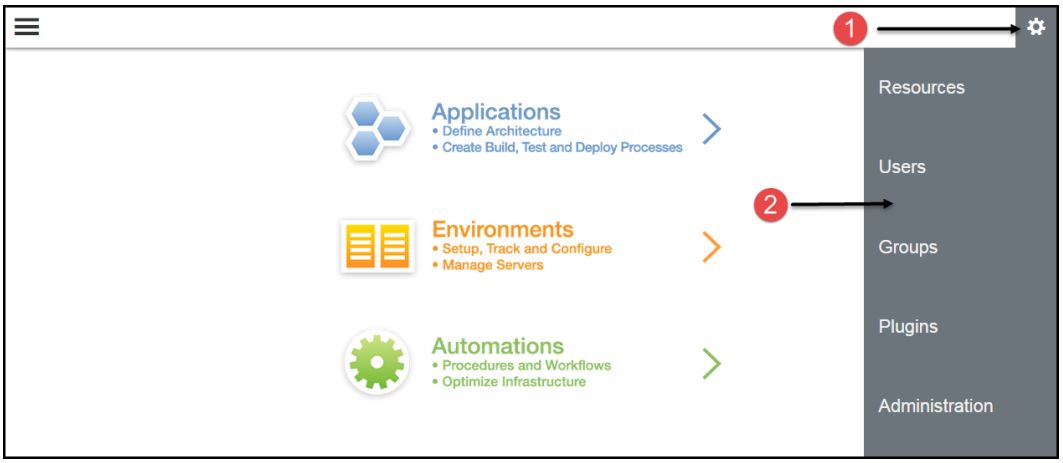
1	Main menu icon
2	Main menu

A list of destinations appears.

- **Home**–Click **Home** to close the main menu and return to the Home page.
- **Applications**–Click **Applications** to open the Applications List page.
- **Environments**–Click **Environments** to open the Environments List page.
- **Automations**–Click **Automations** to open the Home UI in the ElectricCommander platform.

Administrative Settings Menu

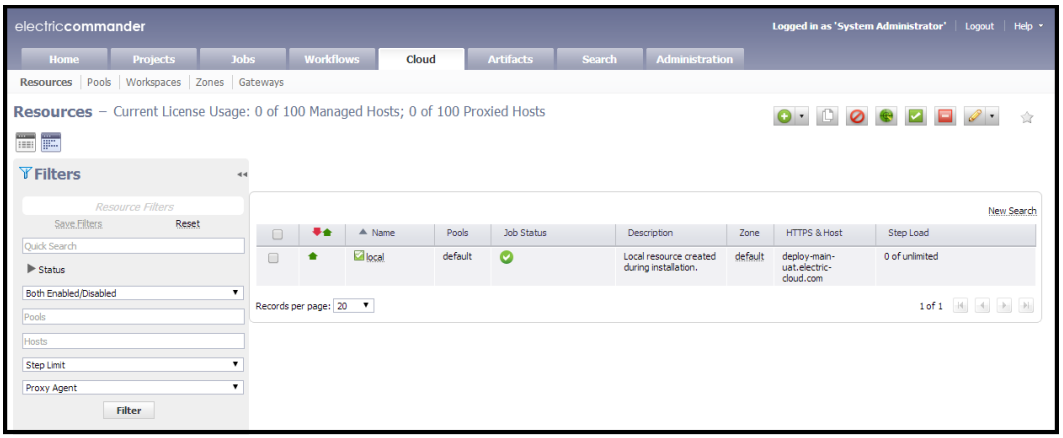
How to get here: From the Home page, click on the administrative settings menu icon. A list of links to the administration area in the ElectricCommander platform appears.



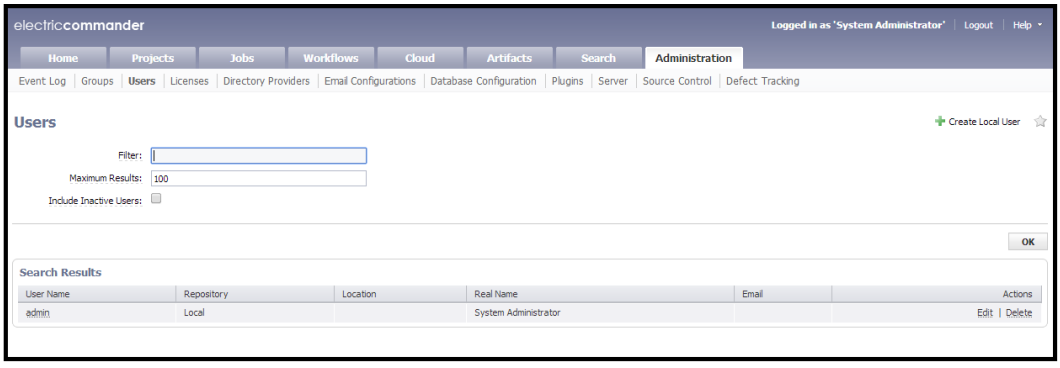
1	Administrative settings menu icon
2	Administrative settings menu with links to the ElectricCommander platform: • Resources • Users • Groups • Plugins • Administration

When you click a link, you go to one of the following places in the ElectricCommander platform:

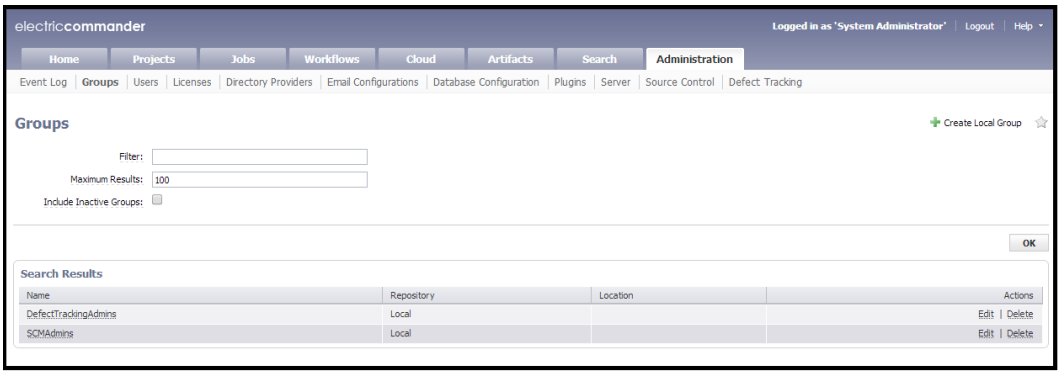
Resources–You can view and manage ElectricFlow resources on the Resources page in the ElectricCommander platform. For more information about the Resources page, go to the ElectricCommander Help > Web Interface Help > Resources.



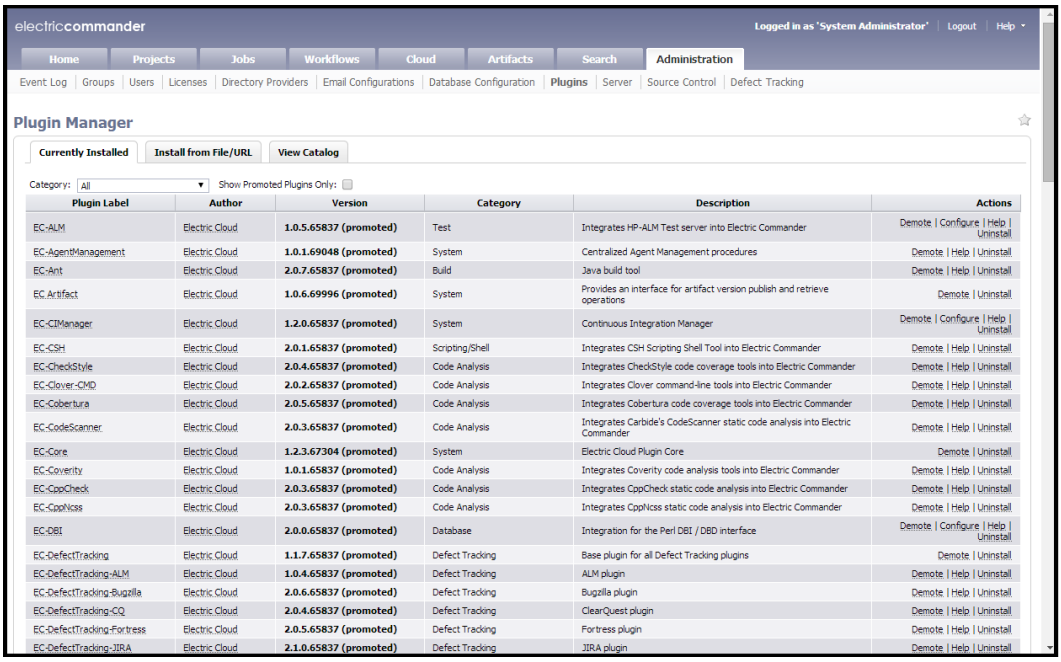
Users–You can view and manage ElectricFlow users on the Users page in the ElectricCommander platform. For more information about the Users page, go to the ElectricCommander Help > Web Interface Help > Users and Groups.



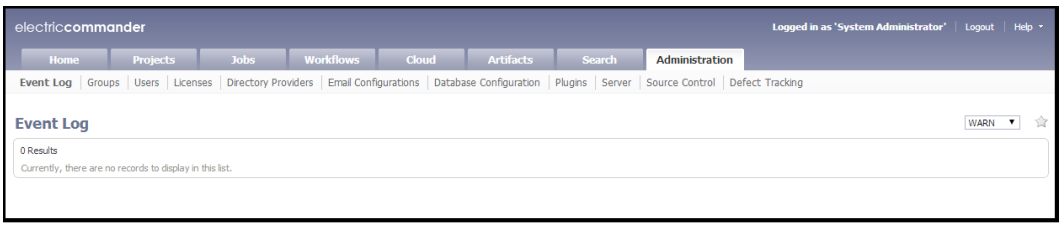
Groups–You can view and manage ElectricFlow groups on the Groups page in the ElectricCommander platform. For more information about the Groups page, go to the ElectricCommander Help > Web Interface Help > Users and Groups.



Plugins–You can view and manage ElectricFlow plugins in the ElectricCommander platform. For more information about the Plugin Manager, go to the ElectricCommander Help > Web Interface Help >Plugins Manager.



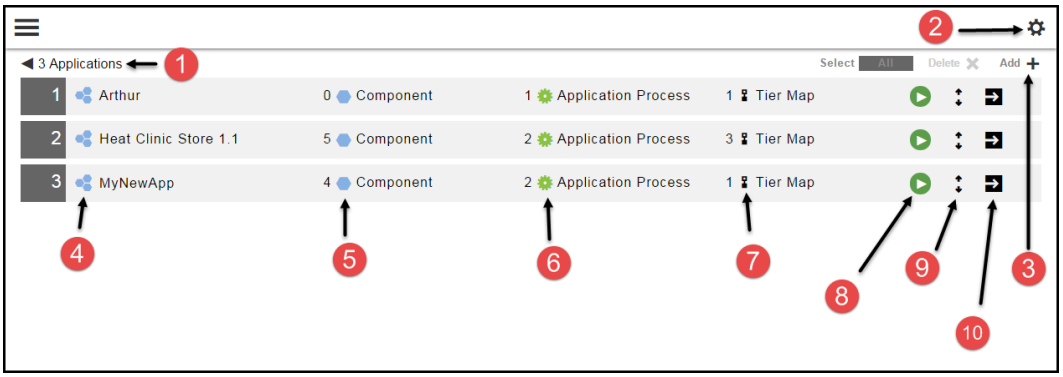
Administration–You can view and manage objects such as groups, users, licenses, and servers in the ElectricCommander platform. The following UI shows the Event Log in the ElectricCommander platform. For more information, go to the ElectricCommander Help > Web Interface Help.



Applications List

How to get here:

- From the Home page, click the **Applications** launch pad.
- From the main menu on the Home page, click the **Applications** destination.



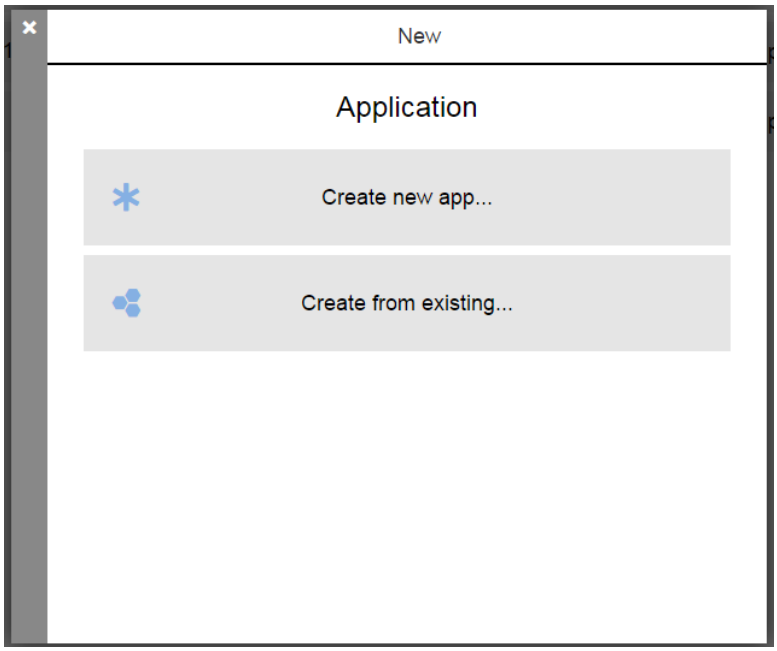
1	Breadcrumb, which shows the total number of applications in your ElectricFlow system.
2	Administrative settings menu Click this icon to open a list of links to the administration area in the ElectricCommander platform. These links are the same as the links in the administrative settings menu on the Home page.
3	Add new application Click this icon to design an application.
4	Application icon
5	Component icon
6	Process icon
7	Tier map icon
8	Run process Click this icon to run the process when the button is green. This is available only when an application process is defined.
9	View running process Click this icon to see more details of the running process.
10	View details Click this icon to go to the Applications Designer.

Related information:

- ElectricFlow Icons
- Home Page

New Applications

How to get here: In the Applications List, click the "Add new application" icon in the upper right corner. The New Application dialog box opens.



Related information:

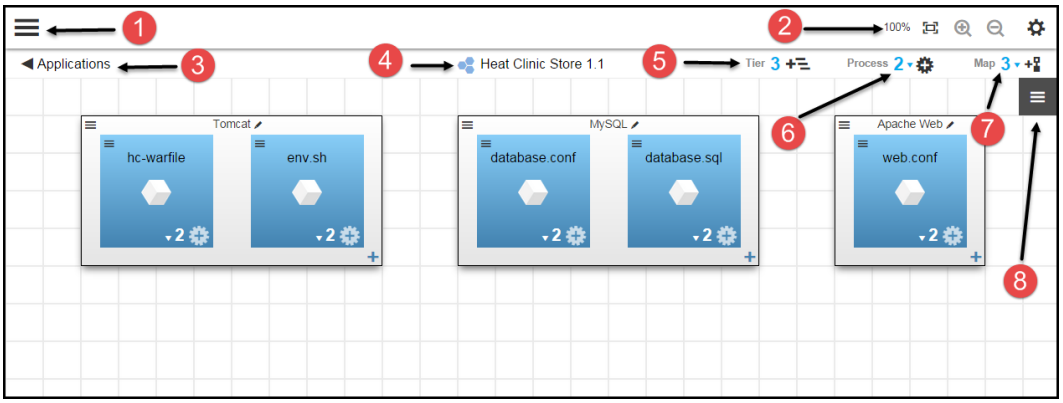
- ElectricFlow Icons
- Applications List

Applications Designer

How to get here: From the Applications List page, select an application.

Applications consist of application processes and components grouped into tiers.

To run applications, you must configure tier maps between application tiers and environment tiers.



The following information is on this page:

1	Main menu
2	This information is view only. ElectricFlow automatically adjusts the page settings to show all the tiers in the application. For example, if all the tiers do not fit on the page at 100% magnification, ElectricFlow reduces the magnification until all the tiers appear on the page.
3	Breadcrumbs
4	Application icon and application name
5	Number of tiers in the application and the tier icon Click the tier icon to add a tier to the application.
6	Number of application processes and the process icon Click the down arrow to select an existing application process. Click the process icon to add an application process to the application.
7	Number of tier maps and the tier map icon Click the tier-map icon to add an application tier-to-environment tier mapping for the application.
8	Applications menu icon Click this icon to view the application details.

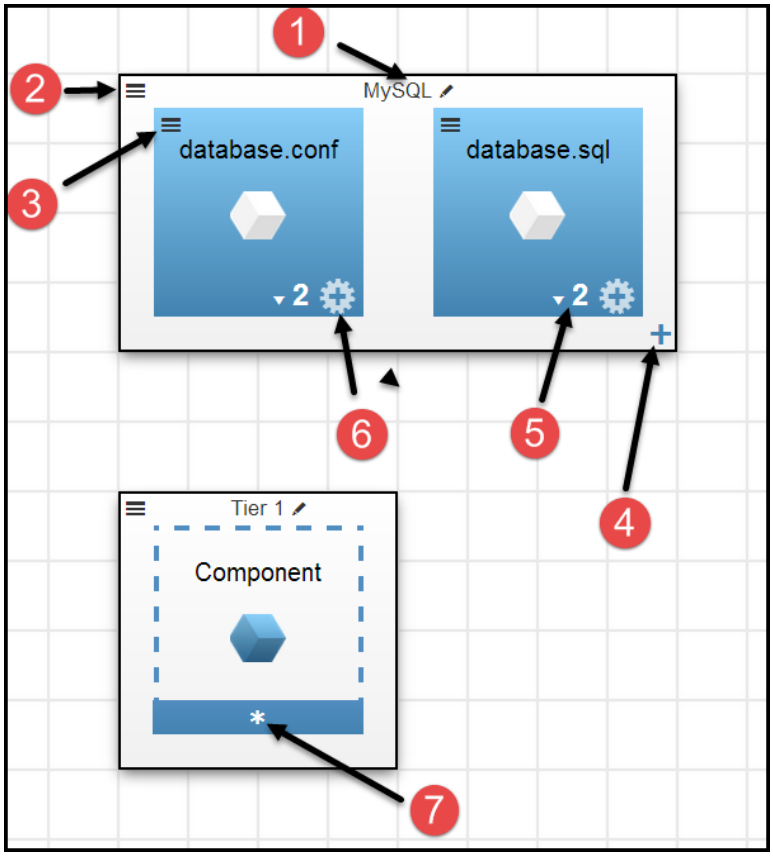
Related information:

- ElectricFlow Icons
- Application Tiers
- Tier Maps

Application Tiers

How to get here: From the Applications Designer, select an application tier.

Application tiers consist of components with component processes.



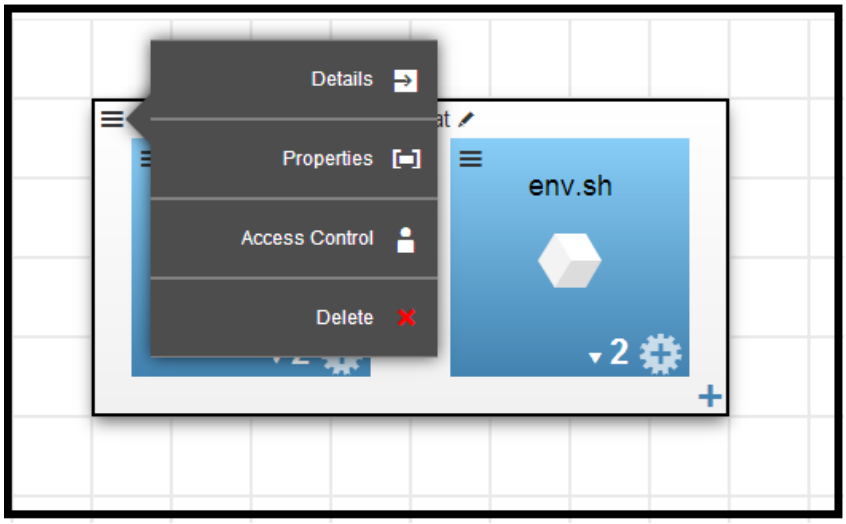
The following information is available in an application tier.

1	Tier name and edit icon Click the edit icon to edit the tier name and description.
2	Application tier menu icon Click this icon to view the application tier details.
3	Component menu icon Click this icon to view the component details.
4	"Add tier component" icon Click this icon to add a component to the tier.

5	"Component processes" icon that shows the number of existing component processes Click the down arrow to see a list of component processes.
6	"Add component process" icon Click this icon to add a component process.
7	New component icon (*), which disappears after the first component is configured. Click this icon to configure a new component.

Application Tier Details

In an application tier, when you click the application tier menu icon, the application tier details menu appears.



You can click on one of the following for more information about the application tier:

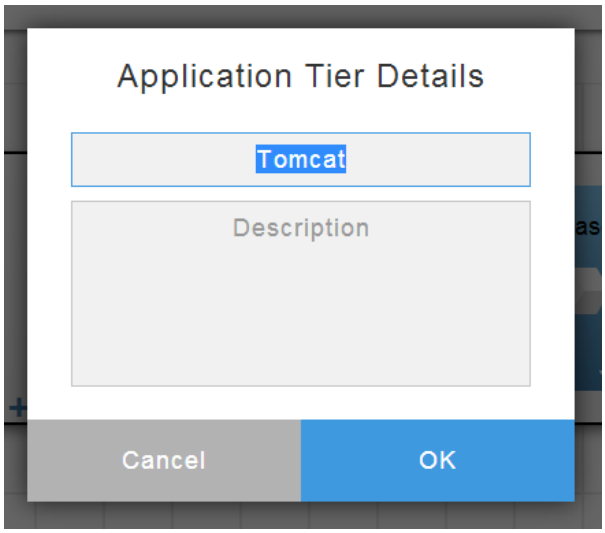
- **Details**
- **Properties**
- **Access Control**
- **Delete**

  When you click **Delete**, every object for the tier, including the tier and all the resources in it, is deleted.

Details

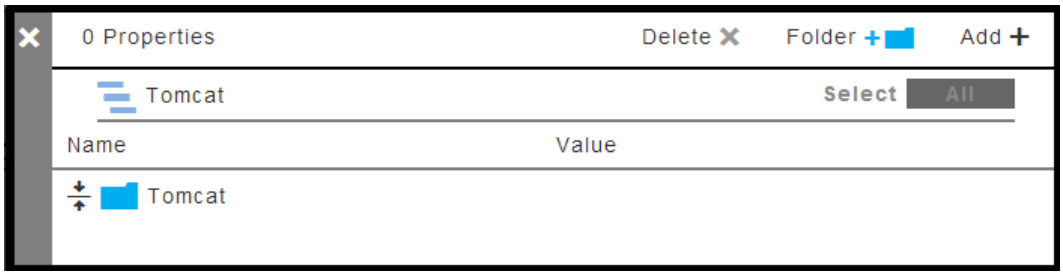
When you click **Details** in the tier details menu, the Application Tier Details dialog box appears. It also appears when you click the pencil icon.

In the Application Tier Details dialog box, you can change the name of the application tier and add a description about it.



Properties

When you click **Properties** in the application tier details menu, the application tier Properties dialog box appears. You can set the properties for the application tier.

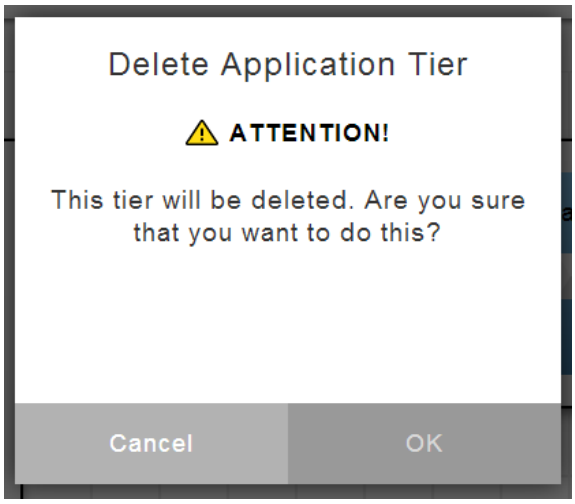


Access Control

When you click **Access Control** in the application tier details menu, you go to the Access Control page for the tier in the ElectricCommander platform. You can set privileges for the objects in your application.

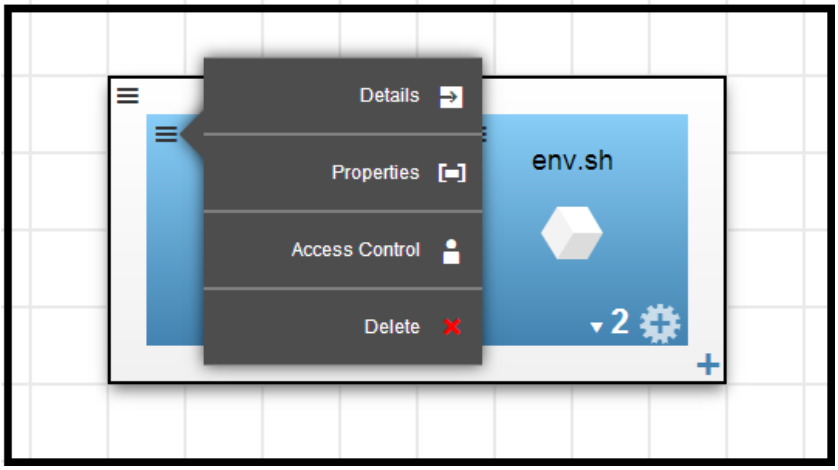
Delete

When you click **Delete** in the application tier details menu, the Delete Application Tier dialog box appears.



Component Details

In a component, when you click the component menu icon, the component details menu appears.



You can click on one of the following for more information about the component tier:

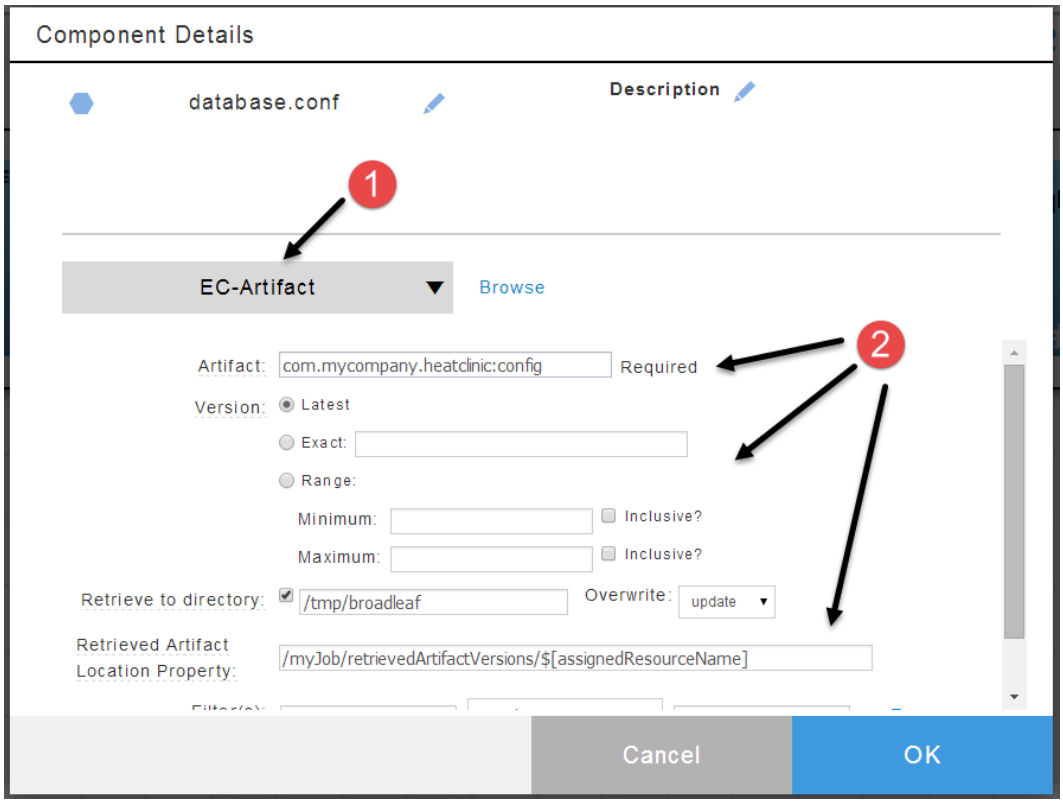
- **Details**
- **Properties**
- **Access Control**
- **Delete**

  When you click **Delete**, every object for the component is deleted.

Details

When you click **Details** in the component details menu, the Component Details dialog box appears. The information that appears depends on your system.

In this example, the Content Location is EC-Artifact, the default plugin. In the Artifact field, *com.mycompany.heatclinic:config* comes from the Artifact Repository in the ElectricCommander platform.

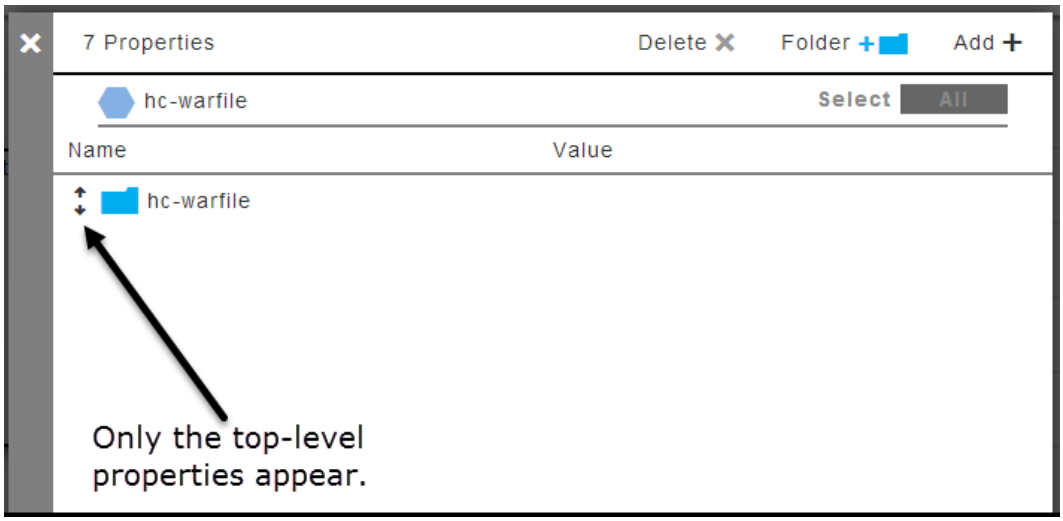


1	Content Location of the component
2	Component details that vary depending on the Content Location

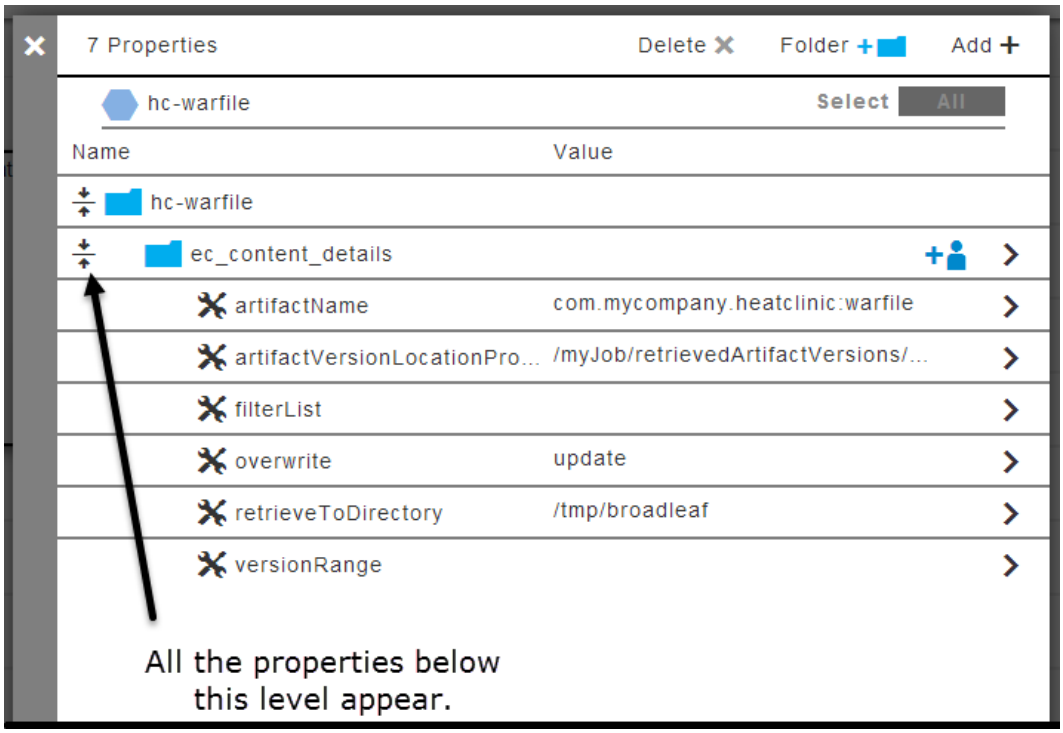
Properties

When you click **Properties** in the component details menu, the component Properties dialog box appears. You can set the properties for the component.

In this example, only the top-level component details appear.



When you click the expansion icon, all the properties below the current level appear.



Access Control

When you click **Access Control** in the component details menu, the Access Control page for the component in the ElectricCommander platform opens. You can set privileges for the objects in your application.

For more information, go to the ElectricCommander Help > Overview > Access Control.

Delete

When you click **Delete** in the component details menu, the Component Deletion dialog box appears.

Related information:

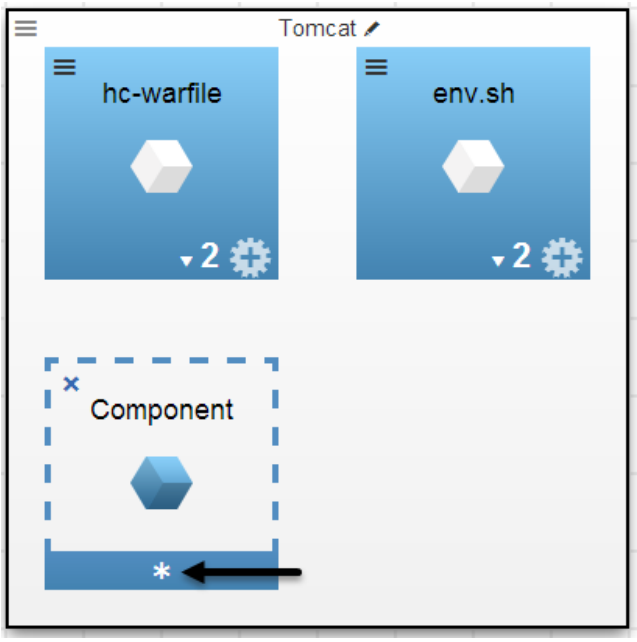
- ElectricFlow Icons
- Applications Designer

Configuring Components

How to get to here: From the Applications Designer, select an application tier.

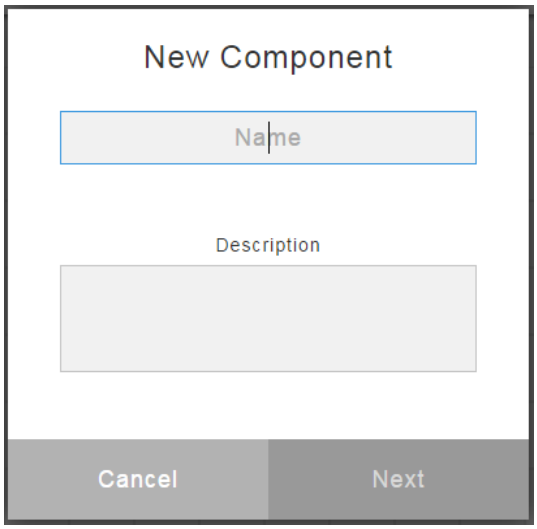
1. Click the "Add tier component" icon to add a component.

   A new component appears in the application tier.



2. Click the icon below the component (*) to configure it.

   The New Component dialog box appears.



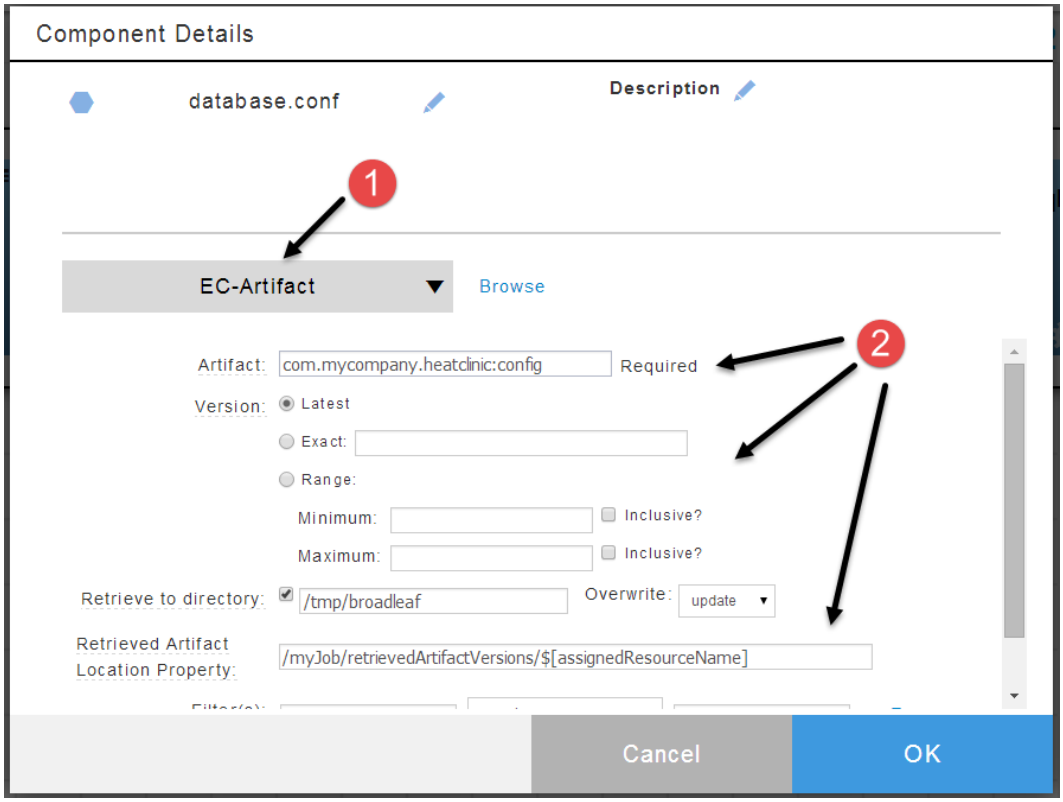
3. Enter the name and optional description of the component and click **Next**.

   The Component Details dialog box appears.

4. Select the Content Location, enter the component details, and click **OK**.

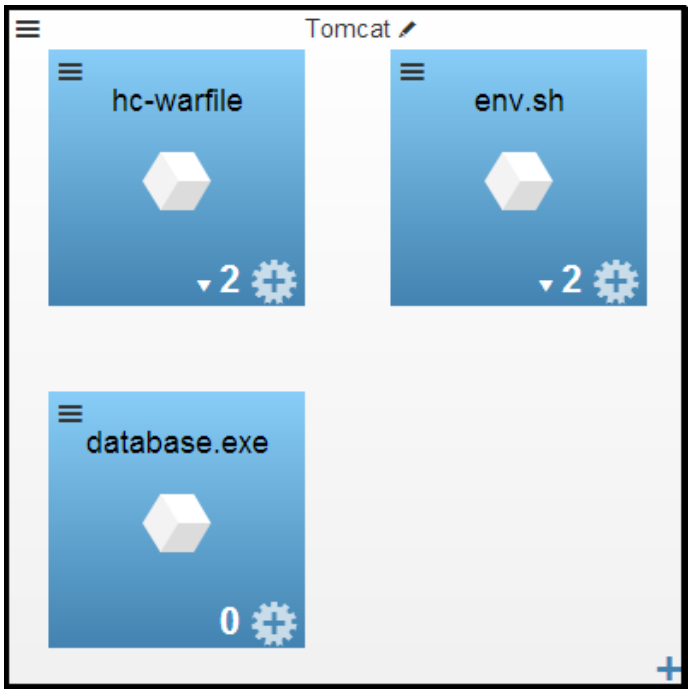
   In the following example:

   - The new component is named database.conf.
   - The Content Location is EC-Artifact, the default plugin.
   - In the Artifact field, *com.mycompany.heatclinic:config* comes from the Artifact Repository in the ElectricCommander platform.



1	Content Location of the component
2	Component details that vary depending on the Content Location

The Applications Designer now appears with the new component.



Related information:

- ElectricFlow Icons
- Applications Designer

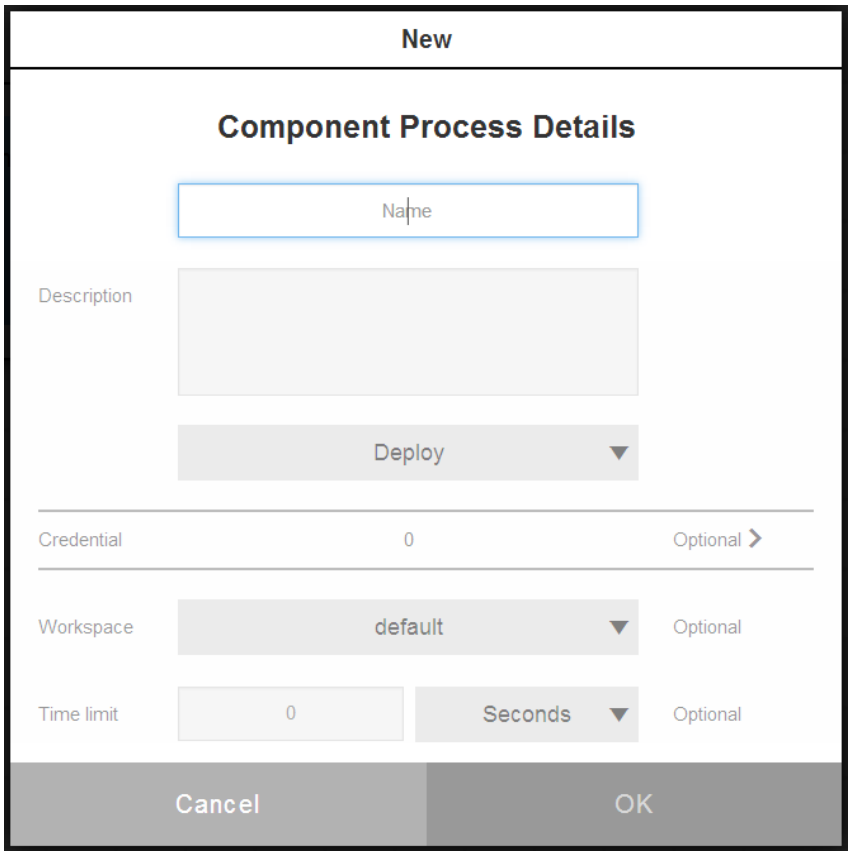
Component Processes

How to get here:

- When designing a new component process:

  From the Applications Designer, select a component in an application tier and click the "Add component process" icon.

  The Component Process Details dialog box appears.

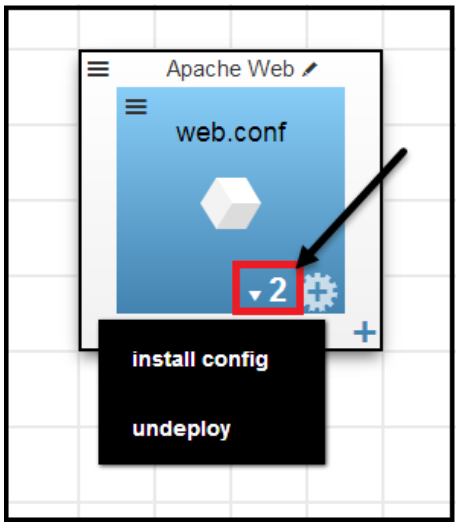


Field	Description and How to Set It
Name	Name of the process step
Description	Description of the process step
Process Type	Type of process. The default is **Deploy**. To set the process type: 1. Click the **Type** field to select the process type. 2. Select one of these options: **Deploy**–Enables inventory tracking. The ElectricCommander server tracks the artifacts deployed to environments. **Undeploy**–The next time that the process is run, the ElectricCommander server removes information about the artifacts deployed to environments. **Other**–Disables inventory tracking.

Field	Description and How to Set It
Credential	An object consisting of a user name and password that ElectricFlow uses to run a process step. The dialog box displays the number of credentials for the process step, which are the same credentials that you use with procedures, steps, and schedules in the ElectricCommander platform. You can only impersonate one credential. To set the process type, see Adding Credentials.
Workspace	Area in the disk space where the files and results of the job step are stored. To set the workspace, click the **Workspace** field to open a drop-down list of workspaces in the ElectricCloud platform and select a workspace. For more information about workspaces, go to the ElectricCommander Help > Workspaces and Disk Management. To set the workspace, click Workspace to open a drop-down list of workspaces in the ElectricCloud platform. Select a workspace, and click OK.
Time limit	Maximum length of time that the step is allowed to run. After the time specified, the step is aborted, To set the time limit, enter the time and select the unit of time: seconds, minutes, or hours. For information about time limits for procedure job steps in the ElectricCommander platform, go to the ElectricCommander Help > API Commands.

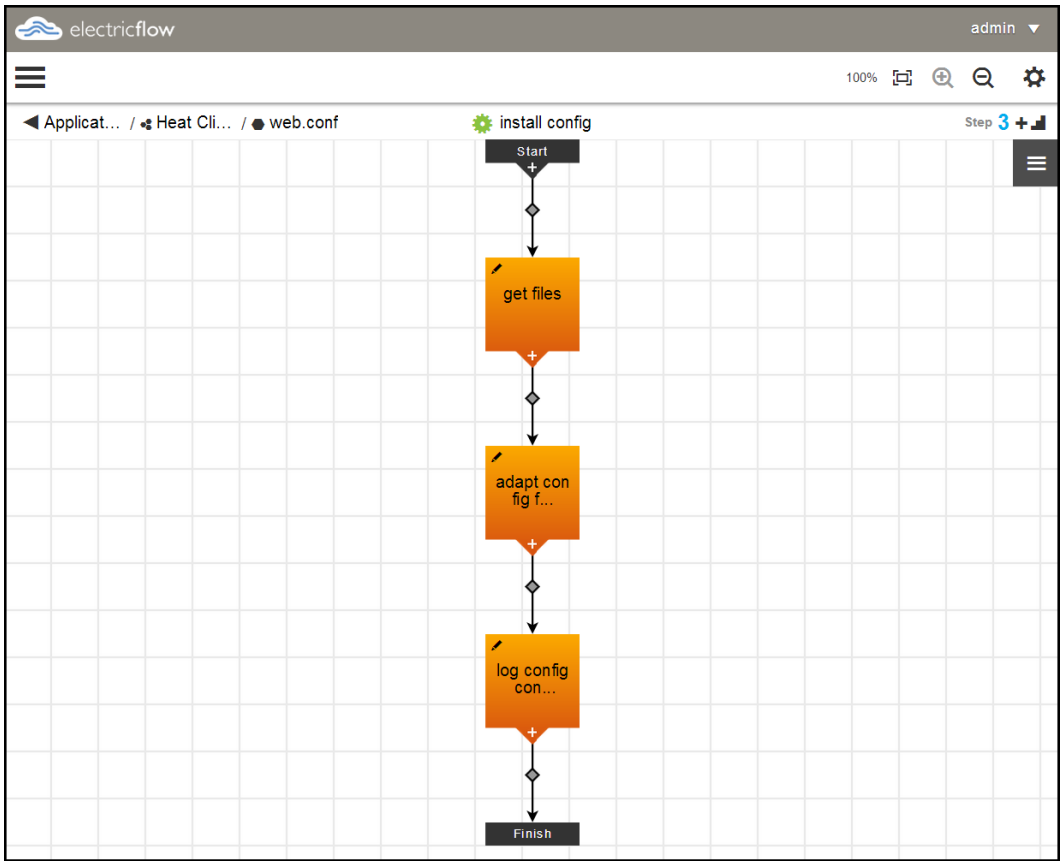
- When selecting an existing component process:

  From the Applications Designer, select a component in an application tier, click the "Show component process" icon, and select a component process in the drop-down list.

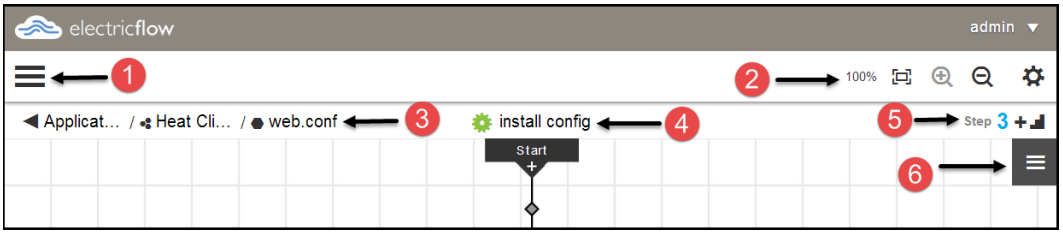


In this example, the component process called "install config" has been selected.

The steps in the component process appear in the Component Process Designer.



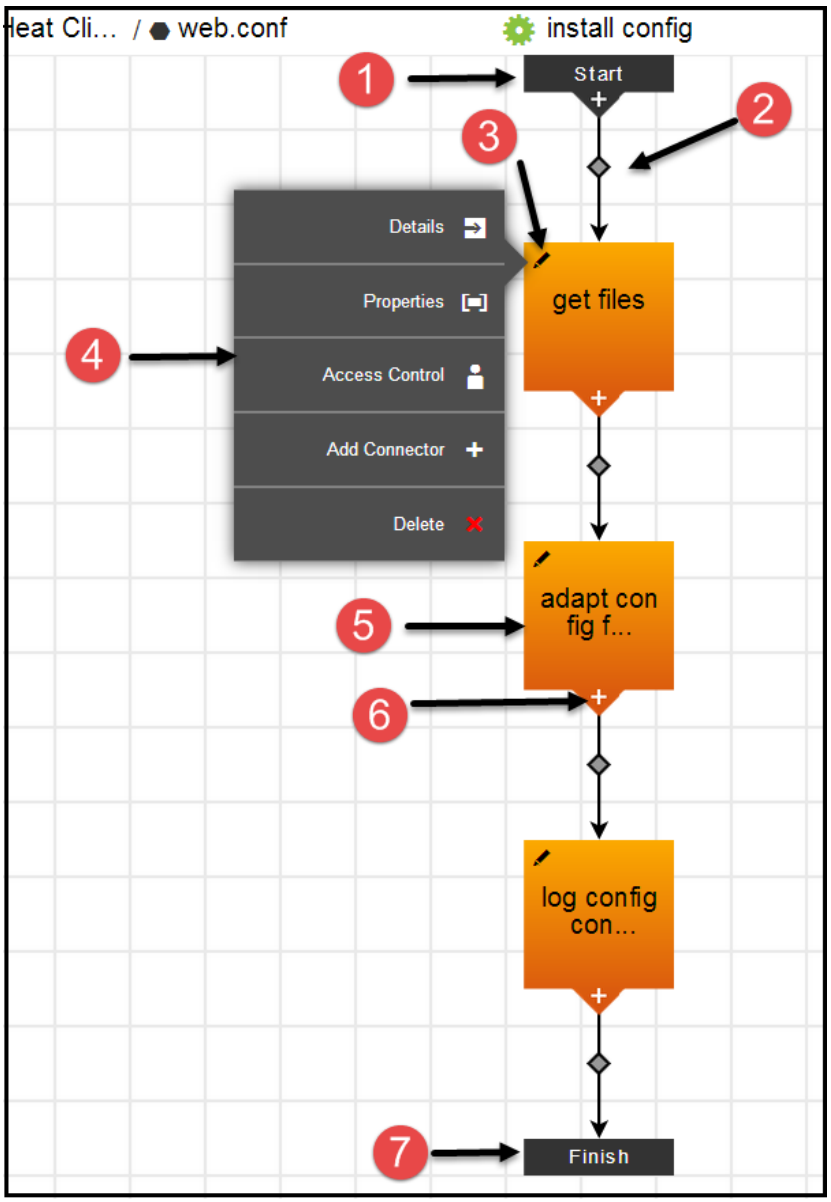
The Component Process Designer has these objects:



1	Main menu
2	This information is view only. ElectricFlow automatically adjusts the page settings to show all the tiers in the application. For example, if all the tiers do not fit on the page at 100% magnification, ElectricFlow reduces the magnification until all the tiers appear on the page.
3	Breadcrumbs specifying the object type/application name/component name
4	Name of the component process

5	Number of steps in the process with the "Add step" icon
6	Component process menu icon Click this icon to view the component process details.

The component process has these objects:



1	Start of the process

2	Connector icon Click this icon to configure the branching conditions between two process steps. The default is **Always**, which means always go to the next step.
3	Process-step details icon Click this icon to open the process-step details menu.
4	Process-step details menu
5	Component process step
6	Click the plus (+) sign to add a step below the current step.
7	End of the process

Related information:

- ElectricFlow Icons
- Applications Designer
- Adding Credentials
- Configuration Guidelines for Process Branching

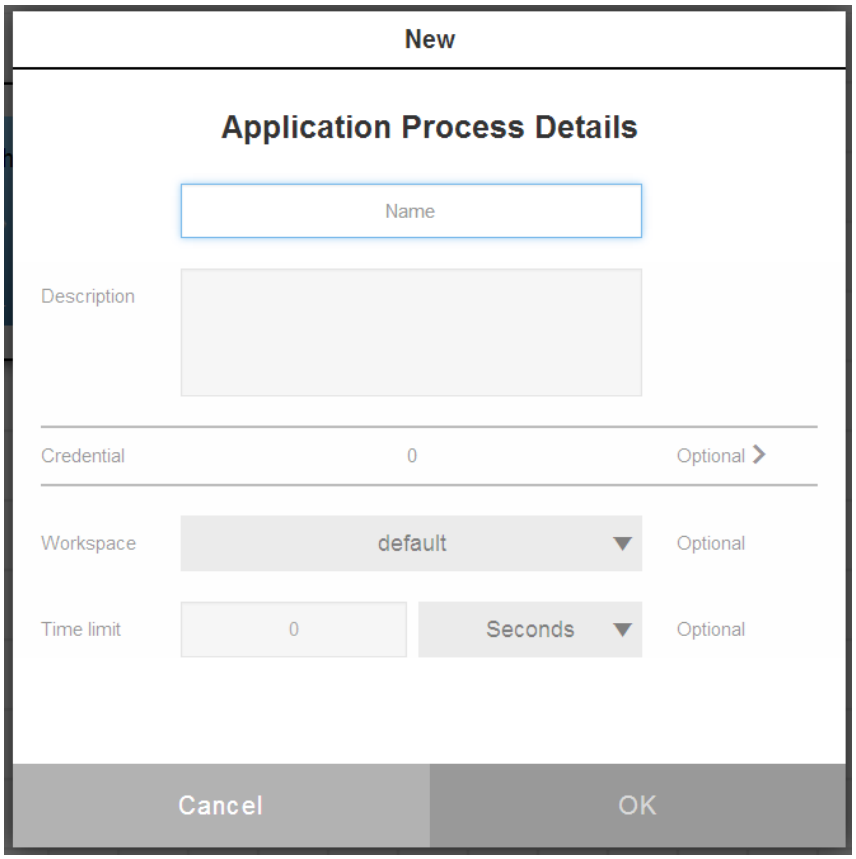
Application Processes

How to get here:

- When designing a new application process

  From the Applications Designer, click the "Add application process" icon.

  The Application Process Details dialog box appears.



Field	Description and How to Set It
Name	Name of the process step
Description	Description of the process step
Credential	An object consisting of a user name and password that ElectricFlow uses to run a process step. The dialog box displays the number of credentials for the process step, which are the same credentials that you use with procedures, steps, and schedules in the ElectricCommander platform. You can only impersonate one credential.

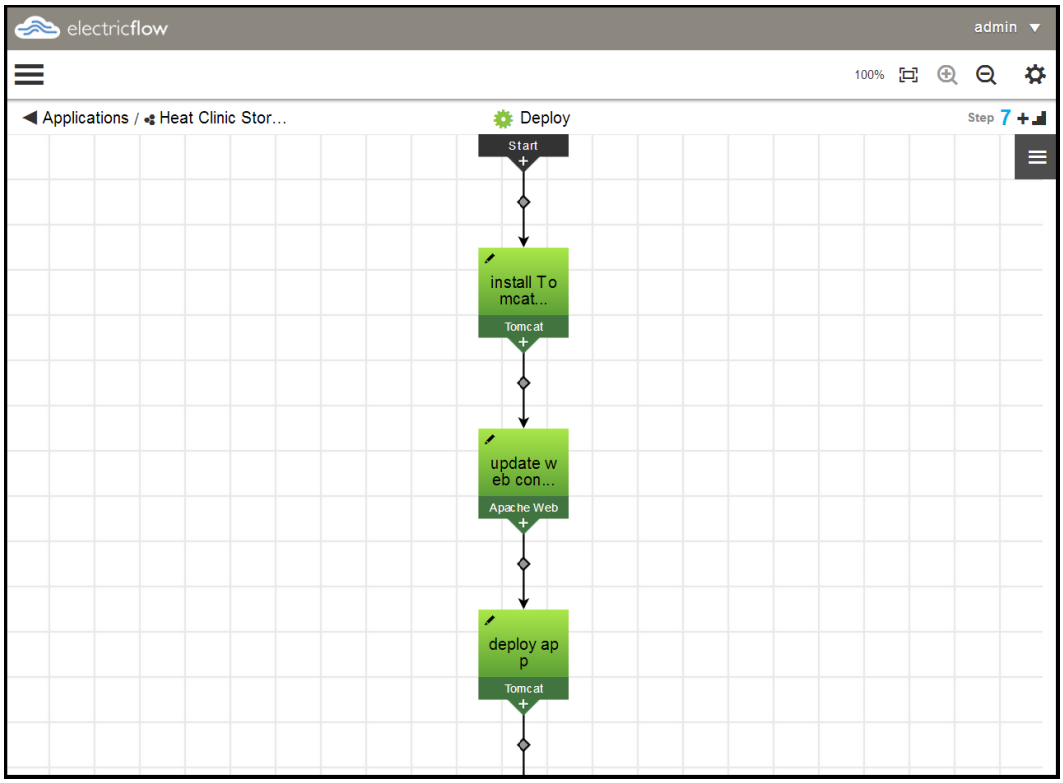
Field	Description and How to Set It
Workspace	Area in the disk space where the files and results of the job step are stored. To set the workspace, click the **Workspace** field to open a drop-down list of workspaces in the ElectricCommander platform and select a workspace. For more information about workspaces, go to the ElectricCommander Help > Workspaces and Disk Management. To set the workspace, click Workspace to open a drop-down list of workspaces in the ElectricCommander platform. select a workspace, and click **OK**.
Time limit	Maximum length of time that the step is allowed to run. After the time specified, the step is aborted, To set the time limit, enter the time and select the unit of time: seconds, minutes, or hours. For information about time limits for procedure job steps in the ElectricCommander platform, go to the ElectricCommander Help > API Commands.

- When selecting an existing component process

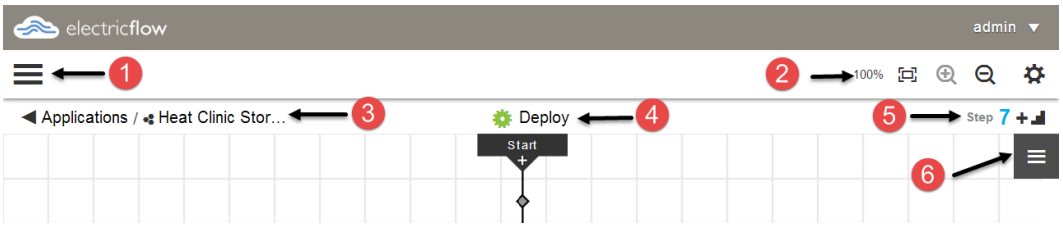
  From the Applications Designer, click the down arrow next to the number of application processes, and select an application process in the drop-down list.

This example shows an application process called "Deploy." The application process has the same objects as the component process.

The steps in the application process appear in the Application Process Designer.



The Applications Process Designer has these objects:



1	Main menu
2	This information is view only. ElectricFlow automatically adjusts the page settings to show all the tiers in the application. For example, if all the tiers do not fit on the page at 100% magnification, ElectricFlow reduces the magnification until all the tiers appear on the page.
3	Breadcrumb specifying the object type/application name
4	Name of the application process
5	Number of steps in the process with the "Add step" icon
6	Application process menu icon Click this icon to view the application process details.

Related information:

- ElectricFlow Icons
- Applications Designer
- Adding Credentials
- Component Processes

Designing Process Steps

This example describes how to designing the process steps for application and component processes using commands.

The procedure to define process steps for application processes and component processes is the same except for the dialog boxes to configure the process steps.

- To design steps in an application process, go to the Application Process Designer.

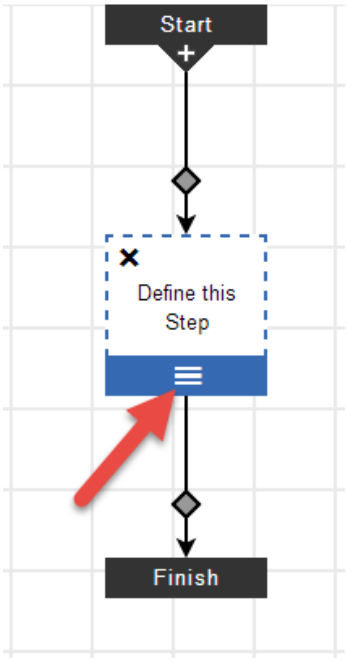
  How to get to there: From the Applications Designer, click the "Add application process" icon > enter the information about the process in the Application Process Detail dialog box > click **OK**.

- To design steps in a component process, go to the Component Process Designer.

  How to get to there: From the Applications Designer, select a component > click the "Add component process" icon > enter information about the process in the Component Process Detail dialog box > click **OK**.

Note: The following procedure applies to both application and components. The objects in the Application Process Designer and the Component Process Designer are the same.

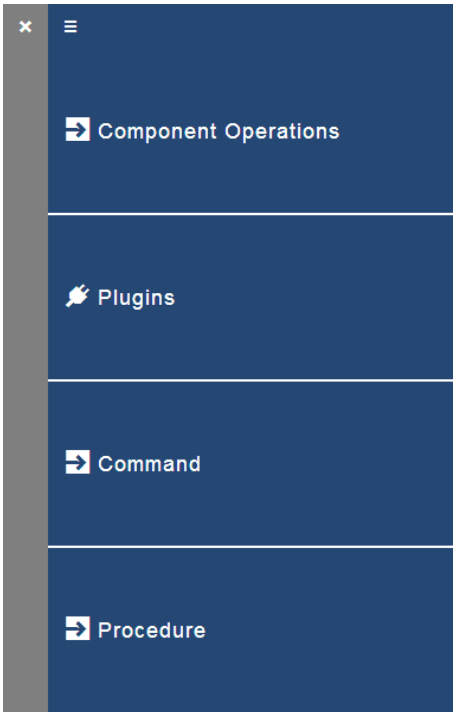
1. In the new process step, click the icon below "Define this Step" to define it.



   The Component Process Step or Application Process Step wizard appears.

2. Enter information about the process step.

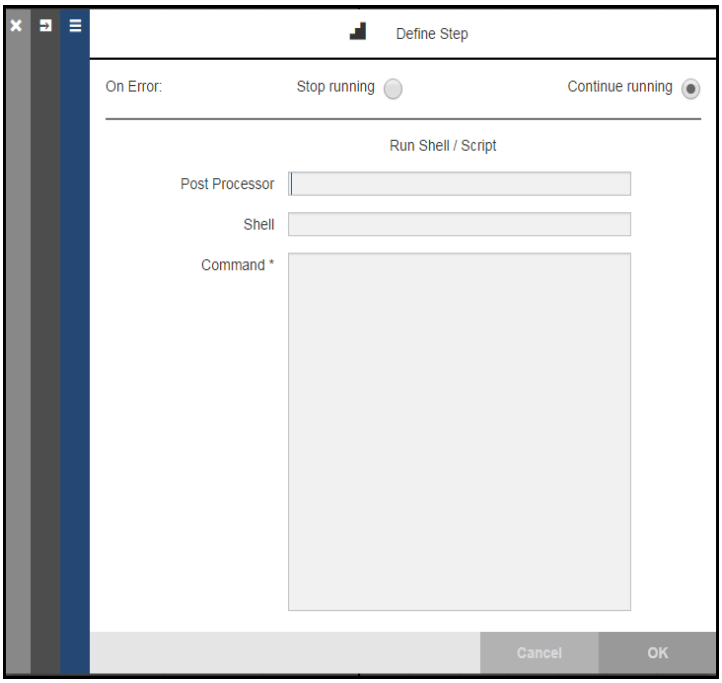
3. Click **Next**.The process step wizard appears.



4. Click **Command** to define the process step with a command.

   The Define Step wizard appears.

   Note: Starting in ElectricFlow 5.1, you can enter a postprocessor command for a component or application process step in the Post Processor field.



5. Enter the following information:

   - Select **stop running** or **continue running** in the **On Error** field.
     - When you select **stop running**, ElectricFlow stops the job if an error occurs.

       This step overrides the process branching condition. When an error occurs, the process aborts regardless of the branching condition.
     - When you select **continue running**, ElectricFlow continues to run the job if an error occurs.

       This setting overrides the process branching condition. When an error occurs and the branching condition is Failure, the process continues to the next step.
   - Enter the postprocessor command in the **Post Processor** field.
   - Enter the shell name in the Shell field.
   - Enter the command in the Command field.

6. Click **OK**.

   The step now appears in the process.

Related information:

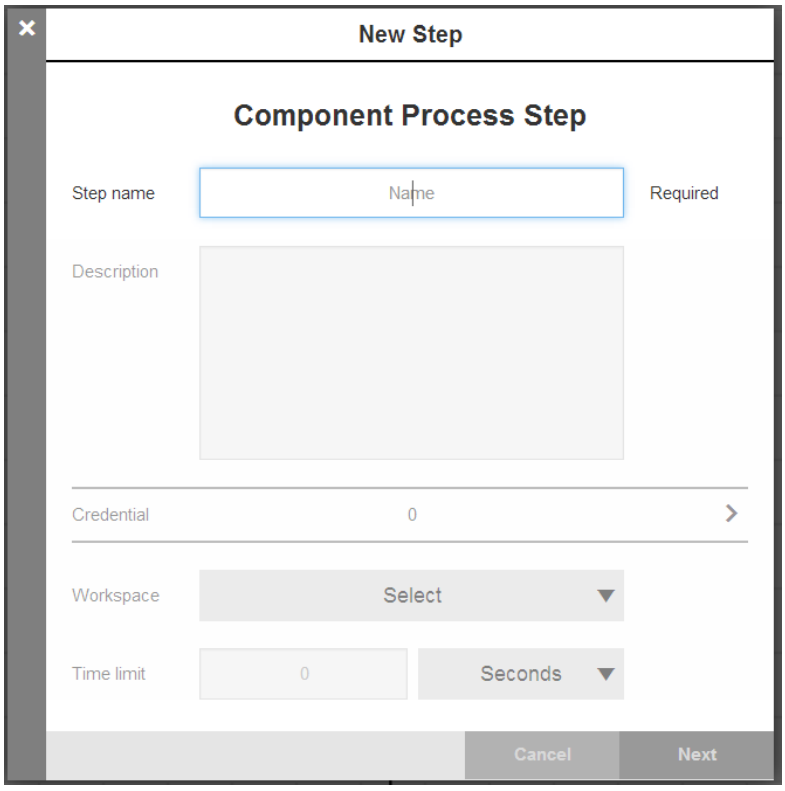
- ElectricFlow Icons
- Applications Designer
- Application Processes
- Component Processes
- Component and Application Process Steps

Component and Application Process Steps

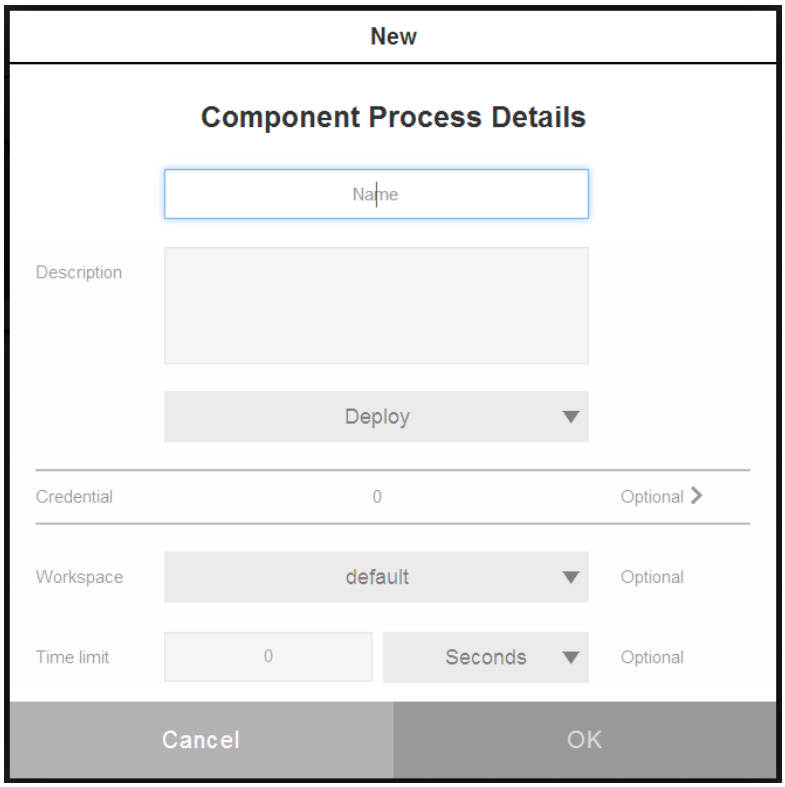
This topic describes Component Process Step and Application Process Step dialog boxes that you use to design component and application process steps.

Designing a New Process Step

How to get to the Component Process Step dialog box: From the Applications Designer, select an application tier > select a component > click the "Add component process" icon in the component.



How to get to the Application Process Step dialog box: From the Applications designer, click the "Add application process" icon in the upper right corner of the page.



Designing an Existing Process Step

How to get to the Component Process Step dialog box: From the Applications Designer, select an application tier > select a component > click the "Show component process" icon in the component.

This dialog box is similar to the dialog box for a new step except that it has the "Edit Step" label on the top.

How to get to the Application Process Step dialog box: On the Applications Designer, click the process icon next to the number of application processes in the upper right corner of the page.

The Application Process Step dialog box is the same as the dialog box for a new step except that it has the "Edit Step" label on the top.

Setting Parameters in the Process Step Dialog Boxes

IMPORTANT:
When you impersonate a credential, make sure that the impersonated user has the absolute path to the bin directories in the $PATH environment.
If you define a process step with a command, you must enter the absolute path in the **Post Processor** and **Shell** fields in the Define Step dialog box.

Enter information in the following fields:

- **Name** (required)–Name of the process step.
- **Description**–Description of the process step.
- **Tier** (application process step only)–Application tier in which the process step runs.

- **Credential**–An object consisting of a user name and password that ElectricFlow uses to determine who or what runs a process step.

  The field displays the number of credentials for the process step, which are the same credentials that you use with procedures, steps, and schedules in the ElectricCommander platform.

  To set the credentials, click **>** to open the Credentials dialog box.

  You can add only one credential for impersonation, and you can attach more than one credential to the process step.

  If a credential is set to impersonate, you can also attach that credential to the process step.

  For more information about credentials, go to the ElectricCommander Help > Credentials and User Impersonation.

- **Workspace**–Area in the disk space where the files and results of the job step are stored.

  To set the workspace, click the **Workspace** field to open a drop-down list of workspaces in the ElectricCloud platform and select a workspace.

  For more information about workspaces, go to the ElectricCommander Help > Workspaces and Disk Management in the *ElectricCommander Help*.

  To set the workspace, click Workspace to open a drop-down list of workspaces in the ElectricCommander platform, select a workspace, and click **OK**.

- **Time limit**–Maximum length of time that the step is allowed to run. After the time specified, the step is aborted.

  To set the time limit, enter the time and select the unit of time: seconds, minutes, or hours.

  For information about time limits for procedure job steps in the ElectricCommander platform, go to the ElectricCommander Help > API Commands.

Related information:

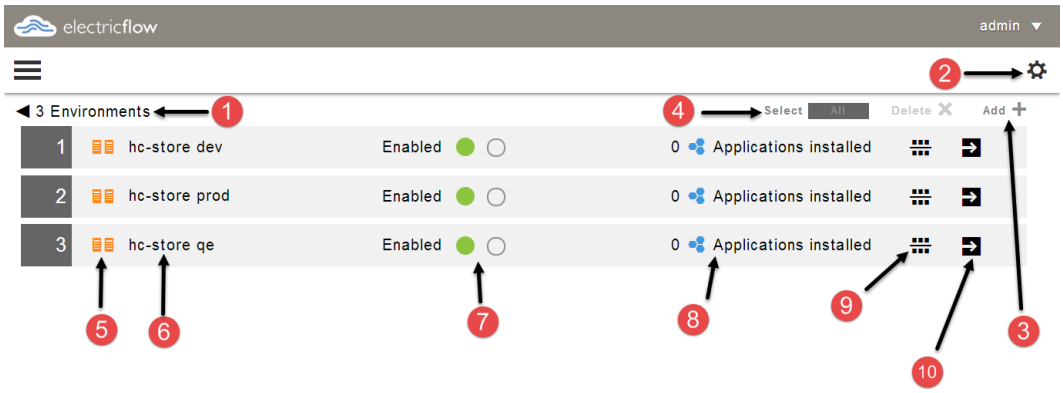
- ElectricFlow Icons
- Applications Designer
- Application Processes
- Component Processes
- Designing Process Steps
- Credentials and Impersonation in ElectricFlow

Environments List

How to get here:

- From the Home page, click the **Environments** launch pad.
- From the main menu on the Home page, click the **Environments** destinations.

Use this list to track the environments in your continuous delivery solution.



1	Breadcrumb, which shows the total number of environments in your ElectricFlow system.
2	Administrative settings menu Click this icon to open a list of links to the administration area in the ElectricCommander platform. These links are the same as the links in the administrative settings menu on the Home page.
3	Click the plus sign (+) to add an environment.
4	If you click **All**, all the environments are selected and the delete icon (X) is now available. Click the Delete icon to delete all of the environments. If you select one or more environments, click the Delete icon to delete the selected environments. the delete icon (X) is now available If you click **None**, none of the environments are selected and the Delete icon is not available.
5	Environment icon
6	Name of the environment
7	Status of the environment When the status is Enabled and the green button appears, you can run the application after setting the tier map.
8	Total number of applications installed with the application icon

9	Inventory icon. Click this icon to view the environment inventory.
10	Click this arrow icon to go to the Environments Designer.

Related information:

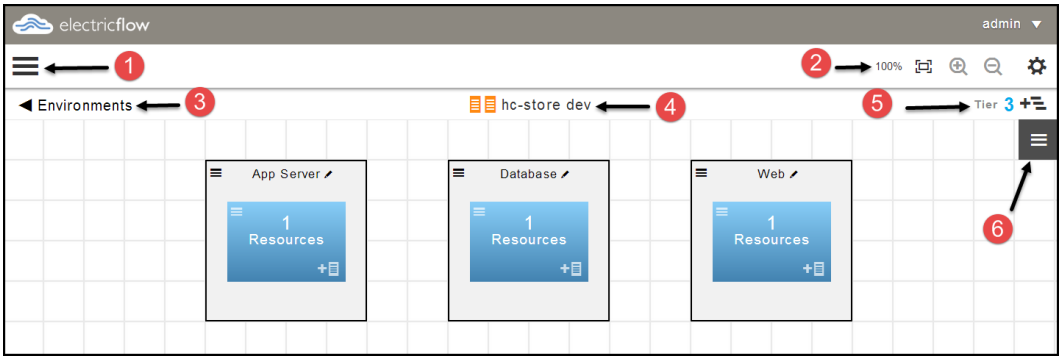
- ElectricFlow Icons
- Home Page
- Main Menu

Environments Designer

How to get to here: From the Environments List page, select an environment.

Environments consist of resources that are grouped into tiers. The component and application processes run on resources assigned to environments.

To run applications, you must configure tier maps of application tiers to environment tiers.

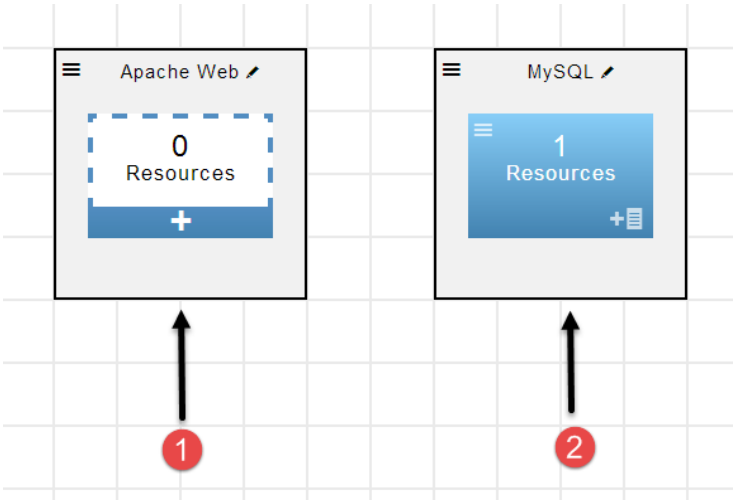


The following information is on this page:

1	Main menu
2	This information is view only. ElectricFlow automatically adjusts the page settings to show all the tiers in the environment. For example, if all the tiers do not fit on the page at 100% magnification, ElectricFlow reduces the magnification until all the tiers appear on the page.
3	Breadcrumbs

4	Environment name
5	Number of tiers in the environment and the tier icon Click the "Add tier" icon to add an environment tier.
6	Environments menu icon Click this icon to view the environment details.

The appearance of the resources in an environment tier changes when you assign a new resource to a specific resource managed by the ElectricCommander platform.



1	The resource has been added to an environment tier but is not assigned to a specific environment tier.
2	The resource has been assigned to a specific environment tier.

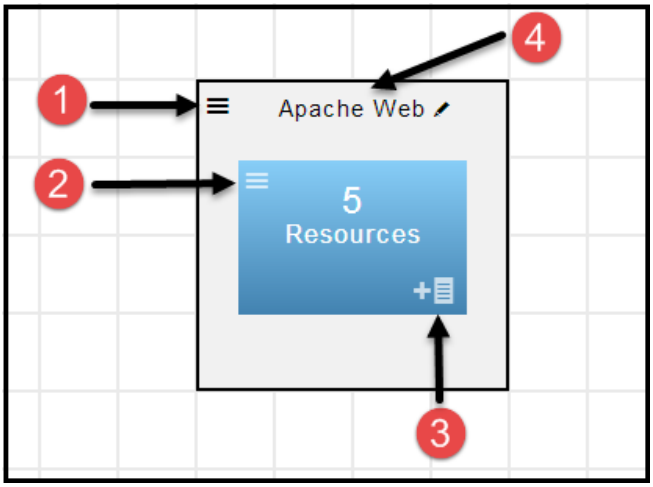
Related information:

- ElectricFlow Icons
- Home Page
- Main Menu

Environment Tiers

How to get here: From the Environments Designer, select an environment tier.

Environment tiers consist of resources that can be assigned to applications.

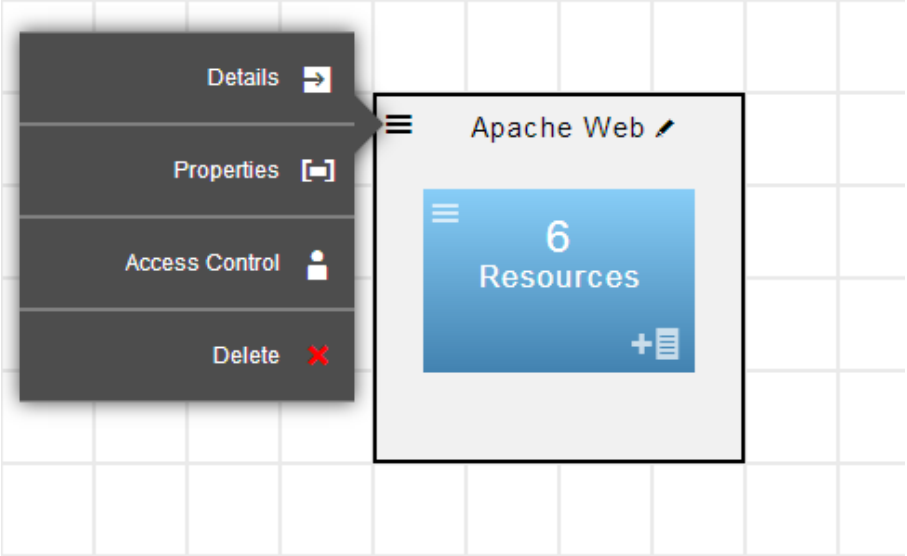


The following information is available about the tier.

1	Environment tier menu icon Click this icon to see the tier details.
2	Resource menu icon Click this icon to view the resource details.
3	"Add a resource" icon Click this icon to add a resource in the tier.
4	Environment tier name and edit icon Click the edit icon to edit the tier name and description.

Environment Tier Details

When you click the environment tier menu icon, the environment tier details menu appears.



You can click on one of the following for more information:

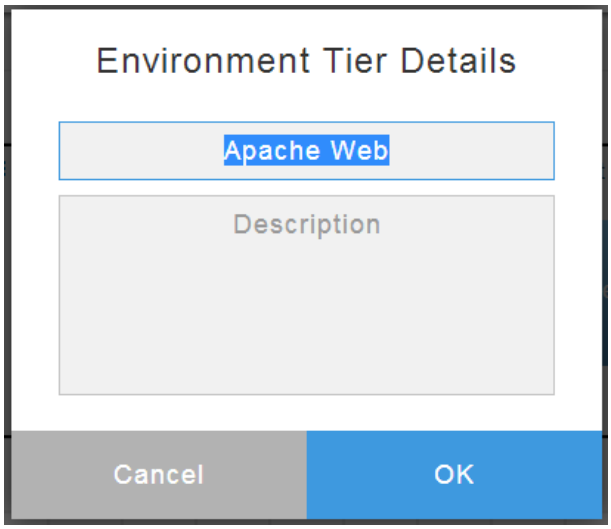
- **Details**
- **Properties**
- **Access Control**
- **Delete**

  When you click **Delete**, everything for the tier, including the tier and all the resources in it, is deleted.

Details

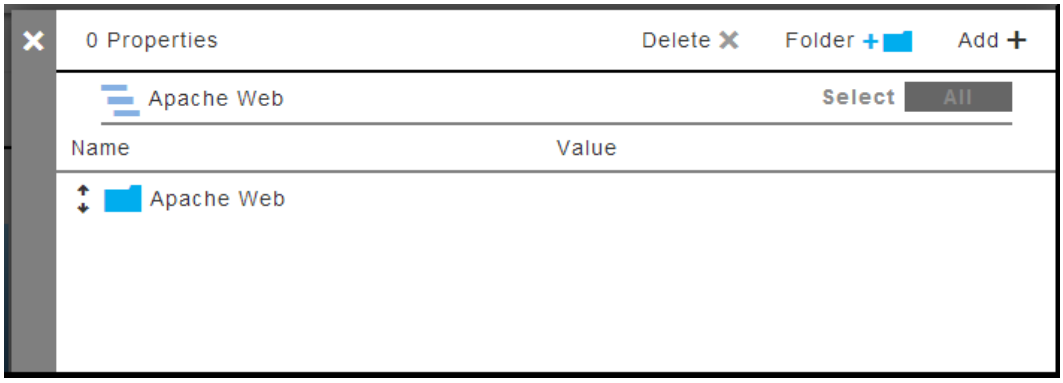
When you click **Details** in the environment tier details menu, the Environment Tier Details dialog box appears. It also appears when you click the pencil icon.

You can change the name of the environment tier and add a description about it.



Properties

When you click **Properties** in the environment tier details menu, the environment tier Properties dialog box appears.



You set the properties for the environment tier or resource.

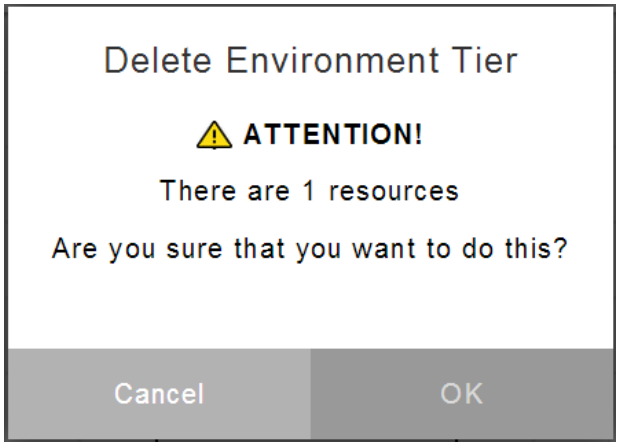
Access Control

When you click **Access Control**, you go to the Access Control page in the ElectricCommander platform. You can set privileges for the objects in your application.

For more information about the Access Control page, go to the ElectricCommander Help > Projects > Select a project > Access Control.

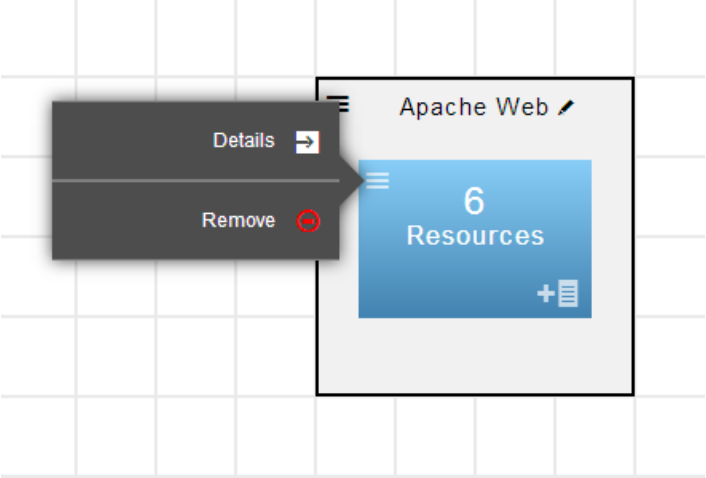
Delete

When you click **Delete**, the Delete Environment Tier dialog box appears.



Resource Details

When you click the resource menu icon, the resource details menu appears.



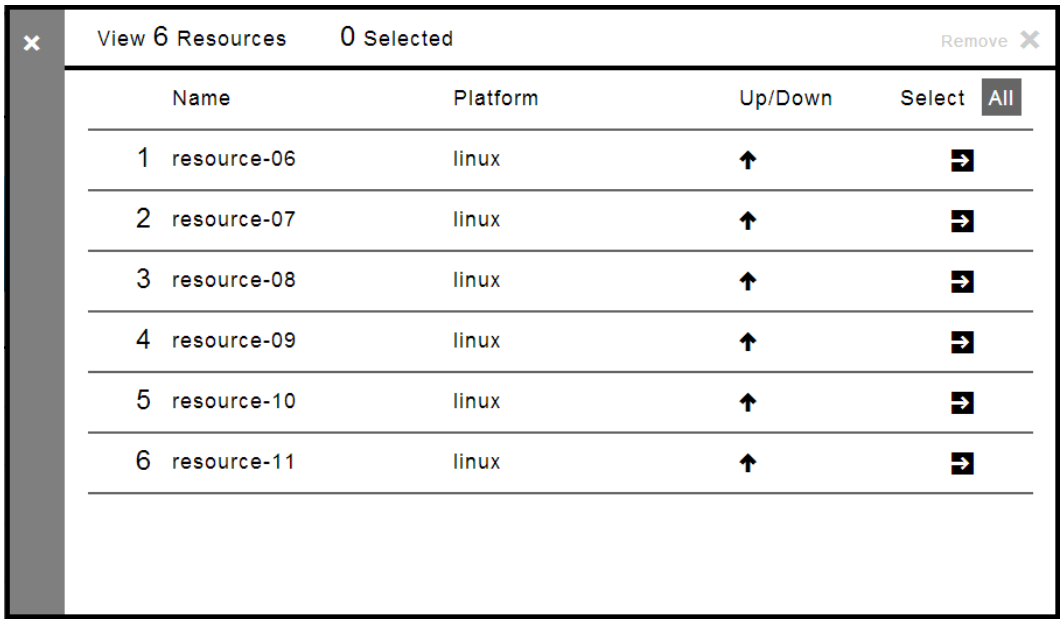
You can click on one of the following for more information about the environment tier or resource:

- **Details**
- **Remove**

  When you use **Remove**, only the resources that you selected are deleted from the environment tier.

Details

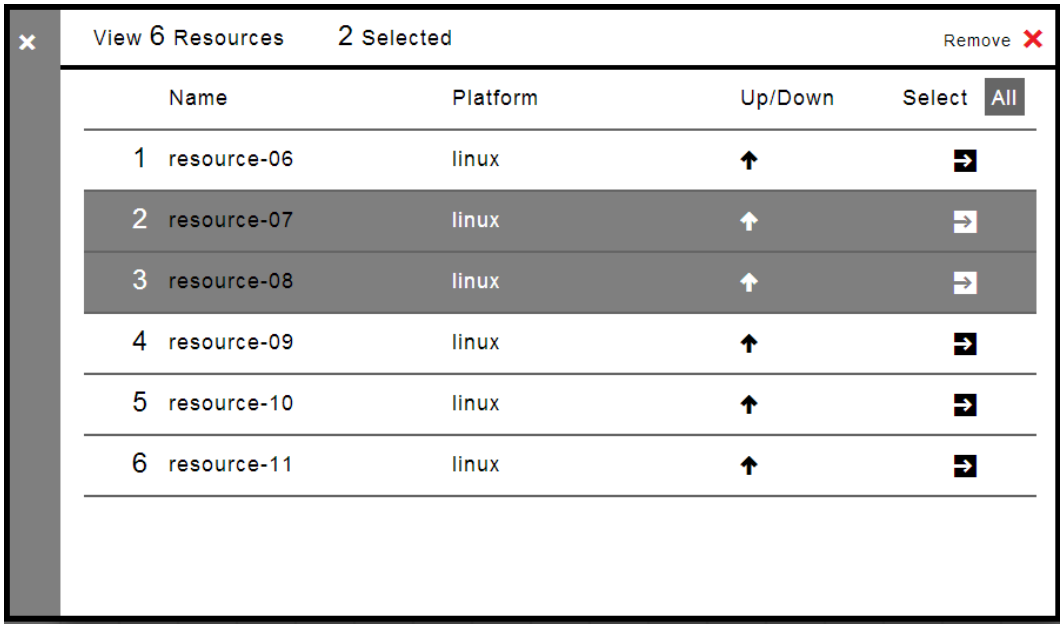
When you click **Details** in the resource details menu, the resource list appears. For each resource in the application, it shows the resource name, the platform it is on, and the status.



When you click the right arrow, you go to the Resources page in the ElectricCommander platform. For more information about the Resources page, go to the ElectricCommander Help > Web Interface Help > Resources.

Remove

Select one or more resources and click **Remove X** to remove only the selected resources from the environment tier.

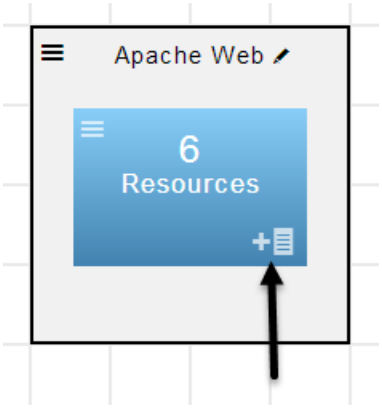


Adding Resources to Environment Tiers

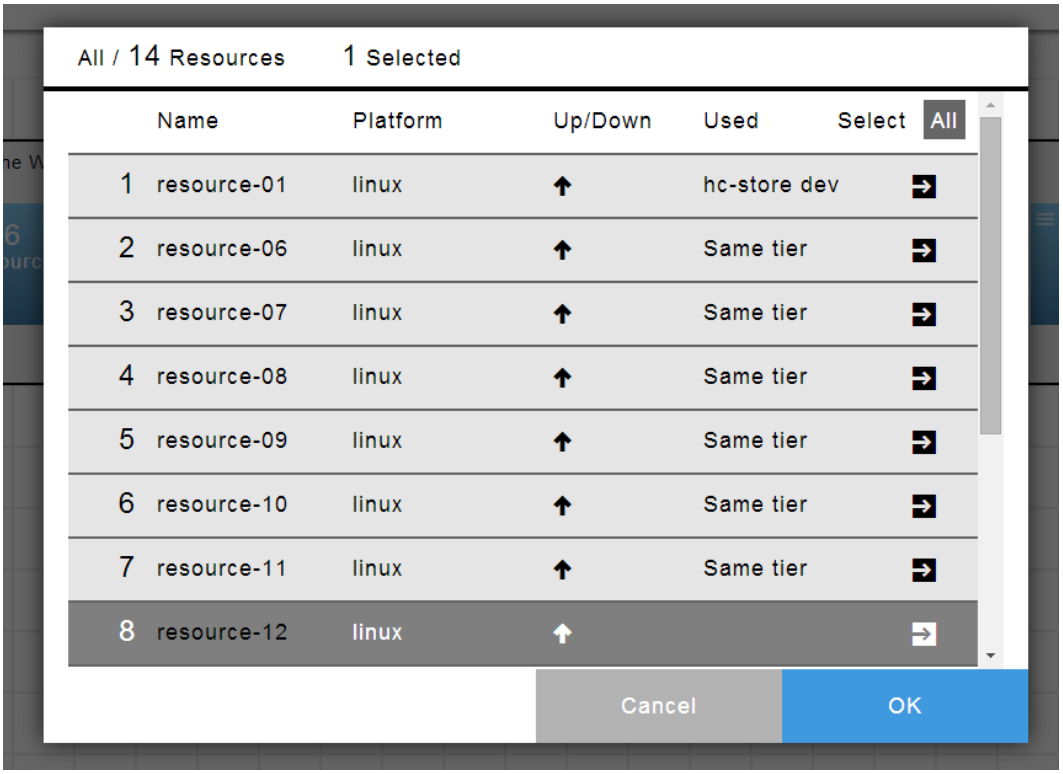
This example shows how to add a resource to an environment tier.

1. Click the "Add a resource" icon.

   The resource list appears.



2. Select one or more resources and click **OK**.



3. The environment tier re-appears and is updated to show that resources have been added to the tier.

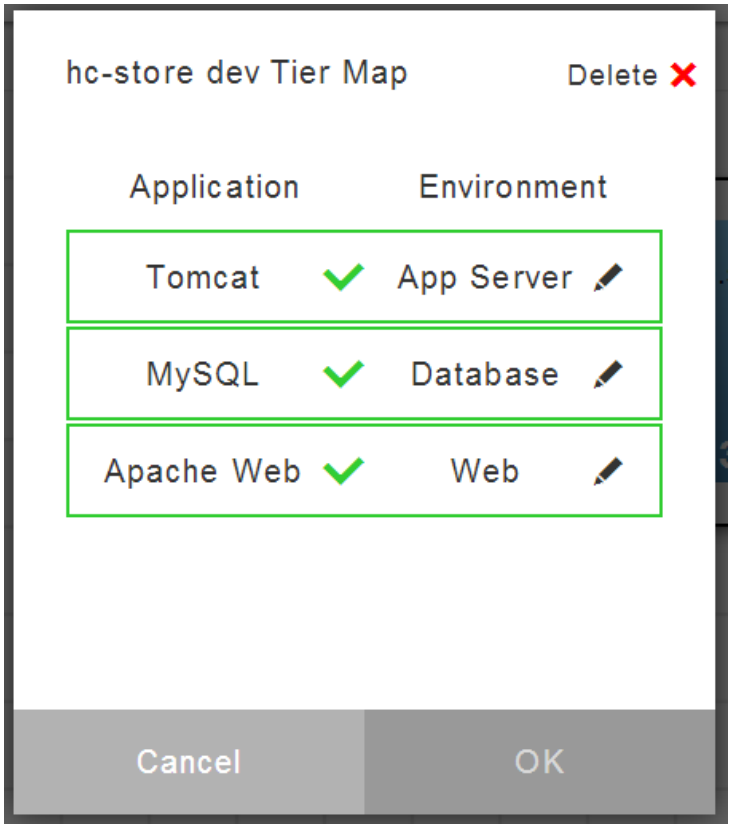
Related information:

- ElectricFlow Icons
- Home Page

Tier Maps

How to get to a Tier Map: From the Applications Designer, click the down arrow next to the number of tier maps.

You must configure a tier map if you want to run an application. A tier map is a mapping of application tiers to environment tiers for a specific application and an environment with resources.

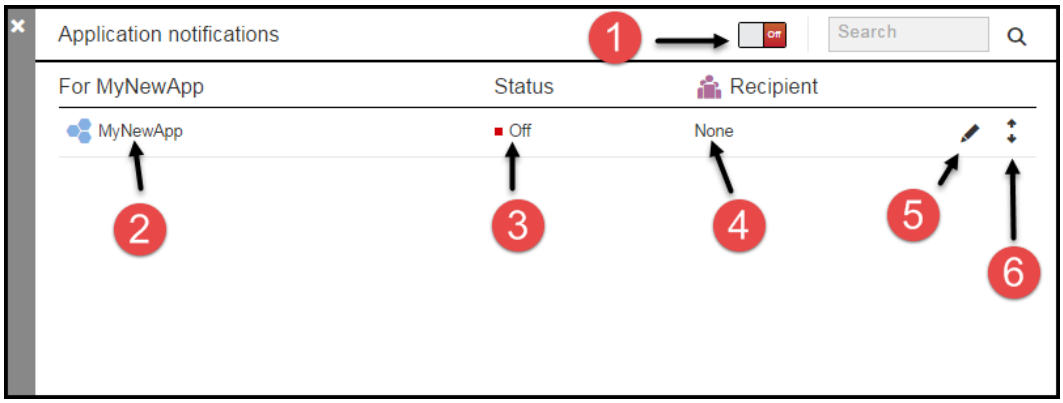


Related information:

- ElectricFlow Icons
- Home Page
- Environments List
- Making Tier Maps

Application Notifications Wizard

How to get here: From the Applications Designer, click the Applications menu icon > select **Notifications**.

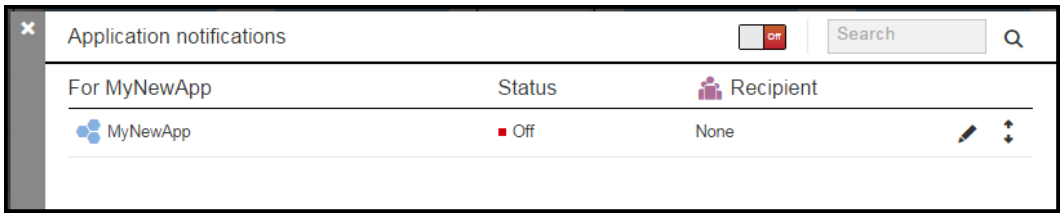


The following information is in this wizard.

1	Notifications toggle. Click this to enable (**On**) or disable (**Off**) email notifications for the application. • Enable–The system sends email notifications to the specified recipients. • Disable–The system do not send email notifications.
2	Name of the application.
3	Status of the notification for the object at the current level. • On–The system sends email notifications. • Off–The system do not send email notifications.
4	How many recipients receive notifications. The values are **None** and **Some** (one or more). When **Some** is in the Recipient column, click the edit icon to see who the recipients are
5	Edit icon. Click this to edit a notification. The "Application notifications / edit" wizard opens.
6	View icon Click this to view the notifications for the object one level below the current level. In this example, when you click this icon in the MyNewApp row, the application processes in the MyCoolApp application appear in the rows below.

Setting Notifications for the First Time

New email notifications are disabled in the application, its application processes, and the process steps before you configure them.



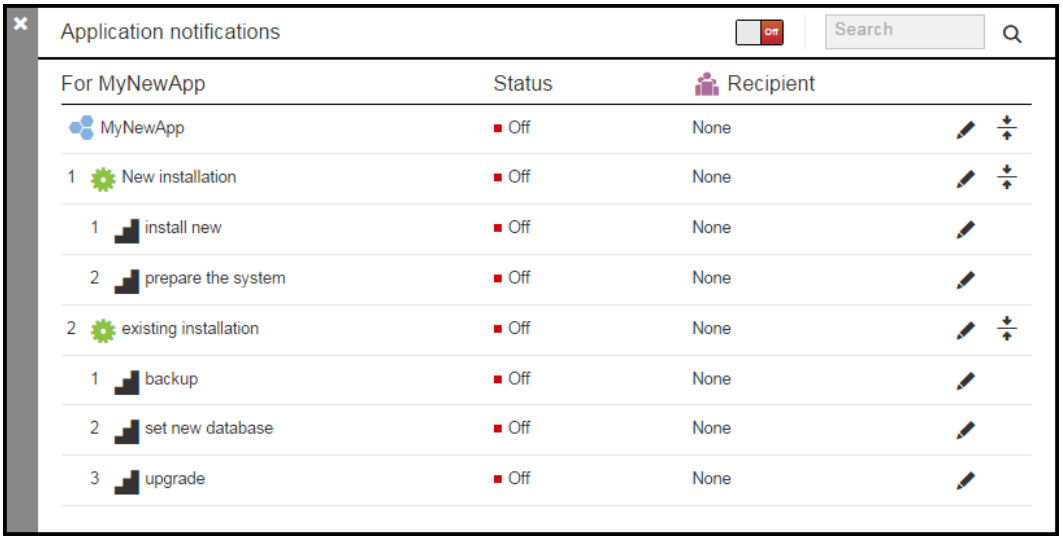
You configure notifications in the "Application notifications / edit wizard."

IMPORTANT: The first time that you set notifications in this wizard, the Notifications toggle changes to **On**. After you enter notification settings and click **OK**, email notifications are enabled at that level.

To see the notification settings for the application processes and process steps, click the View icon. The settings for the application processes appear.

Example:

Click the View icon for each application process. The settings for processes steps appear.



The first time that you set notifications in the application, application processes, or process steps in the "Application notifications / edit wizard," the Notifications toggle changes to On. After you enter the notification settings and click OK, email notifications are enabled at that level.

Enabling Notifications

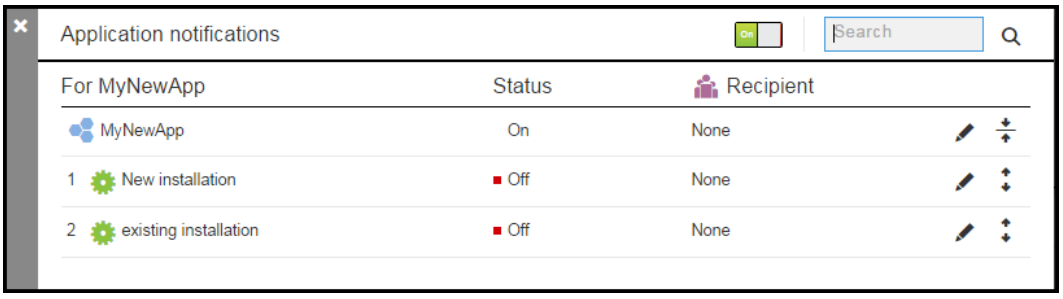
You can enable notifications at the application, application process, and process levels.

To enable email notifications at the application level:

- Click the Notifications toggle and change it to **On**.

  The status of the application changes to **On**.

  Example:



- Click the edit icon to open the "Application notifications / edit" wizard.

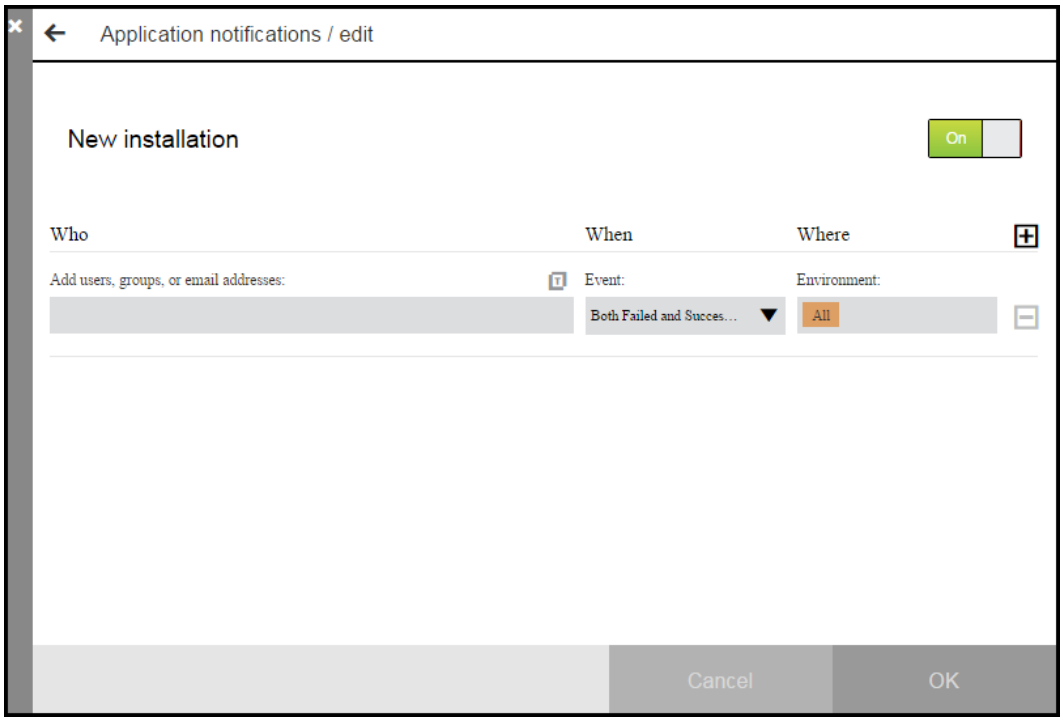
  The Application notifications / edit wizard appears. The Notification toggle changes to **On**.

  Example:

To enable notifications at the application process and process step levels, go to the "Application Notifications / edit" wizard for the specific process or process step.

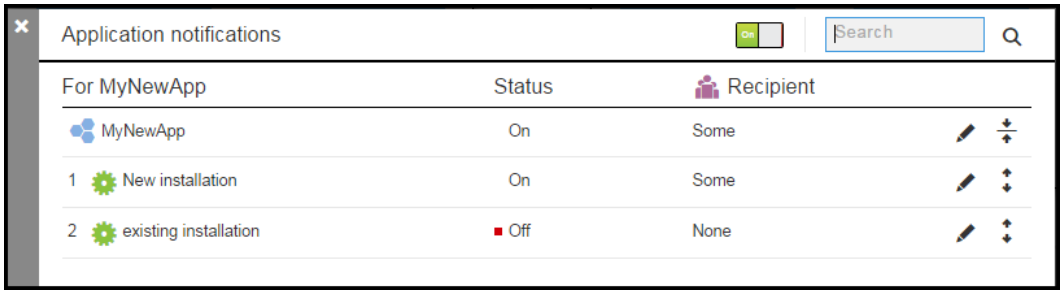
The wizard opens, and the Notifications toggle is now **On**.

Example:



When you enter notification settings in the wizard and click **OK**, the settings are saved. The Application notifications wizard appears and now shows that the application process status is **On**.

Example:



Adding Notifications

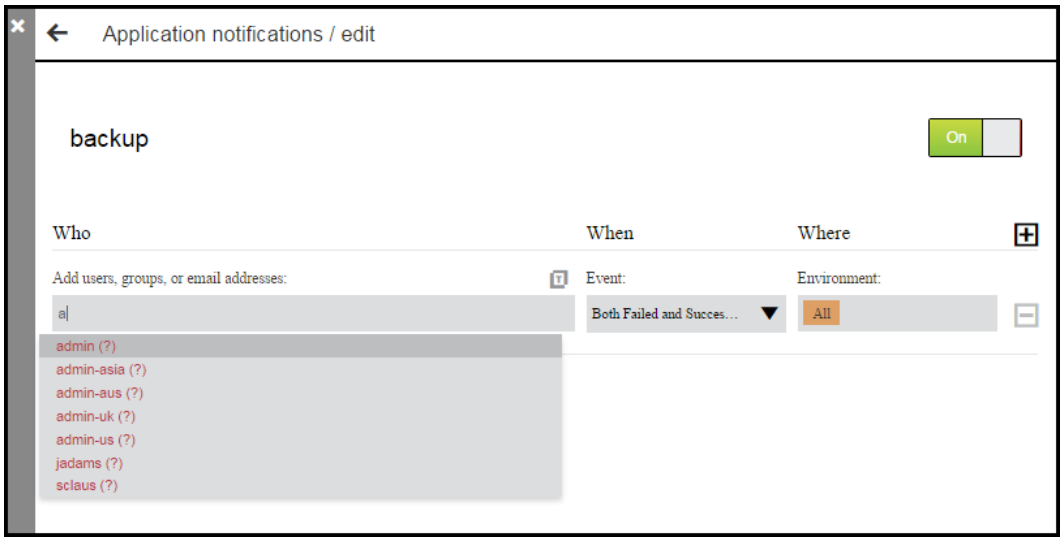
You can configure one or more notifications in an application process or other object.

Configuring recipients

In the **Who** field, you add users or groups who are configured and managed in the ElectricCommander platform or email addresses.

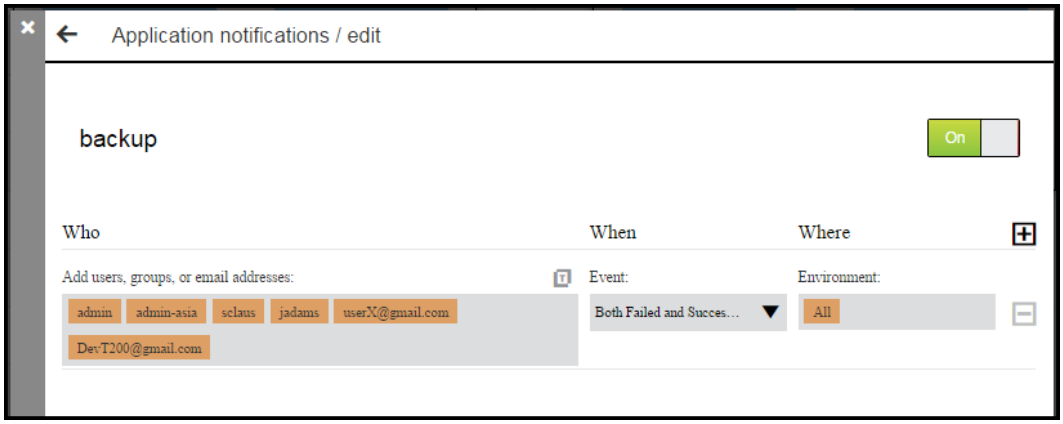
When you start typing a user name, group name, or email addresses, a list of names or email addresses appear that match what you are typing.

Example:



If one of the suggestions matches the name or email address, select it, or continue typing. You can add more than one name or email address.

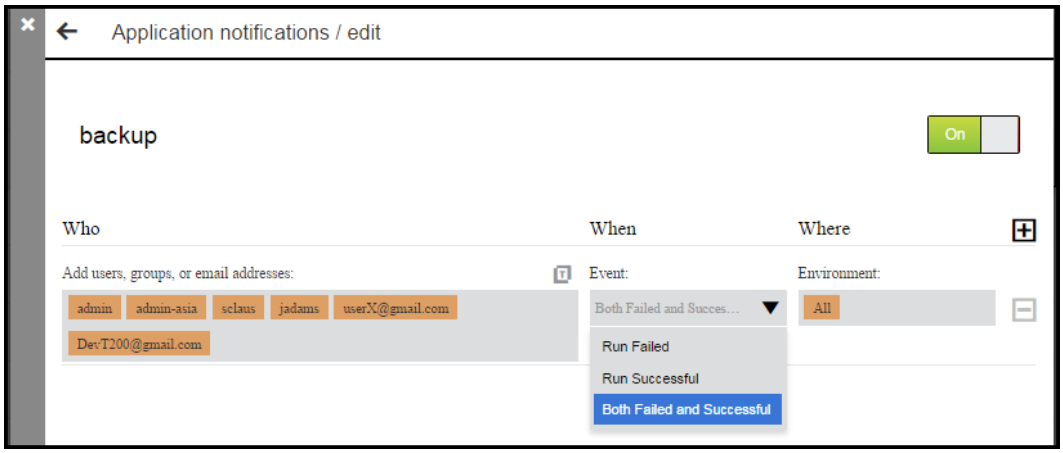
Example:



Configuring the event that triggers the notification

In the **When** field, you select the event that triggers a notification to be sent to the recipients in the **Who** field. The default is **Both Failed and Successful**. Click in the **When** field to select the event for the notification.

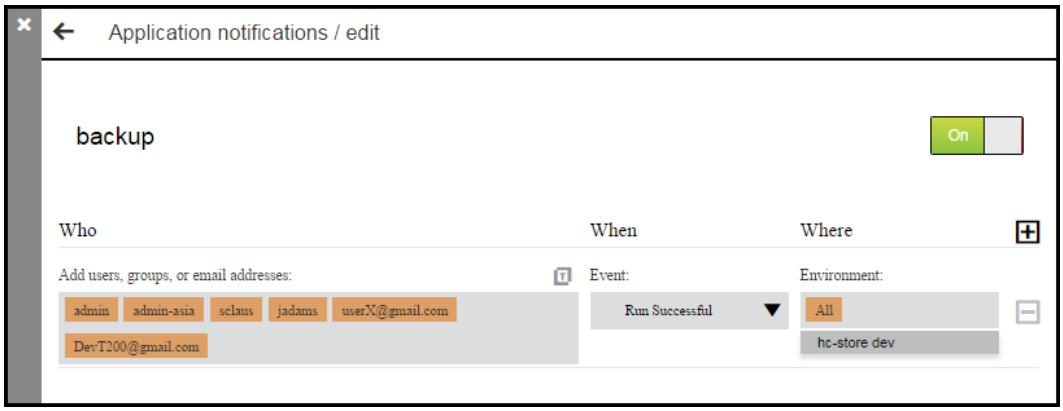
Example:



Configuring the environments where the notification applies

In the **Where** field, you select the environments to which the notifications apply. Click in the **Where** field to select the environments, which are the environments to which the application is mapped in the tier map.

Example:



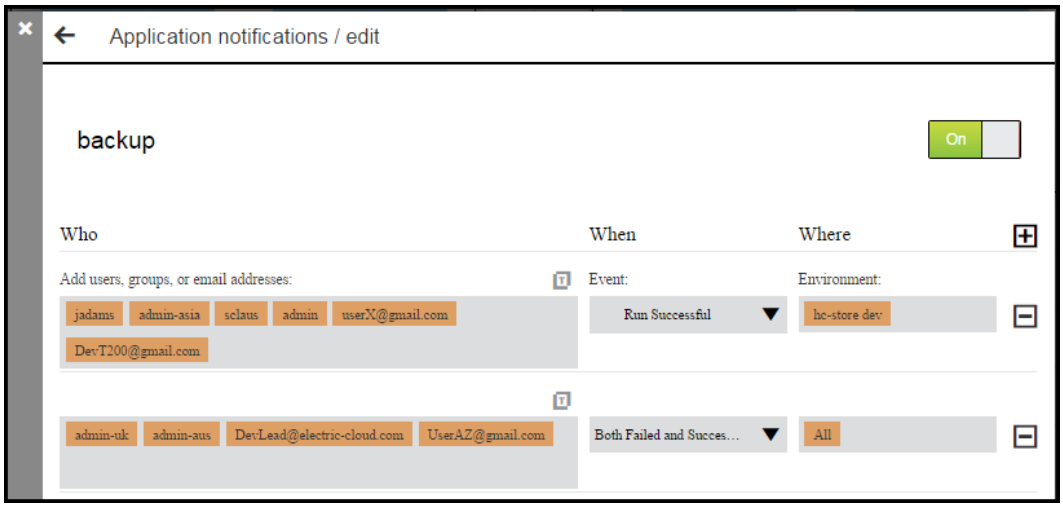
Adding More Notifications

Click the Add Notifications icon to add a new notification.

Example:

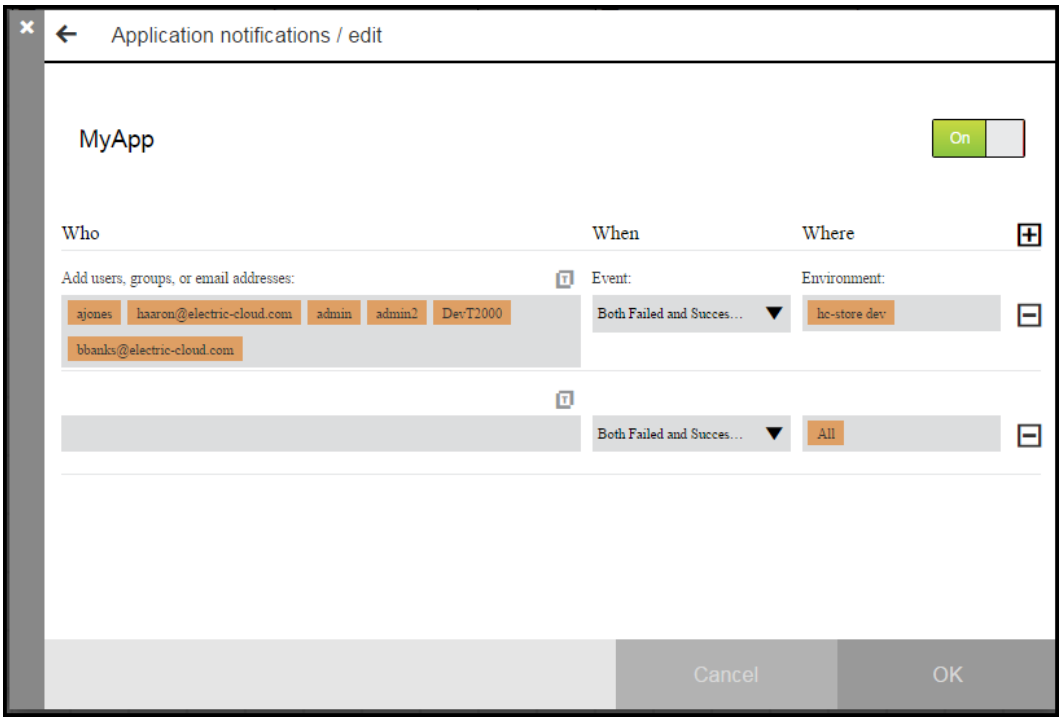
After you have added your email notifications, click **OK** to save the settings and return to the Application notifications wizard.

Example:



Deleting Notifications

Click the Delete Notification icon to delete a notification when there are more than two notifications.



Disabling Notifications

You can disable all email notifications or specific ones in the application.

- When you disable the email notifications for an application, all email notifications, including the ones for application processes and process steps, are disabled.
- You can disable the email notifications for an application process but still keep the notifications enabled for process steps in the application.

Applications

To disable email notifications for the application:

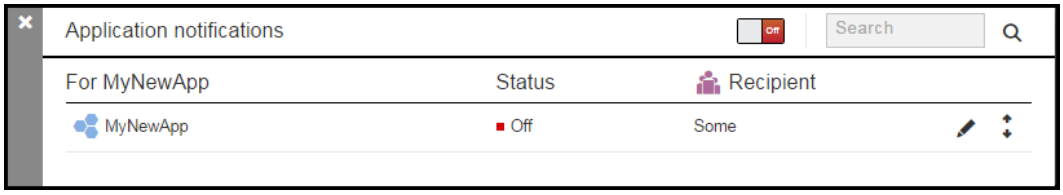
- Click the Notifications toggle in Application notifications wizard.

  The toggle and the status of the application change to **Off**.

- When you use the "Applications notification / edit" wizard:

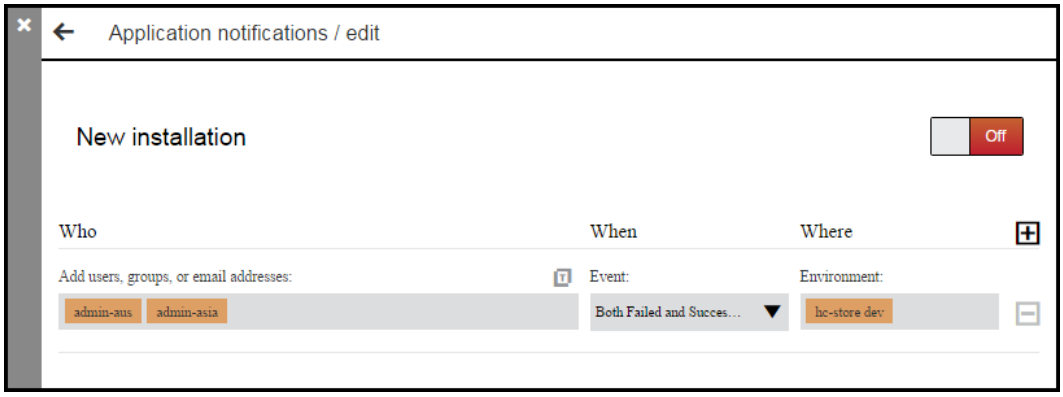
  a. Click the edit icon to open the wizard.

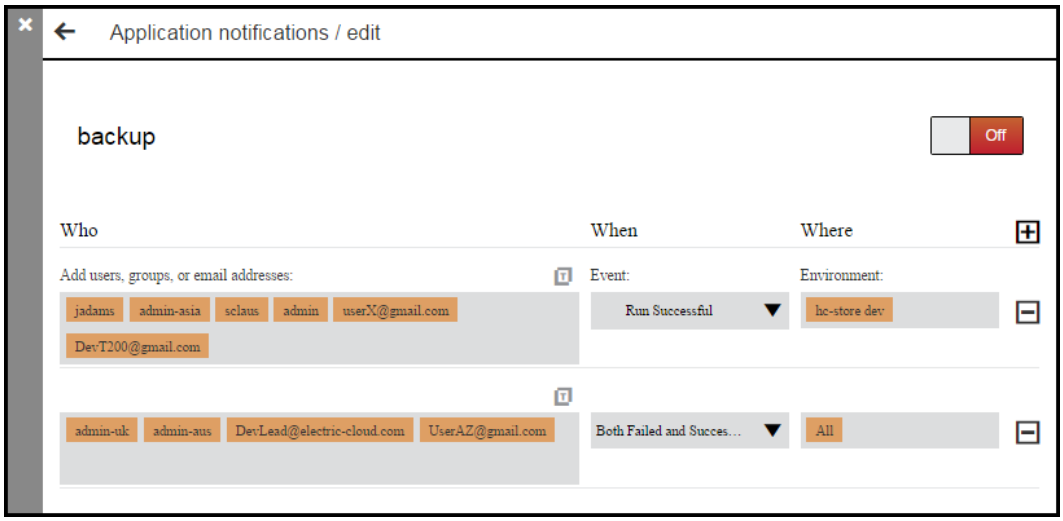
  b. Click the toggle to change it to **Off**, and then click **OK**. The Application notifications wizard opens with the updated status.



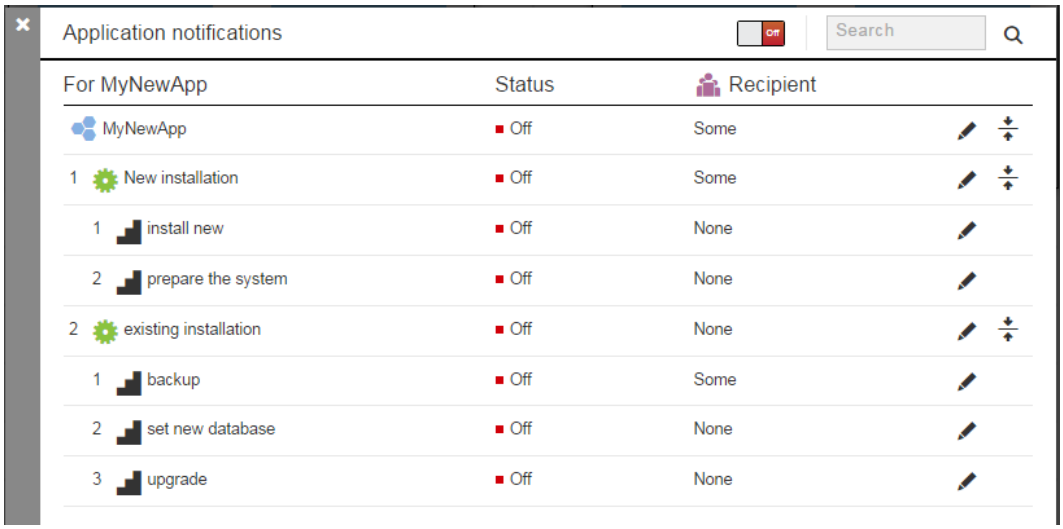
Application Processes and Process Steps

To disable notifications, click the Notifications toggle and then click **OK** in "Application notifications / edit" wizard. The toggle changes to **Off**.





The Application notifications wizard now shows that email notifications are disabled for the application, its application processes, and process steps.



Related information:

- Setting Email Notifications
- Selecting and Editing Email Messages

Different Ways to Run Applications

How to get here: From the Applications List page, select an application and click the "Run process" icon for that application. The wizard to set the parameters for running the application opens.

In the wizard, smart deploy is enabled. By default, smart deploy is enabled.

Note: If this is the first time that you are running the application, smart deploy is not enabled.

These examples show how to set the parameters for:

- Smart deploy

  The system runs the application only with artifacts that have not been deployed to a resource or selected versions of the artifact have not been deployed to new resources since a previous run.

- Full run

  The system runs the application with all the application processes, components, and artifacts in the application.

- Partial run

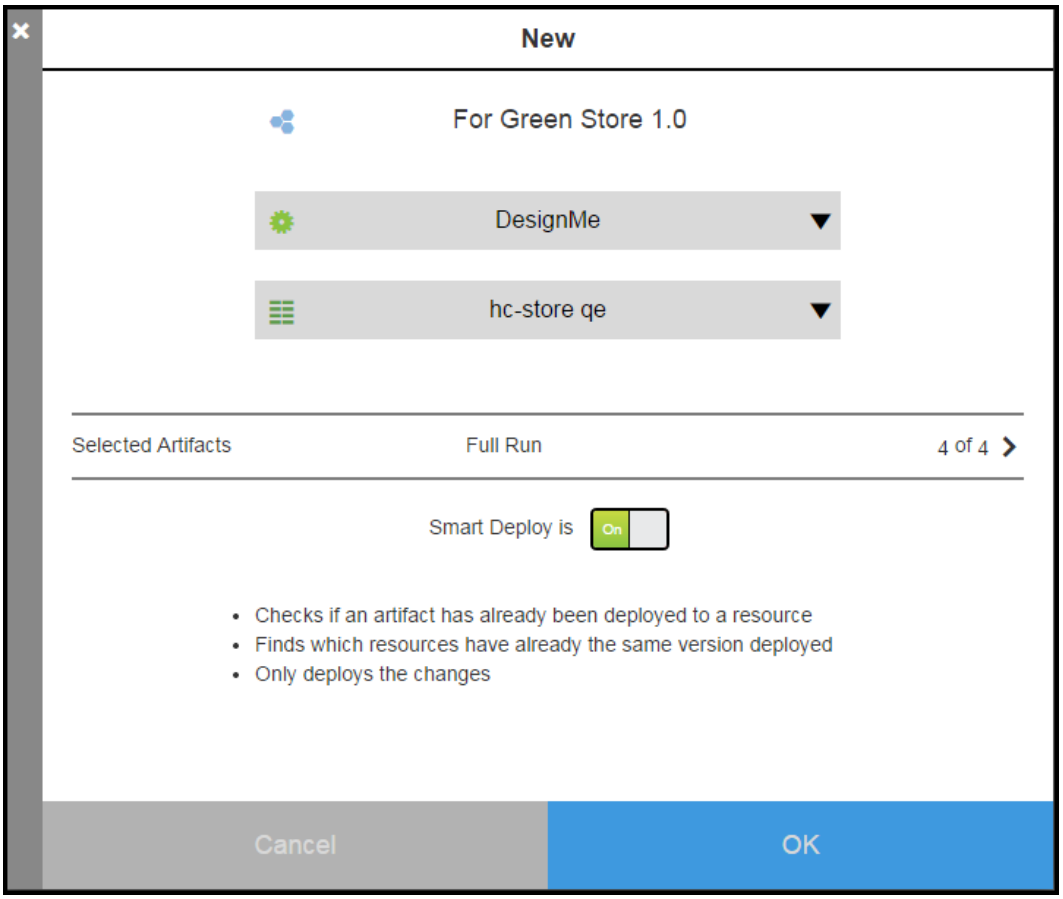
  The system runs the application with only the selected application processes, components, and artifacts in the application.

- Selecting artifacts with specific versions to run

  The system runs the application with only the selected versions of the artifacts.

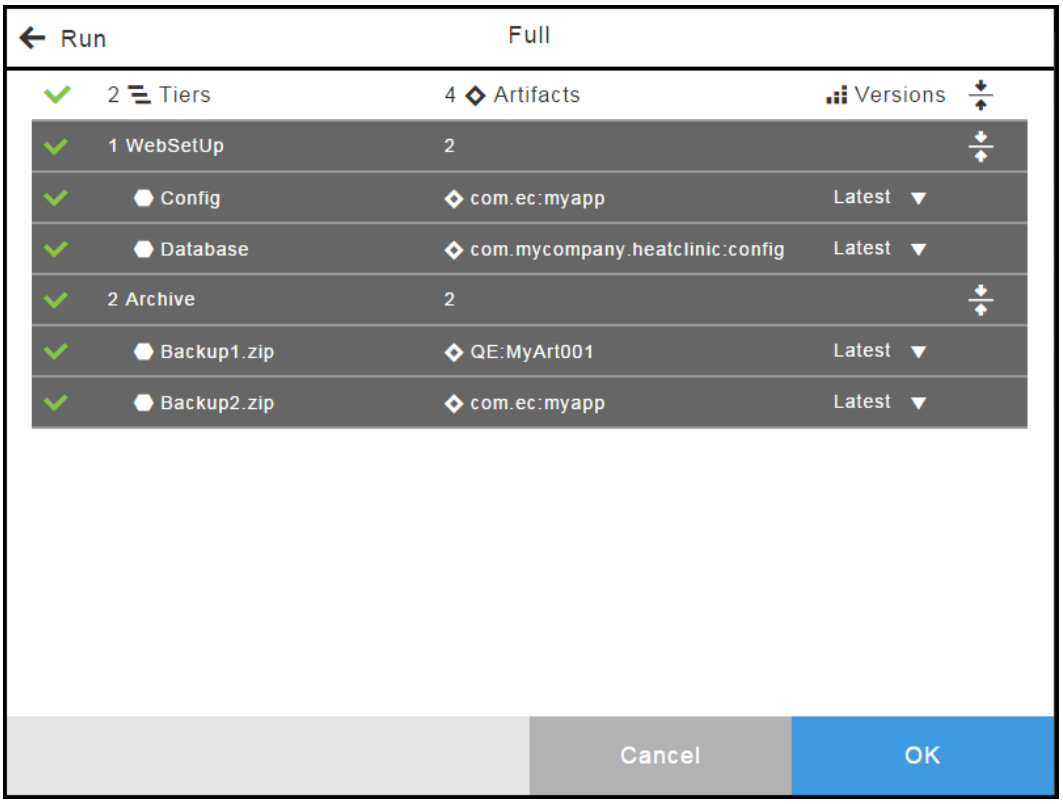
- Combinations of these ways

In this example, **Full Run** is selected. All the objects in Green Store 1.0 will be run when the application runs.



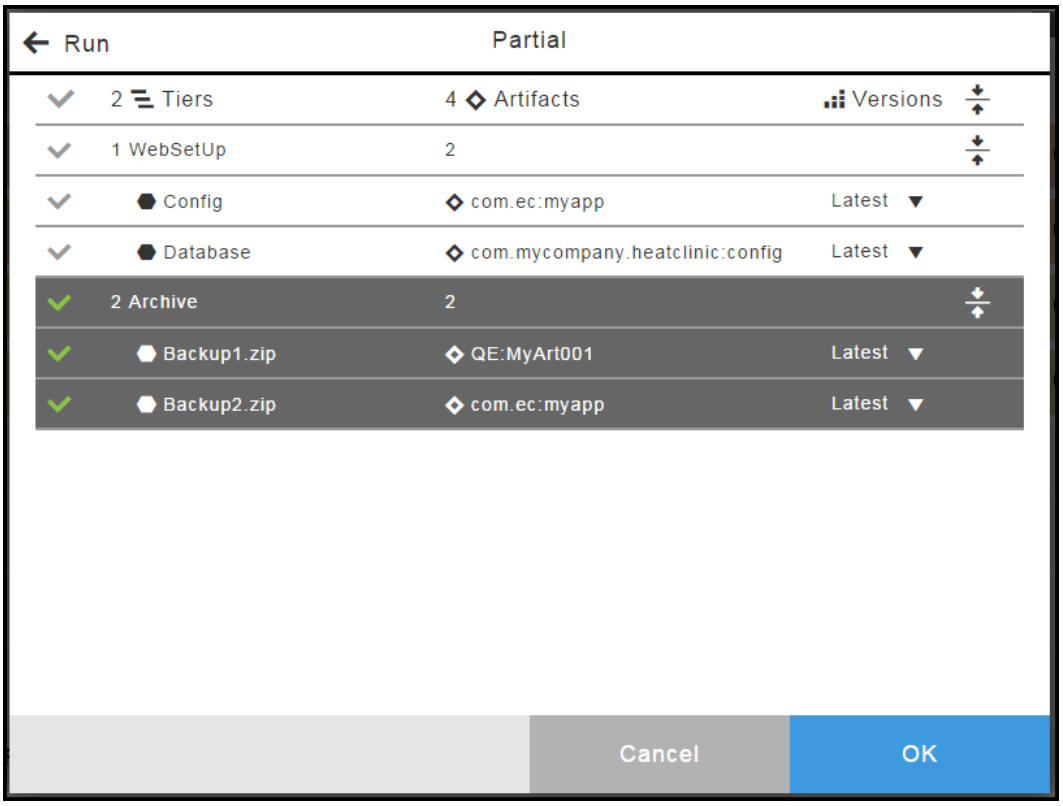
To view what objects in the application will run, click **Full Run**.

A dialog box with a list of objects in the application opens. In this dialog box, the objects that are selected with the green check mark will run.



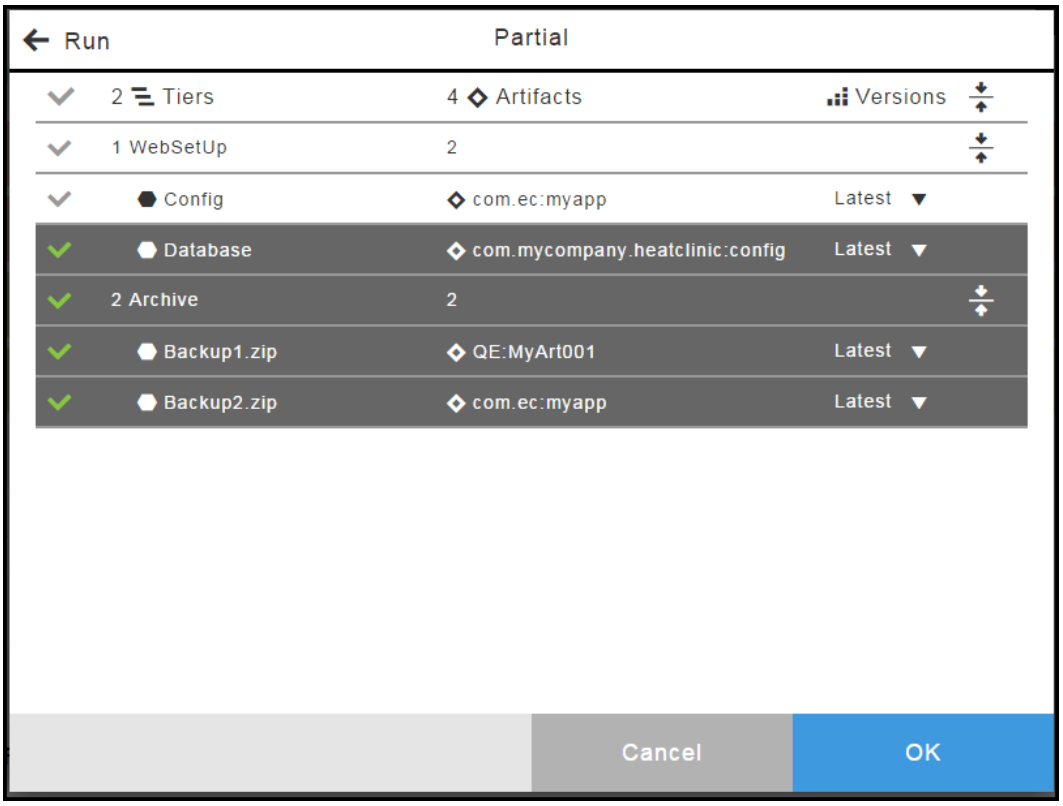
You can do a **Partial Run** to run only some of the objects. To select an object that you do not want to deploy, click in its row.

For example, if you click in the WebSetUp row, all the objects in the WebSetUp tier are removed from the next run.



You can add specific objects to the run by selecting them.

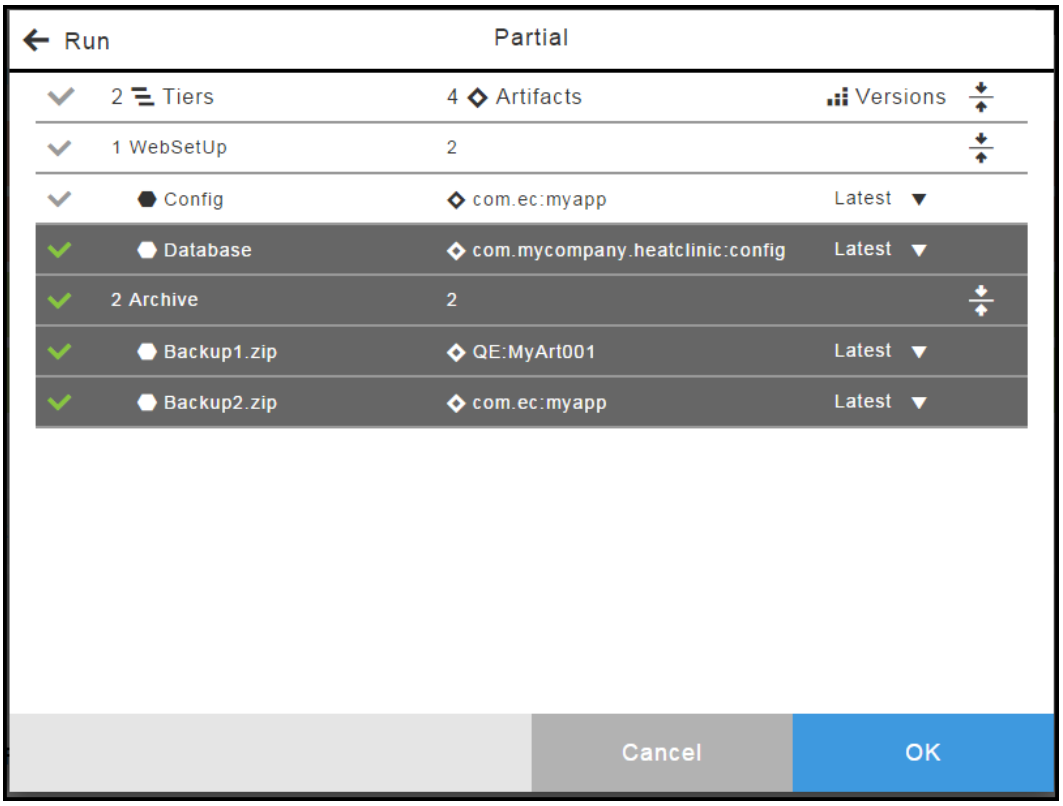
When you click in the row for the Database component, it is added to the run while the WebSetup tier and the Config component are not.



After you click **OK**, the wizard now shows that the when the application runs, it is a *Partial Run* and that *3 of 4* artifacts in the application will run.

You can also select specific versions of artifacts. To select the artifact versions, click **Selected Artifacts** in the wizard.

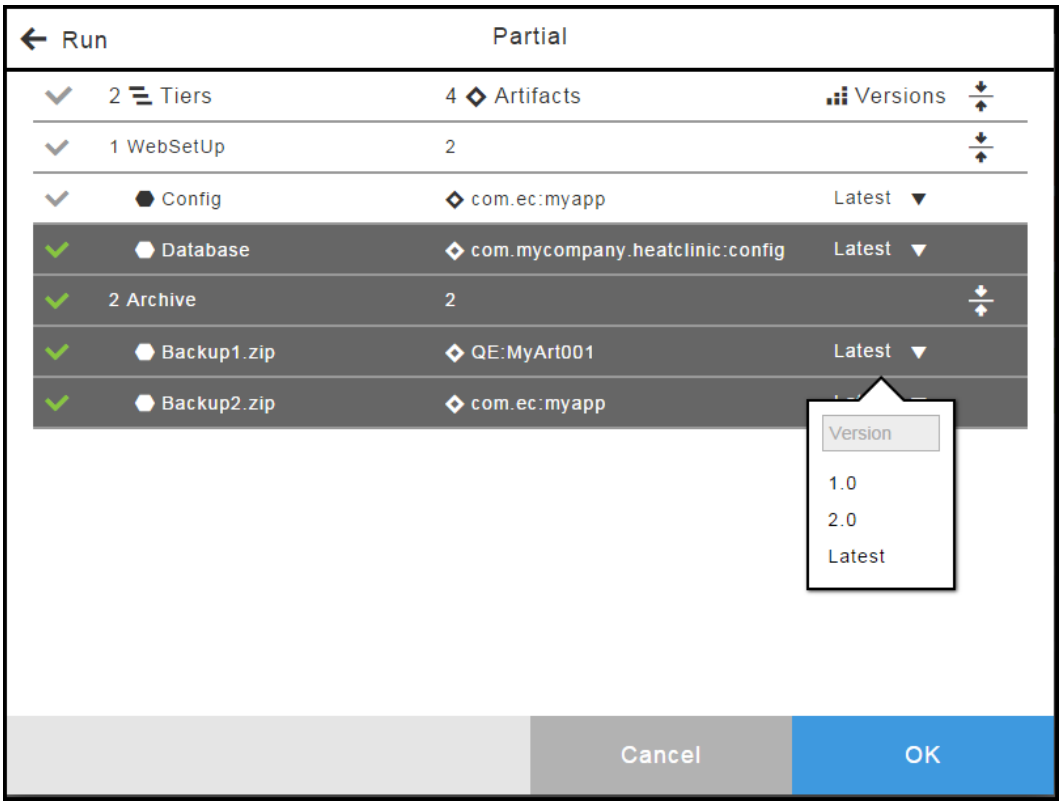
The dialog box opens.



The version of each artifact is in the Version column. The current version is *Latest*.

To see the actual version, click the down arrow next to the current version. A drop-down menu appears.

For the Backup1.zip component, the possible versions are in the drop-down list. The latest version is Version 2.0.



Click **OK** to save these settings and return to the wizard.

You can use these combinations to run an application:

	Smart Deploy	Full Run	Partial Run	Artifacts with Specific Versions
Smart Deploy		No	Yes	Yes
Full Run	No		No	Yes
Partial Run	Yes	No		Yes
Artifacts with Specific Versions	Yes	Yes	Yes	

Related information:

- Running Applications
- Running Applications with New Parameters
- Running Applications with Parameters from Previous Runs
- Running Applications with Schedules

Inventory Tracking

Electric Flow uses inventory tracking to track what is built, tested, and deployed in your continuous delivery solution, such as artifacts, resources on which the applications are run, and environments to which the resources are assigned.

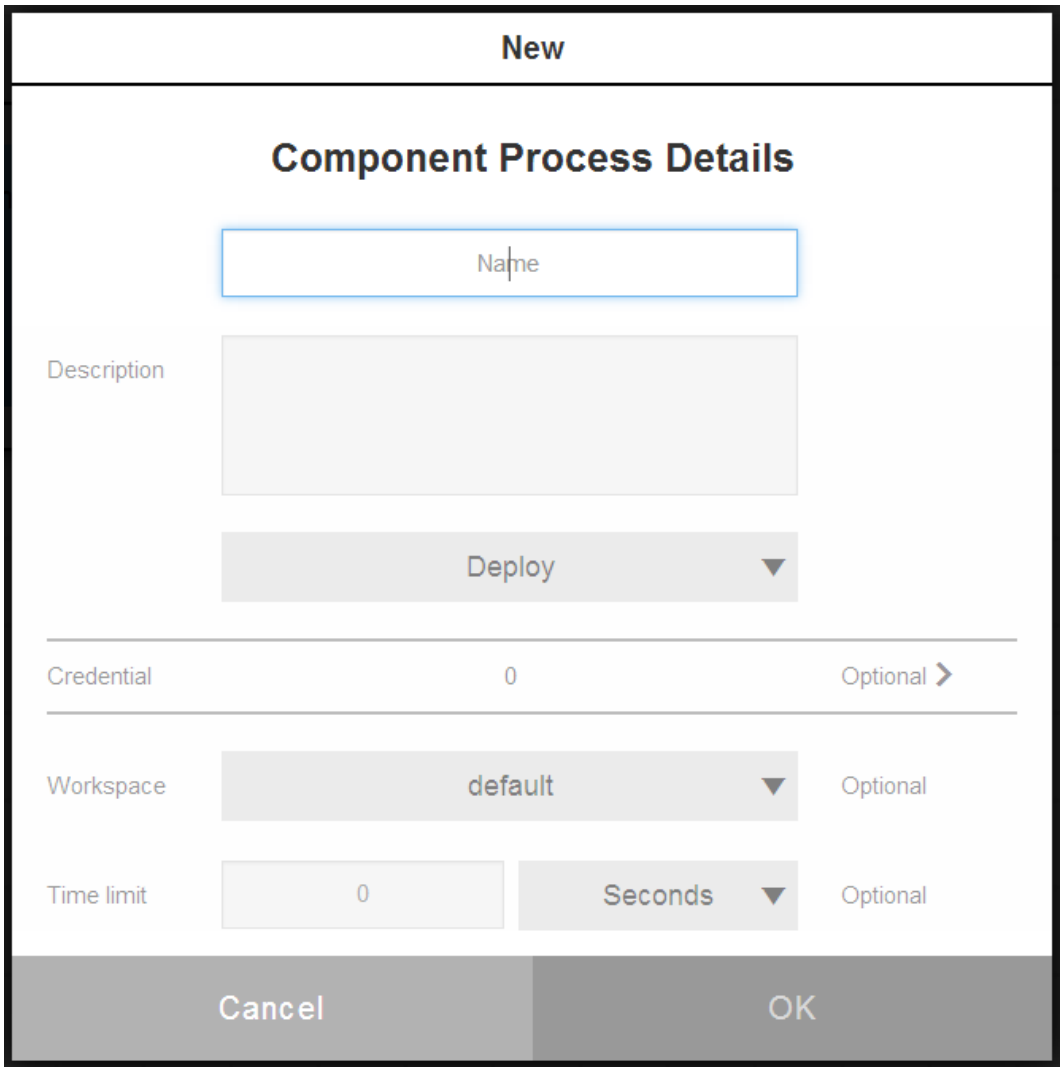
If there is an issue in an application in operations, you can find the details about what was deployed with inventory tracking.

Tracking at the Component Process Level

Inventory tracking occurs at the component process level.

You design the component process as one of the following process types in the Component Process Details dialog box:

- **Deploy**–Enables inventory tracking. The ElectricCommander server tracks artifacts deployed to environments. This is the default.
- **Undeploy**–After the first successful job step in a component process with this setting, the ElectricCommander platform removes the environment inventory record.
- **Other**–Disables inventory tracking.



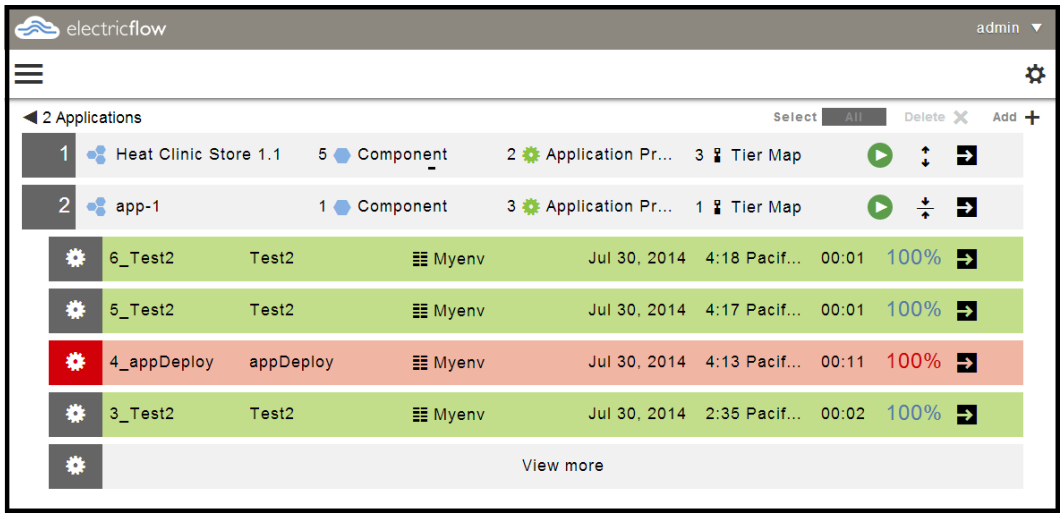
Application Inventory Tracking

How to get here:

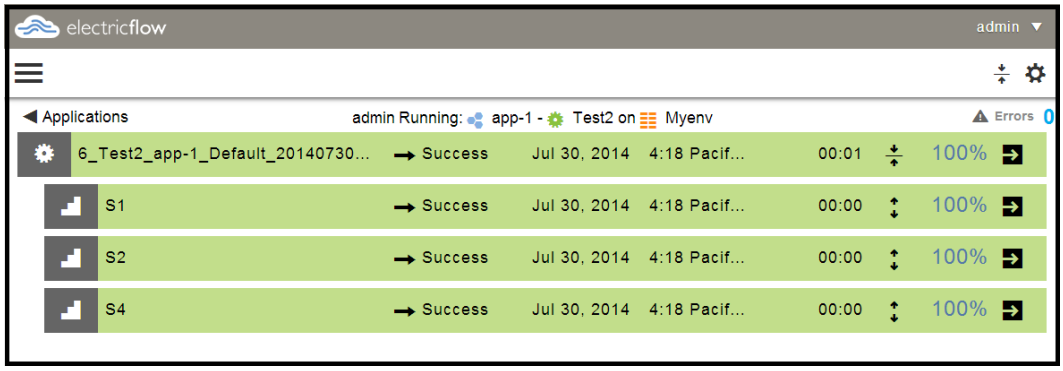
- From the Home page, click the **Applications** launch pad.
- From the main menu on the Home page, click the **Applications** destination.

When you run an application, the Applications List shows the status.

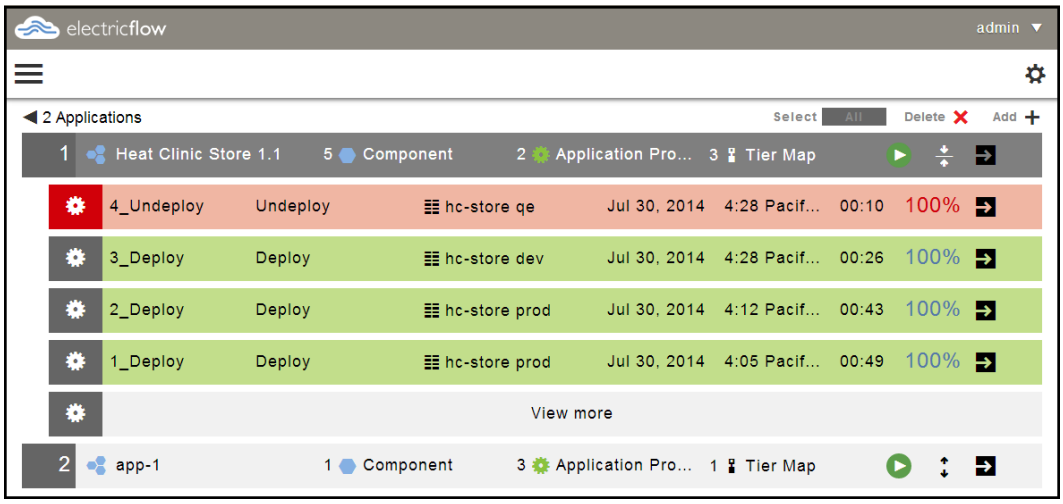
The following shows that the application called "app-1" ran successfully on July 30, 2014, at 4:18 pm.



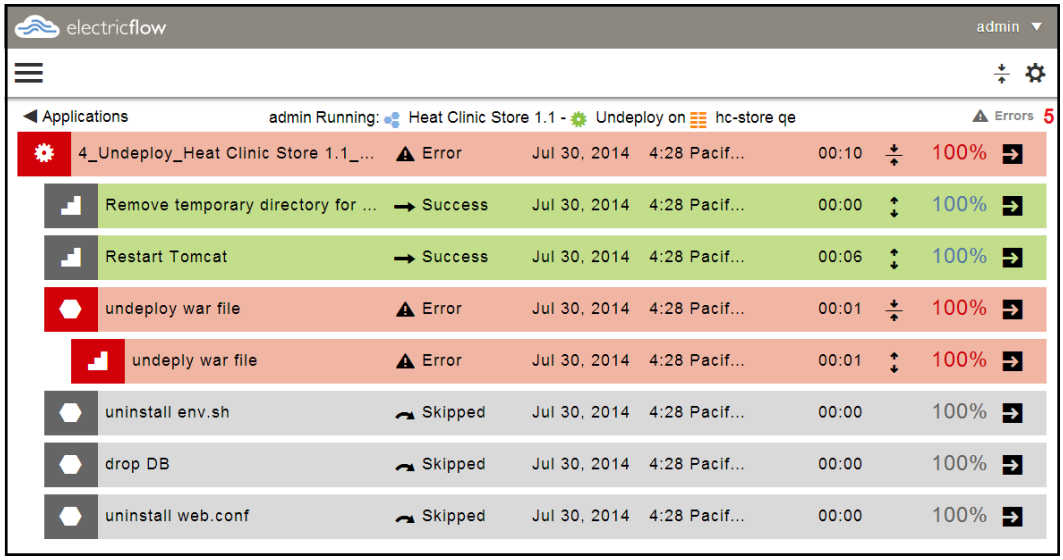
Click the right arrow in the 6_Test2 row to see the detailed results. The process has three steps, which were all successfully run.



The following shows that the application called"Heat Store Clinic 1.1" did not run successfully on July 30, 2014, at 4:28 p.m.



Click the right arrow in the 4_Undeploy row to see the detailed results. The process has two steps that ran successfully, a component called "undeploy war file" with errors, three skipped objects, and five errors.

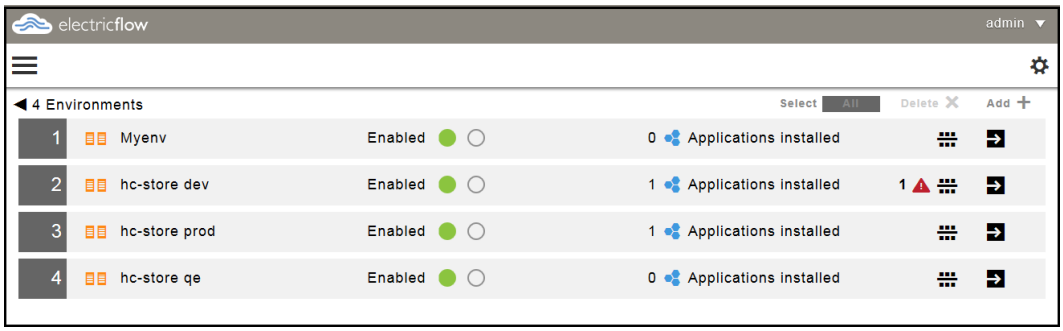


To troubleshoot the errors, you can click the right arrow in one of the "undeploy war file" rows and you will go a Job Step Detail page in the ElectricCommander platform.

Environment Inventory Tracking

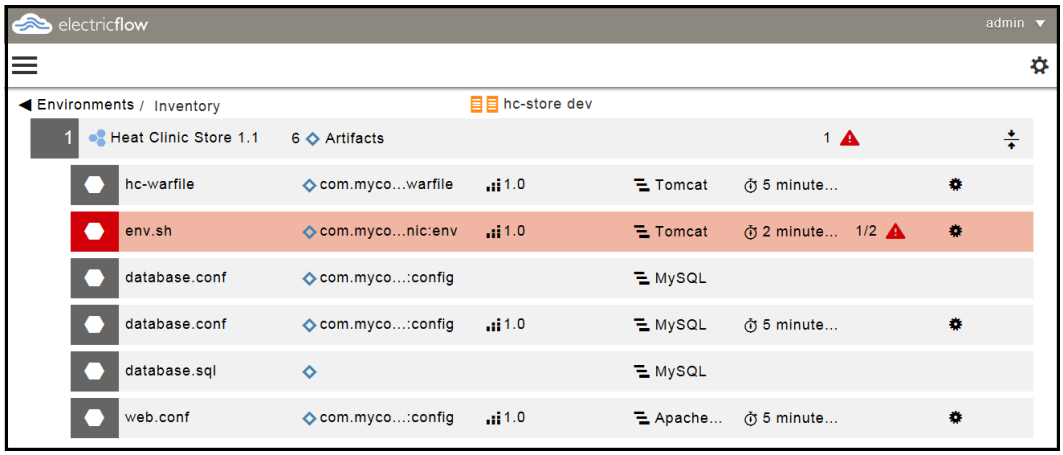
How to get here: From the Environments List, select an environment and click the Inventory icon. The Environment Inventory for that environment appears.

This Environments List shows that an application was run on the "hc-store dev" environment and has one error.

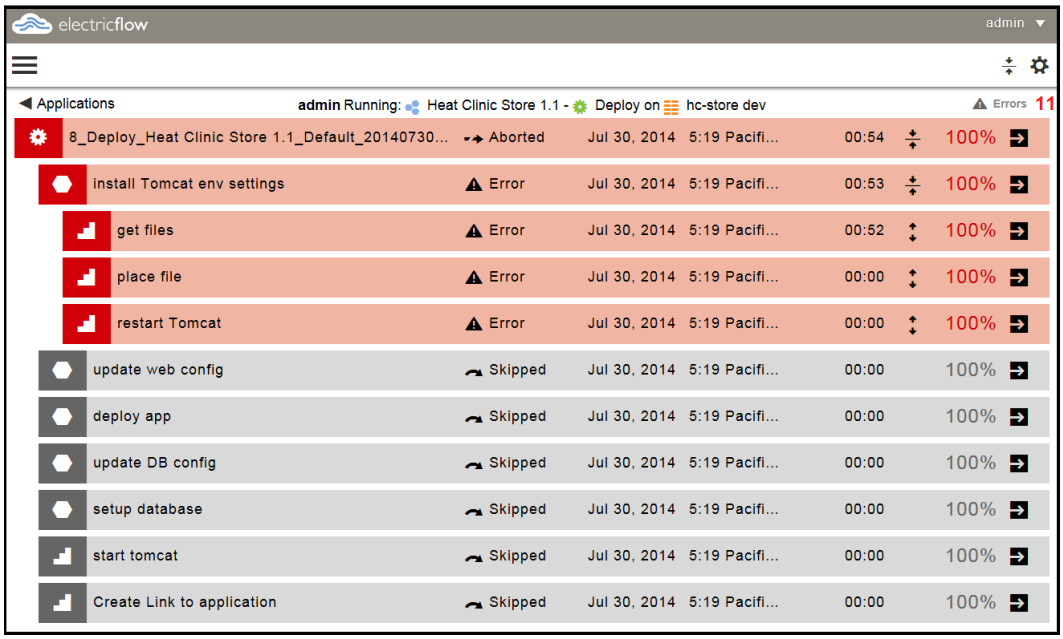


The first level of the Environment Inventory appears.

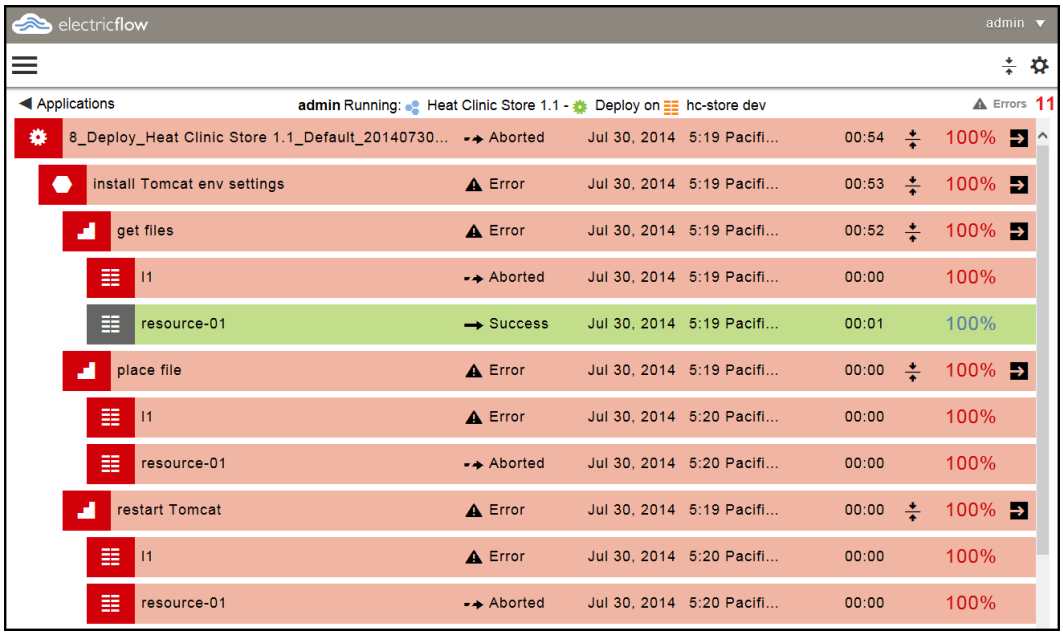
In the second level, you can view more details. Click the arrows at the end of the row.The applications mapped to this environment appear.



To show more details in the third level, click the process icon at the end of the env.sh row.



In the fourth level, you can get more information for the steps in the Install component process by clicking on the arrow at the end of the get files, place file, and restart Tomcat rows.



The Environment Inventory shows this information:

- Environment name: hc-store dev
- Name of the application mapped to this environment: Heat Clinic Store 1.1
- Components in the application: See the second level.
- Number of the artifacts associated with components: Six. For details, see the first and second levels.

- Each component has an artifact with a version number: See the second level.
- Each component is also in an application tier: See the second level.
- Time when the artifact was deployed: See the third and fourth levels.
- Error counts if there are any errors: See the third and fourth levels.
- Number of resources that are successfully assigned to applications on a per-artifact basis: See the third and fourth levels.

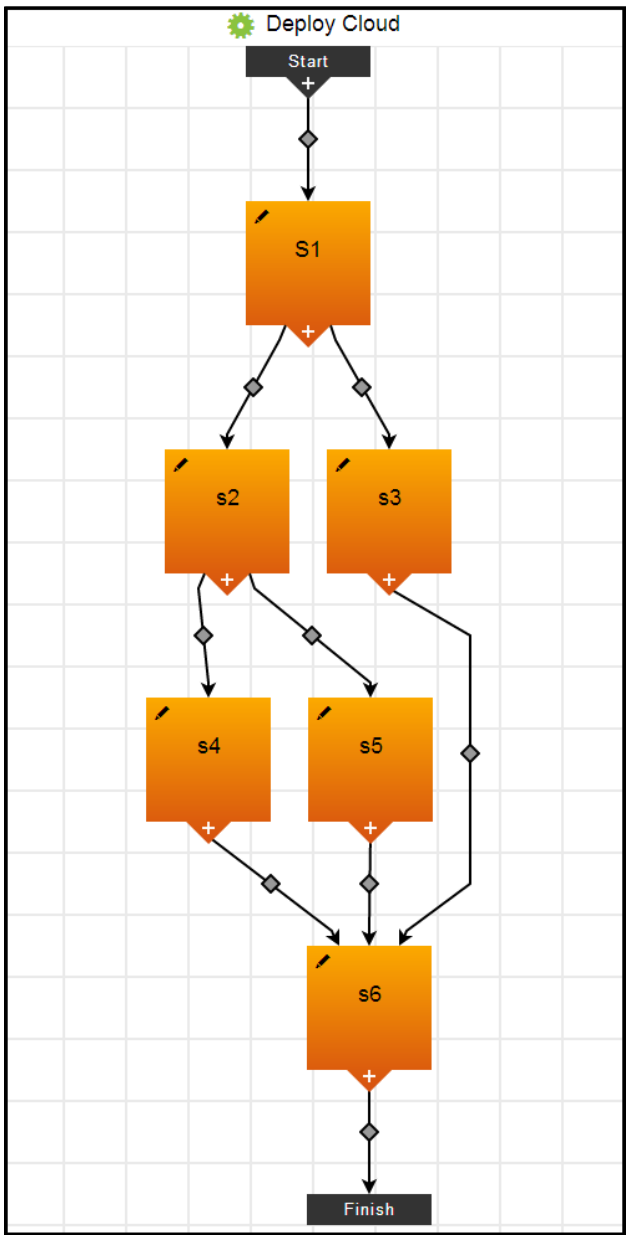
Related information:

- ElectricFlow Icons
- Home Page
- Environments List
- Viewing Results and Troubleshooting

Viewing Job Details

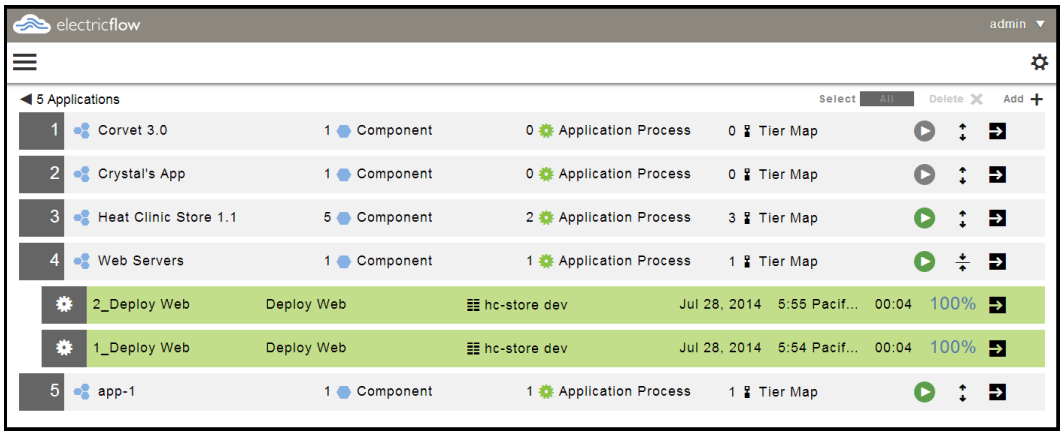
When you run a process in an application, the system records the results of the process as each step is performed. You can see a summary of the results in the Applications Inventory.

This example shows the results of running the Deploy Web application process, which consists of the Deploy Cloud component process.

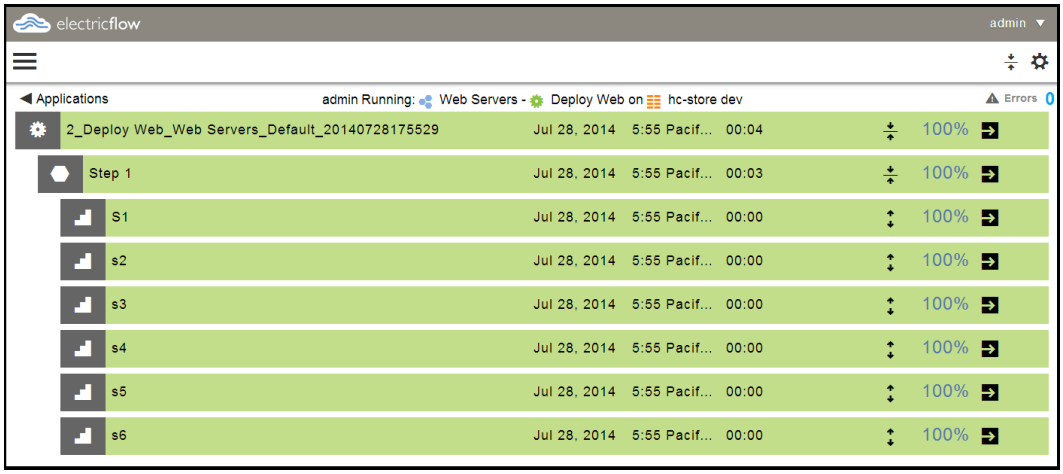


When you run the Deploy Web process, you can see the status of the process as it runs in the Application Inventory.

You can also see which application processes were run, with the latest process appearing first.



To see more details about the process, click the process about which you want more information. If you want to learn more about the 2_Deploy Web process, click **2_Deploy Web** in the Applications Inventory. It now shows the details for the process that you selected.



Notice the order of the process steps in the Applications Inventory. The order is not based on the branches in the process. Instead, the system lists the steps based on their level in the process.

- Step S1 is the first step in the process and is listed first. There are no other steps at this level so the next step is in the level following S1.
- The next step in the list is s2.
- Step s3 is on the same level as s2. There are no other steps at this level so the next step is in the level after this.
- The next step is s4.
- Step s5 is on the same level as s4. There are no other steps at this level so the next step is in the level after this.
- The last step is s6.

Related information:

- ElectricFlow Icons
- Home Page
- Environments List

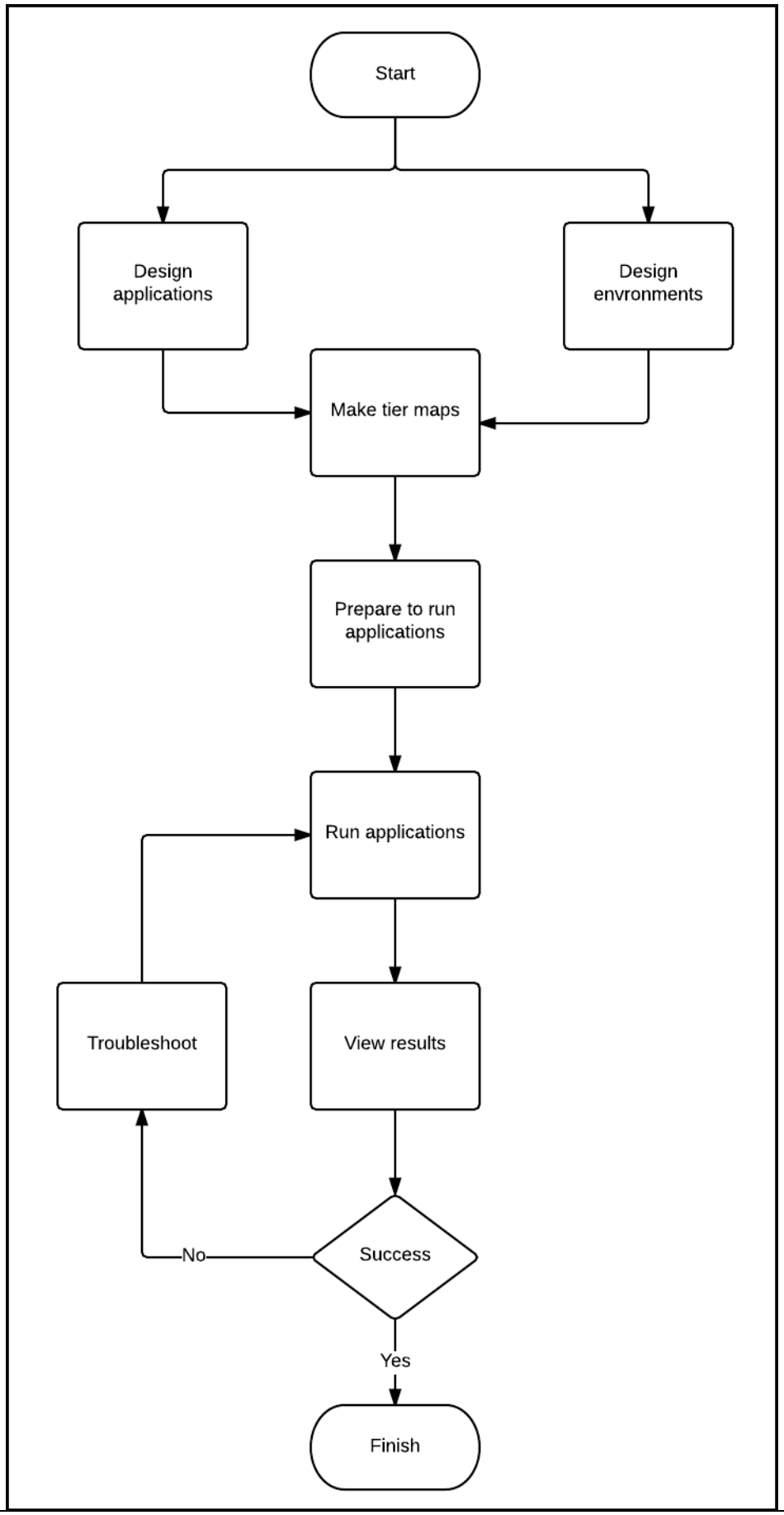
Designing and Running Applications

Thissection describes how to design an application, run it, and view and troubleshoot the results. To design the application, you design the application and environment and then map the application to an environment in a tier map.

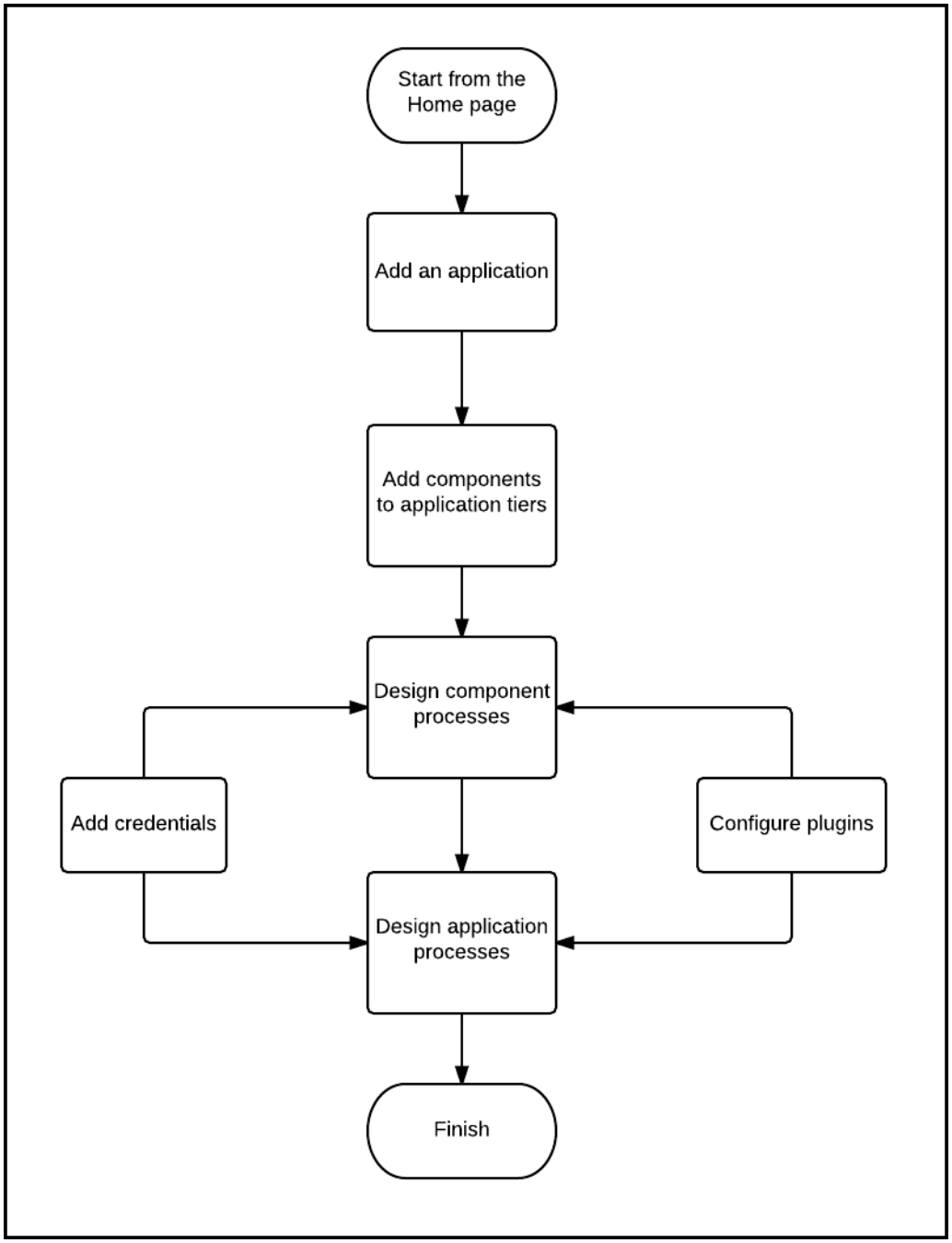
The following tasks describe how to design and run applications at a high level.

1. Designing Applications
2. Designing Environments
3. Making Tier Maps
4. Preparing to Run Applications
5. Running Applications
6. Viewing Results and Troubleshooting

For information about the UI, see the ElectricFlow User Interfaces topics.


Start
Design applications
Design envronments
Make tier maps
Prepare to run applications
Run applications
Troubleshoot
View results
No
Success
Yes
Finish

Designing Applications



1. Add an application.
2. Add components to the application tiers.

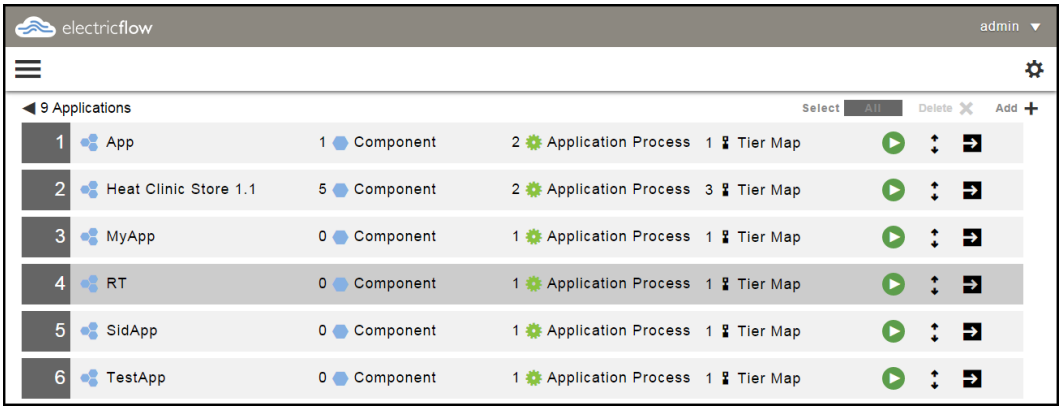
3. Design component processes.
4. Design application processes.

Adding an Application

Starting from the Home page:

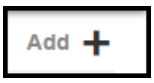
1. Go to the Applications List.

   Example:

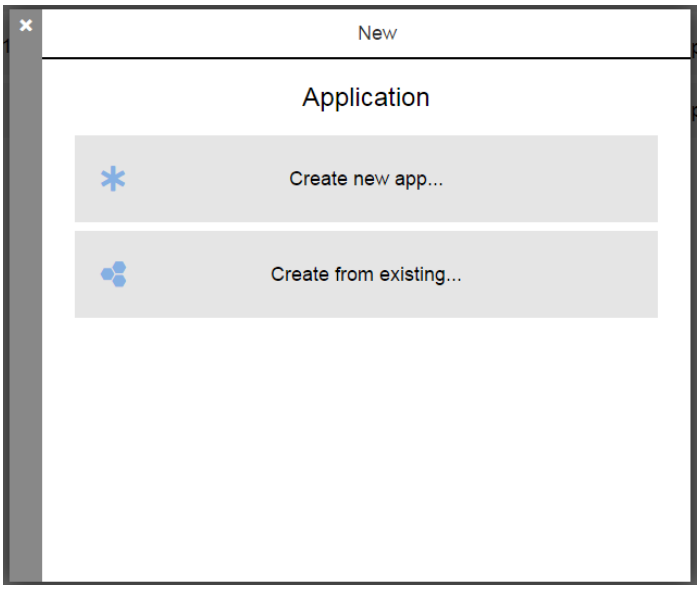


2. Click the "Add new application" icon in the upper right corner.

   Example:



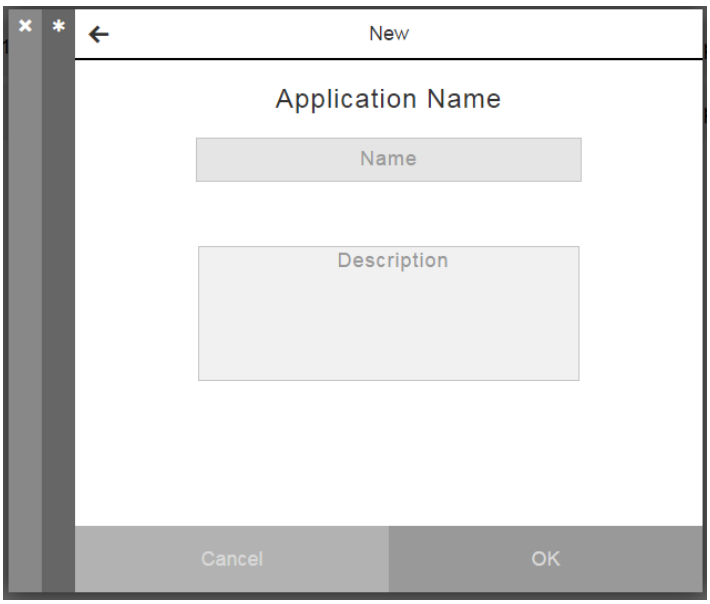
   The New Application wizard appears.



3. Click **Create new app** or **Create from existing**, and go to the appropriate next step.

4. Click **Create new** to add a new application.

   The New Application Name wizard opens.

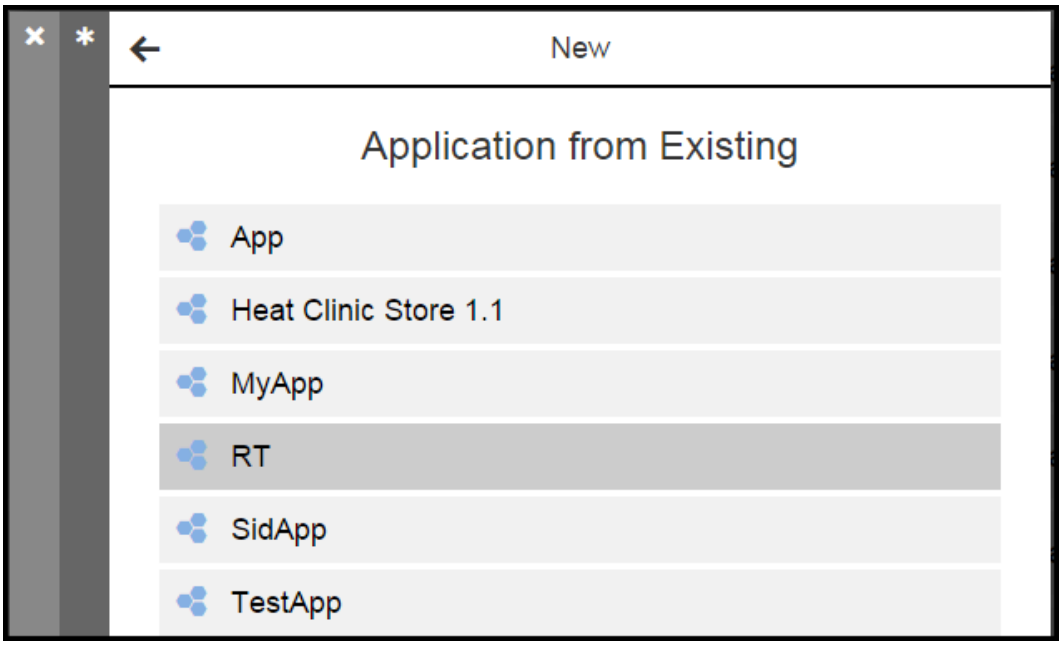


   a. Enter a name in the Name field.
   b. (Optional) Enter a description of the application in the Description field.
   c. Click **OK**.

5. Click **Create from existing** to add an application based on an existing one.

   This application has the same objects (components, artifacts, and application processes) as the existing application. However, it is not an exact copy of it because you need to configure new tier maps.

   The New Application from Existing wizard opens.

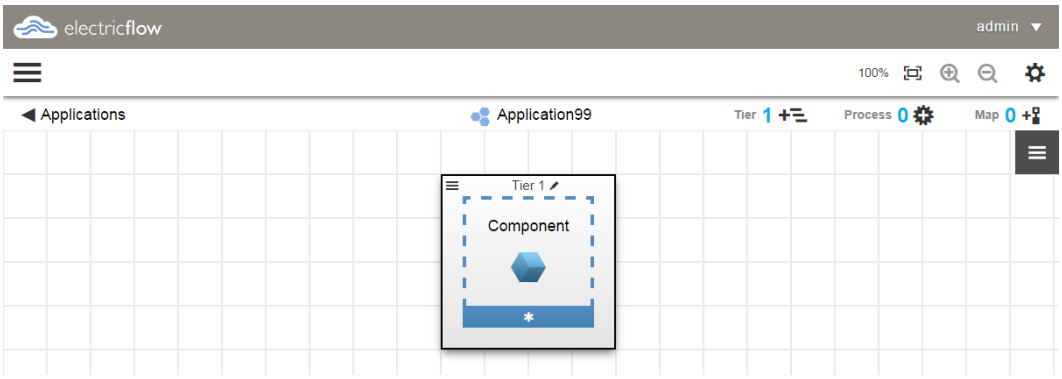


   a. Select an application. The New Application Name wizard opens with the name of the application you selected in the Name field.
   b. Enter a name in the Name field. It must not match the name of another application in the project.
   c. (Optional) Enter a description of the application in the Description field.
   d. Click **OK**.

Adding Components to the Application Tiers

If you are designing a new application, the Applications Designer has an application tier called Tier 1 with one component called Component.

Example:

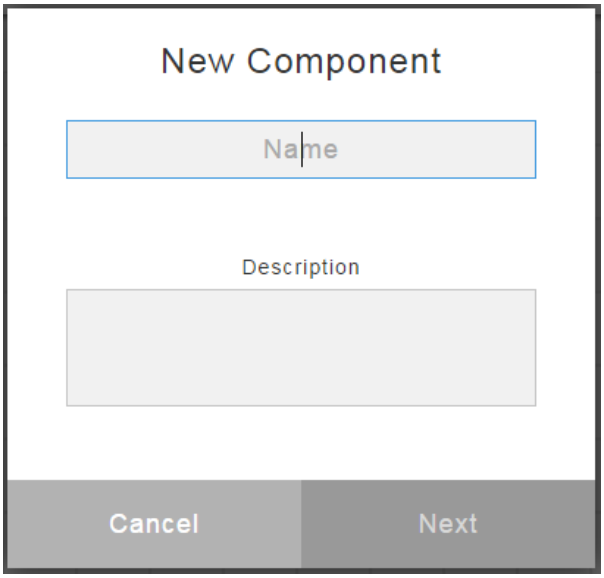


Starting in the Applications Designer:

1. Click the star icon (*) in the component in the application tier.

   The New Component dialog box opens.

   Example:

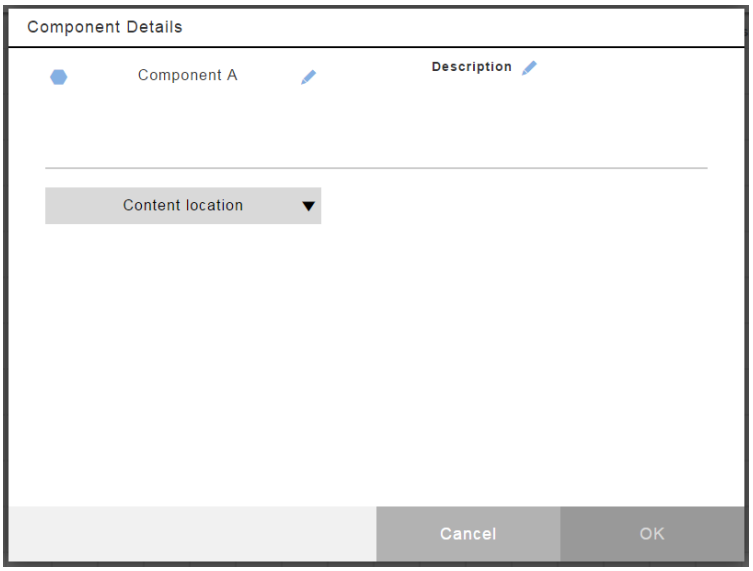


2. Enter a name in the Name field.
3. (Optional) Enter a description of the component in the Description field.

4. Click **Next**.

   The Component Details page opens.

   Example:

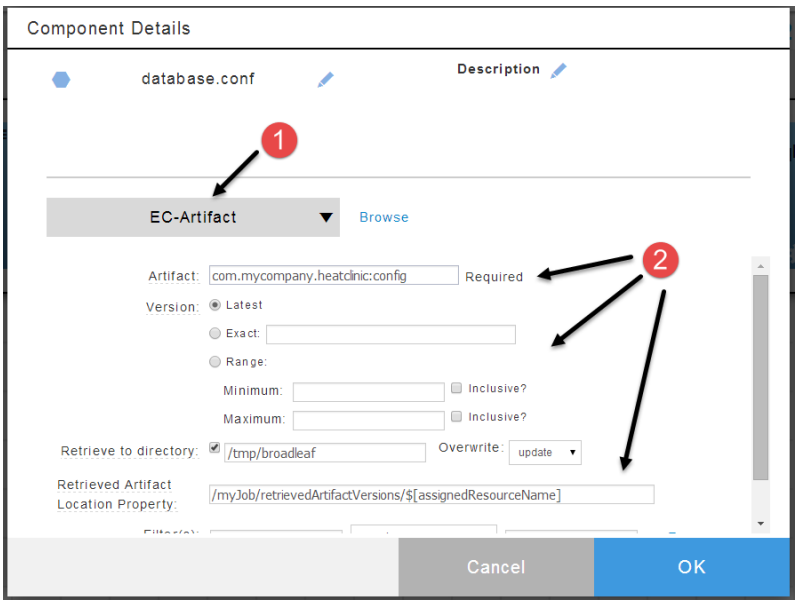


5. Click the **Current Location** field. The list of available artifacts appears.
6. Select an artifact type.

   The information needed to define the artifact appears below.

7. Enter the appropriate information in the fields.

   Example:

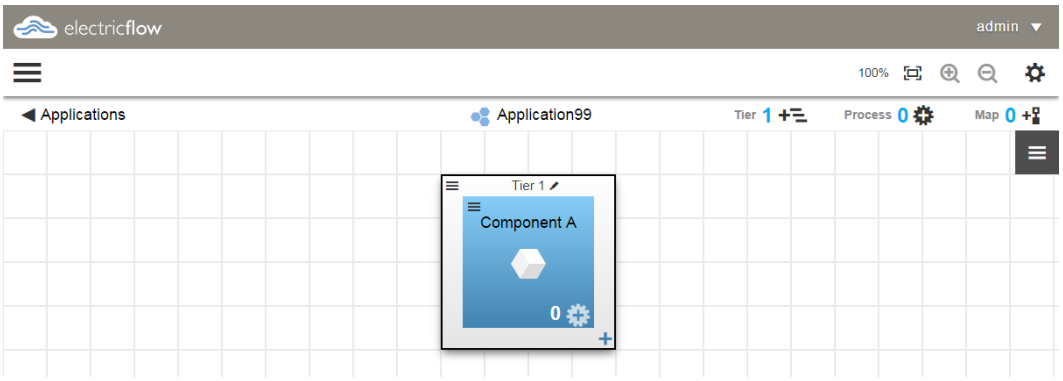


1	Content Location of the component
2	Component details that vary depending on the Content Location

8. Click **OK**.

   The Applications Designer appears again and shows that there is a component with the name you specified in the application tier.

   Example:



9. To add a component to the same tier, click the plus sign in the lower right corner of the tier.

   A new undefined component appears in the tier.

10. Configure this component the same way you did the first one.

Designing Component Processes

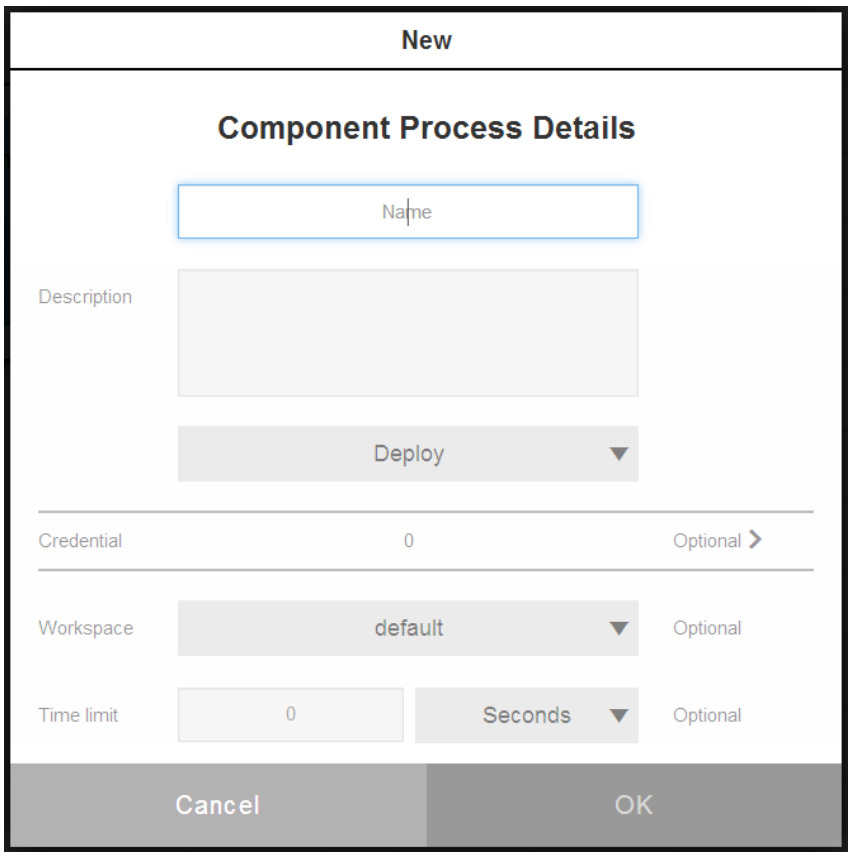
Starting in the Applications Designer:

1. Click the "Add component process" icon in the lower right corner of the component.

   The Component Process Details dialog box opens.

2. Enter information about the component process in the Component Process Details dialog box.

   Example:



Field	Description and How to Set It
Name	Name of the process step
Description	Description of the process step

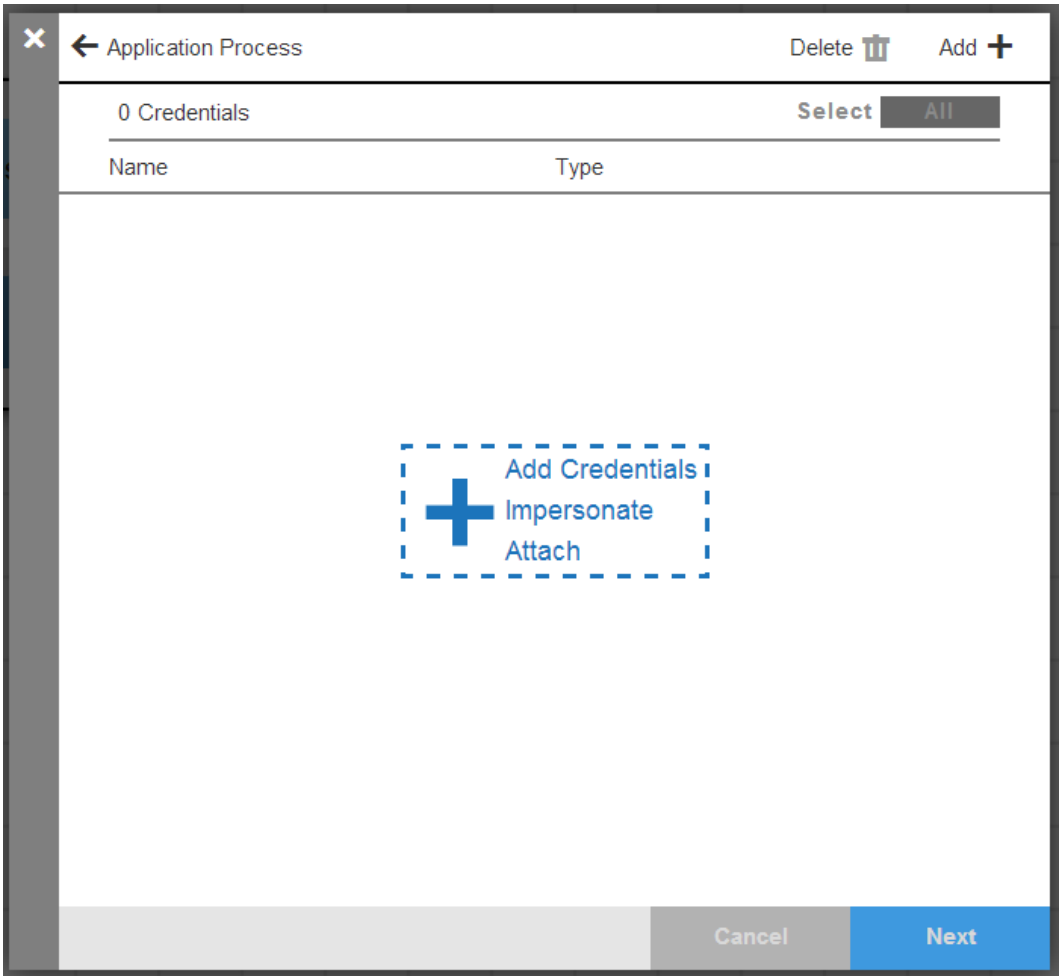
Field	Description and How to Set It
Process Type	Type of process. The default is **Deploy**. To set the process type: 1. Click the **Type** field to select the process type. 2. Select one of these options: **Deploy**–Enables inventory tracking. The ElectricCommander server tracks the artifacts deployed to environments. **Undeploy**–The next time that the process is run, the ElectricCommander server removes information about the artifacts deployed to environments. **Other**–Disables inventory tracking.
Credential	An object consisting of a user name and password that ElectricFlow uses to run a process step. The dialog box displays the number of credentials for the process step, which are the same credentials that you use with procedures, steps, and schedules in the ElectricCommander platform. You can only impersonate one credential. To set the process type, see Adding Credentials.
Workspace	Area in the disk space where the files and results of the job step are stored. To set the workspace, click the **Workspace** field to open a drop-down list of workspaces in the ElectricCloud platform and select a workspace. For more information about workspaces, go to the ElectricCommander Help > Workspaces and Disk Management. To set the workspace, click Workspace to open a drop-down list of workspaces in the ElectricCloud platform. Select a workspace, and click OK.
Time limit	Maximum length of time that the step is allowed to run. After the time specified, the step is aborted, To set the time limit, enter the time and select the unit of time: seconds, minutes, or hours. For information about time limits for procedure job steps in the ElectricCommander platform, go to the ElectricCommander Help > API Commands.

3. (Optional) If you need to add credentials, do the following:

   IMPORTANT:
   When you impersonate a credential, make sure that the impersonated user has the absolute path to the bin directories in the $PATH environment.
   If you define a process step with a command, you must enter the absolute path in the **Post Processor** and **Shell** fields in the Define Step dialog box.

   1. Click in the Add Credentials field.

      Example:



   2. To impersonate one credential, select **Impersonate** in the Type field.
   3. Click the **Select Credential** field to open a drop-down list of credentials for the process step.
   4. Select a credential.

5. Click **OK**.

   The Credentials dialog box now shows the one credential for impersonation.

6. To attach one or more credential to the process step, select **Attach** in the Type field.
7. Click the **Select Credential** field to open a drop-down list of credentials for the process step.
8. Select a credential.
9. Click **OK**.

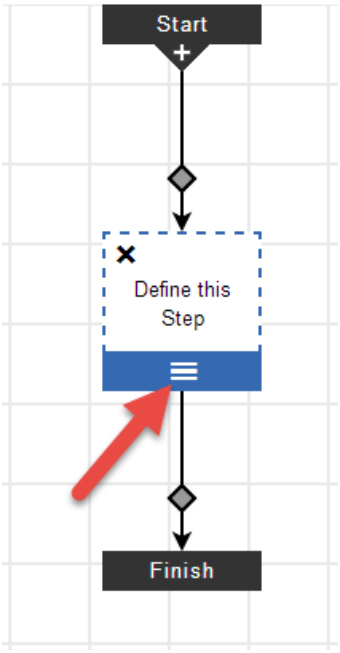
   The Credentials dialog box now shows the attached credentials.

4. Click **OK**.

   The Component Process Designer opens.

5. In the new process step, click the menu icon below "Define this Step" to define it.

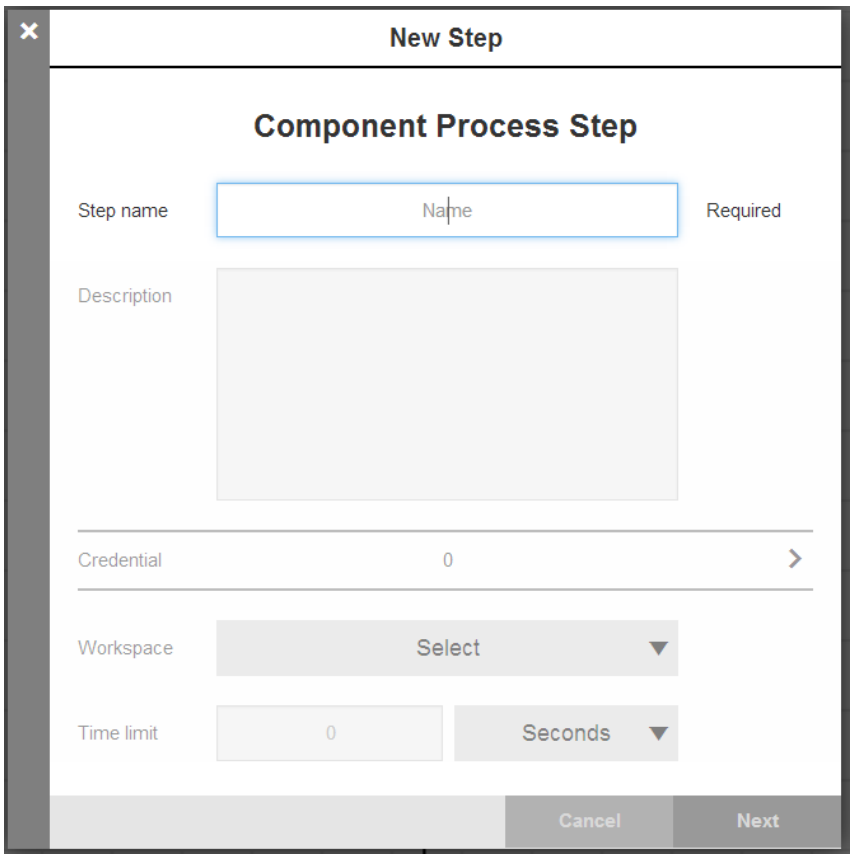
   Example:



   The Component Process Step dialog box opens.

6. Enter information about the step in the dialog box.

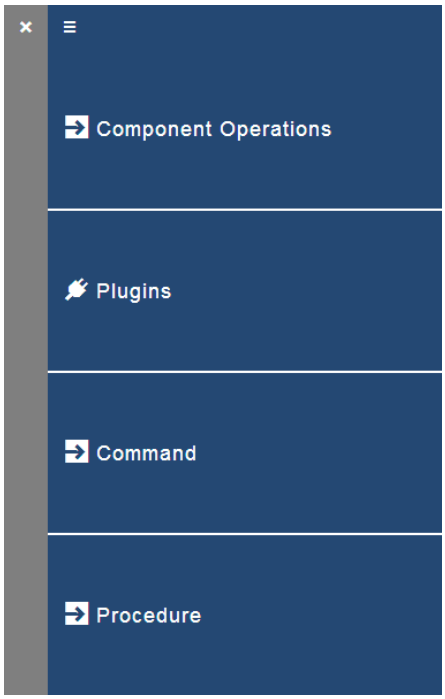
   Example:



7. Click **Next**.

   The Process Step wizard opens.

   Example:



8. To define the step, enter information in the wizards that follow.

   When you are done, the defined step now appears in the process in the Component Process Designer.

9. Define more steps in the process.

   For more details, see these sections: Defining Process Steps, Adding Credentials, and Configuring Process Branching.

   You can also drag and drop a step into the process. See the "Using the Drag and Drop Method to Add Process Steps" section. .

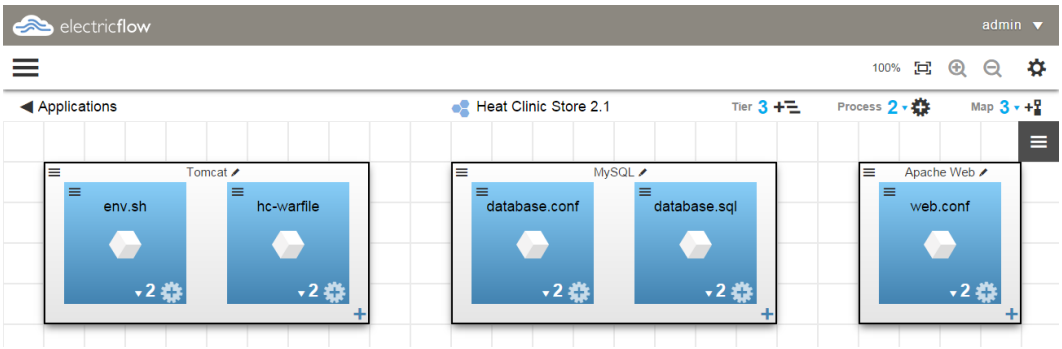
Designing Application Processes

Starting in the Applications Designer:

1. Click the "Add application process" icon in the upper right corner to add an application.

   Example:

   Example:

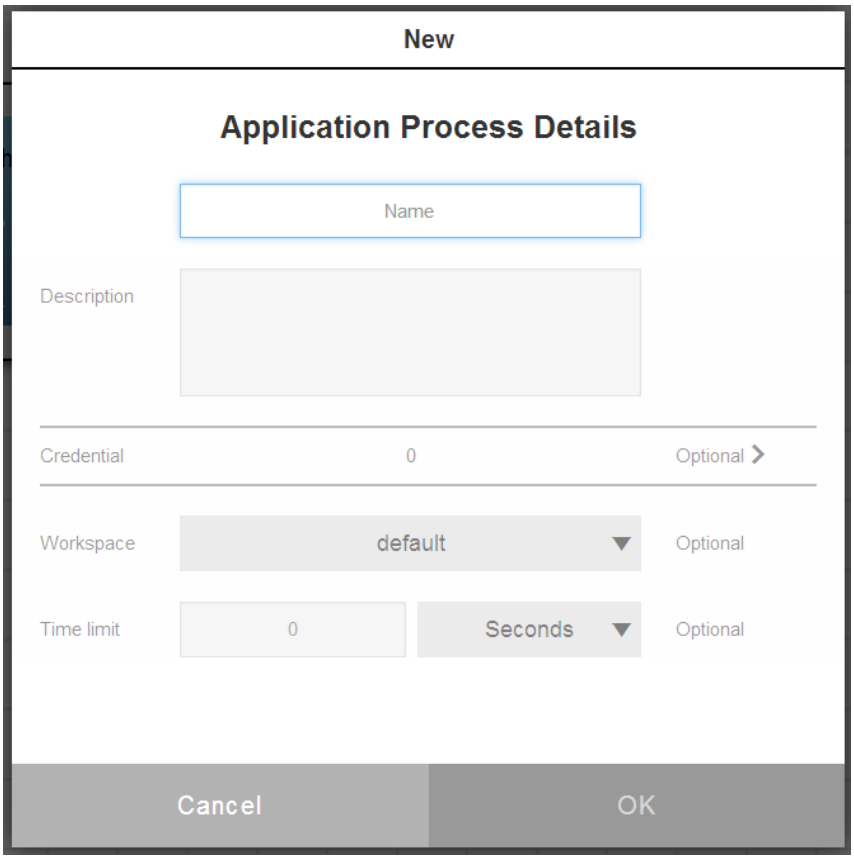


The New Application Process Details dialog box opens.

2. Enter information in the New Application Process Details dialog box, and click **OK**.

   If you need to add credentials, see Step 3 in the previous section.

   Example:



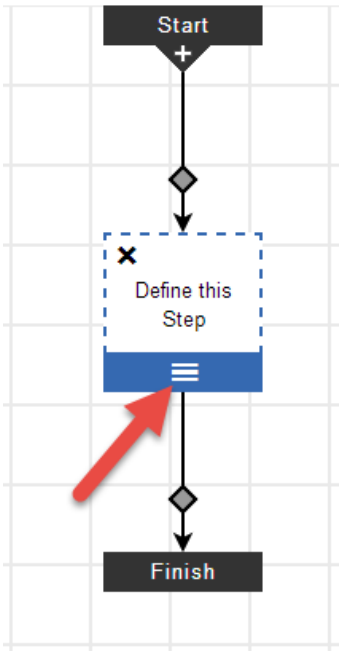
Field	Description and How to Set It
Name	Name of the process step
Description	Description of the process step
Credential	An object consisting of a user name and password that ElectricFlow uses to run a process step. The dialog box displays the number of credentials for the process step, which are the same credentials that you use with procedures, steps, and schedules in the ElectricCommander platform. You can only impersonate one credential.

Field	Description and How to Set It
Workspace	Area in the disk space where the files and results of the job step are stored. To set the workspace, click the **Workspace** field to open a drop-down list of workspaces in the ElectricCommander platform and select a workspace. For more information about workspaces, go to the ElectricCommander Help > Workspaces and Disk Management. To set the workspace, click Workspace to open a drop-down list of workspaces in the ElectricCommander platform. select a workspace, and click **OK**.
Time limit	Maximum length of time that the step is allowed to run. After the time specified, the step is aborted, To set the time limit, enter the time and select the unit of time: seconds, minutes, or hours. For information about time limits for procedure job steps in the ElectricCommander platform, go to the ElectricCommander Help > API Commands.

The Applications Process Designer opens.

3. In the new process step, click the menu icon below "Define this Step" to define it.

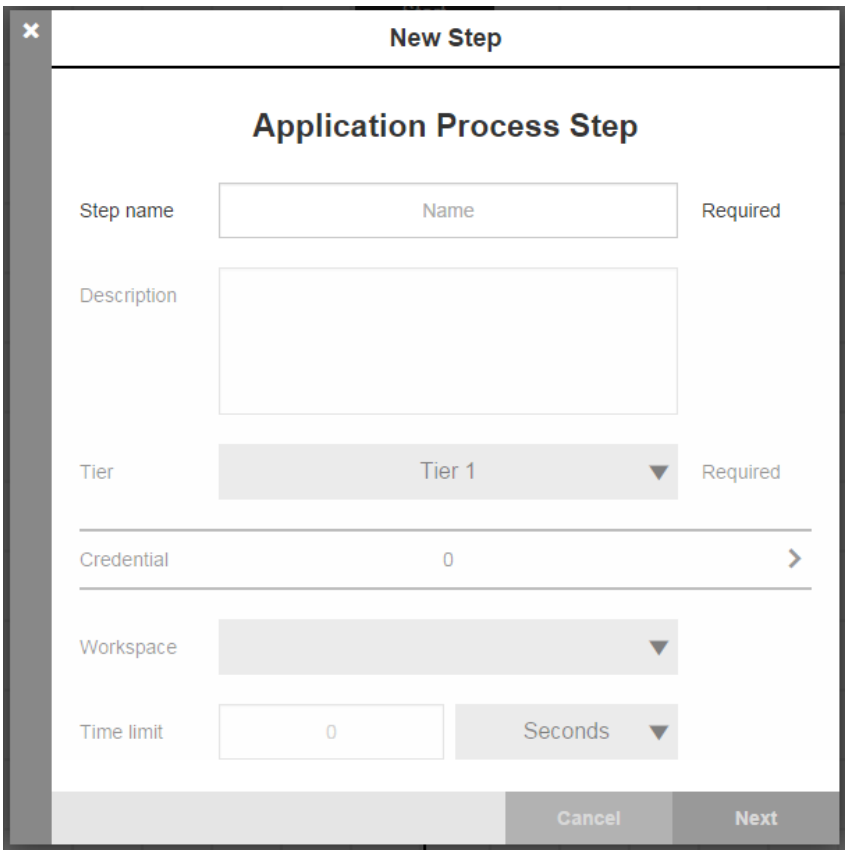
   Example:



   The Application Process Step dialog box opens.

4. Enter information about the step in the dialog box.

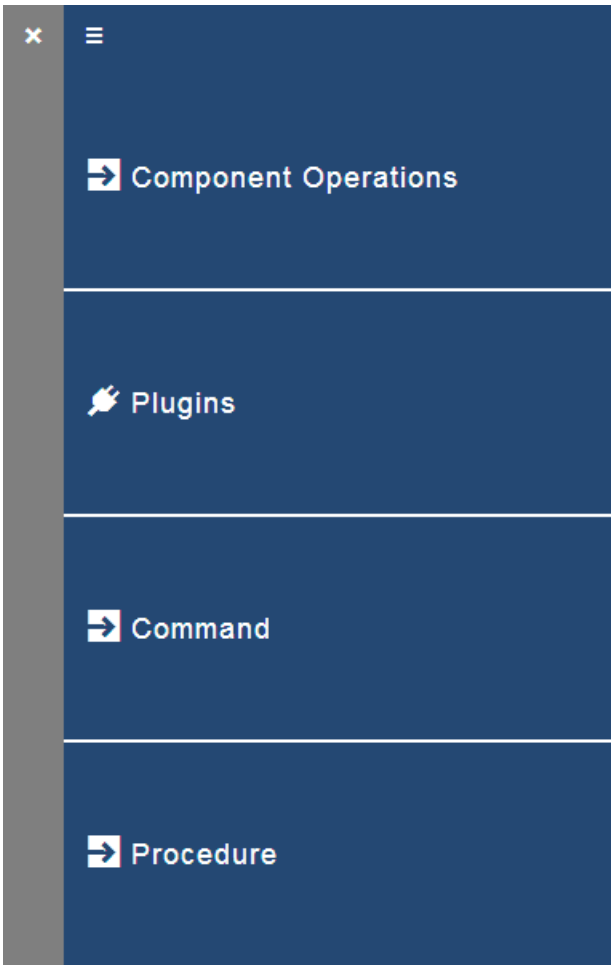
   Example:



5. Click **Next**.

   The Process Step wizard opens.

   Example:



6. To define the step, enter information in the wizards that follow.
7. When you are done, the defined step now appears in the process in the Applications Process Designer.
8. Define more steps in the process.

   For more details, see these sections: Defining Process Steps, Adding Credentials, and Configuring Process Branching.

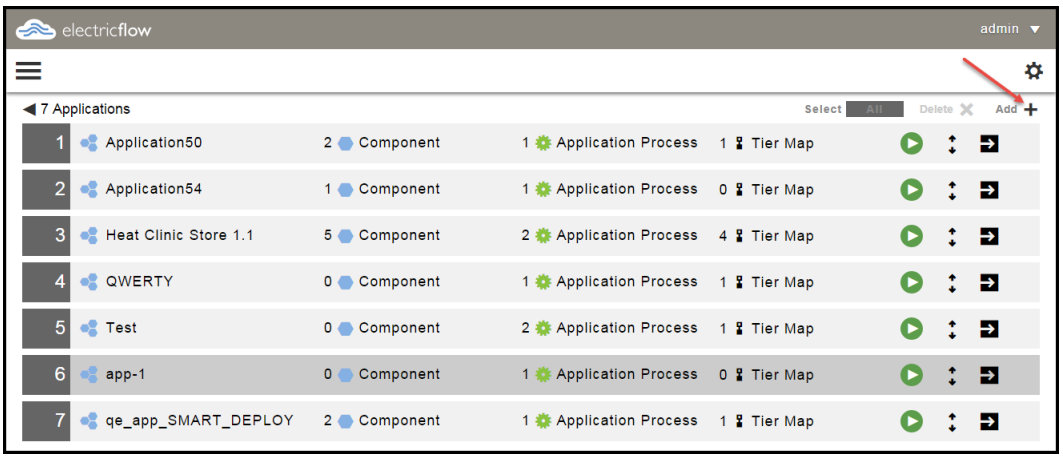
   You can also drag and drop a step into the process. See the "Using the Drag and Drop Method to Add Process Steps" section. .

Adding an Application

Starting from the Home page:

1. Go to the Applications List.

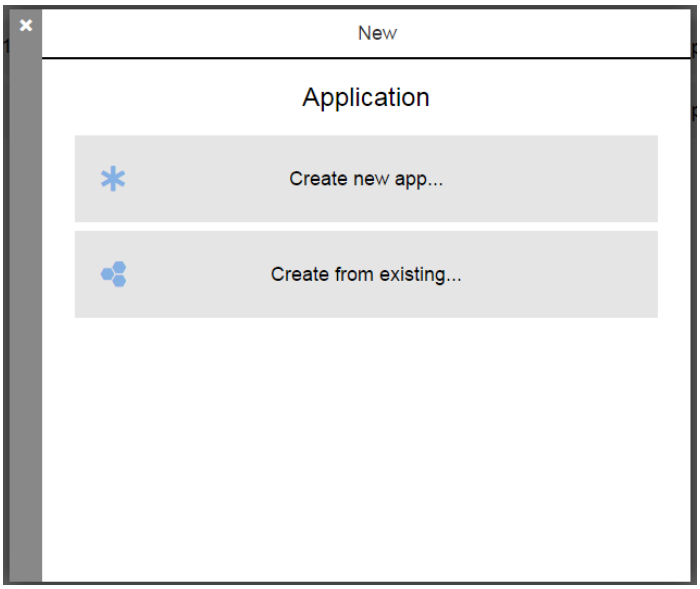
   Example:



2. Click the plus sign (+) in the upper right corner (see the example in the previous step).

   The New Application dialog box appears.

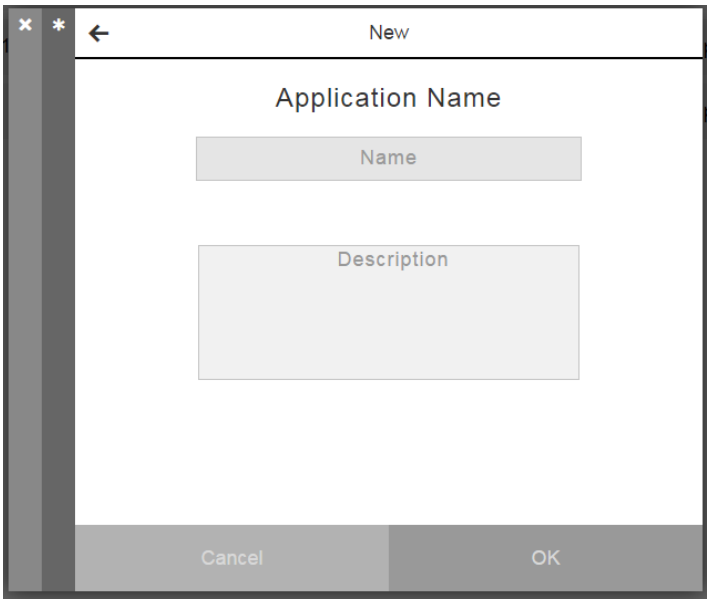
   Example:



3. Click **Create new** to add a new application.

   The New Application Name dialog box opens.

   Example:

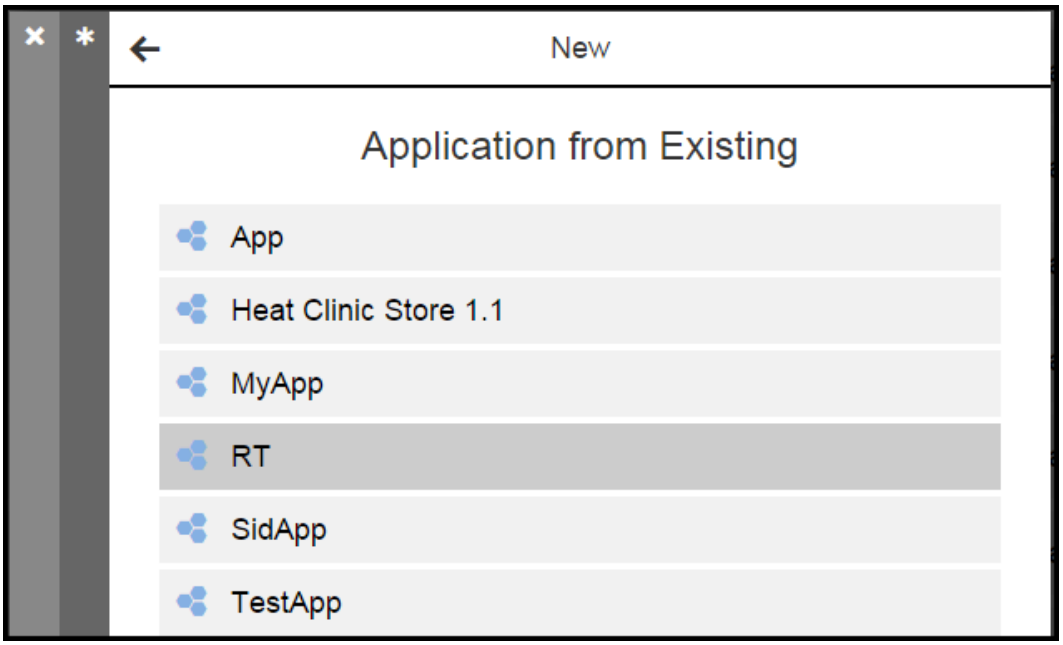


   a. Enter a name in the Name field.
   b. (Optional) Enter a description of the application in the Description field.
   c. Click **OK**.

4. Click **Create from existing** to add an application based on an existing one. This application has the same objects (components, component processes, and application processes) as the existing application but is not an exact copy of the it.

   The New Application from Existing dialog box opens.

   Example:



   a. Enter a name in the Name field. It must not match the name of another application in the project.
   b. (Optional) Enter a description of the application in the Description field.
   c. Click **OK**.

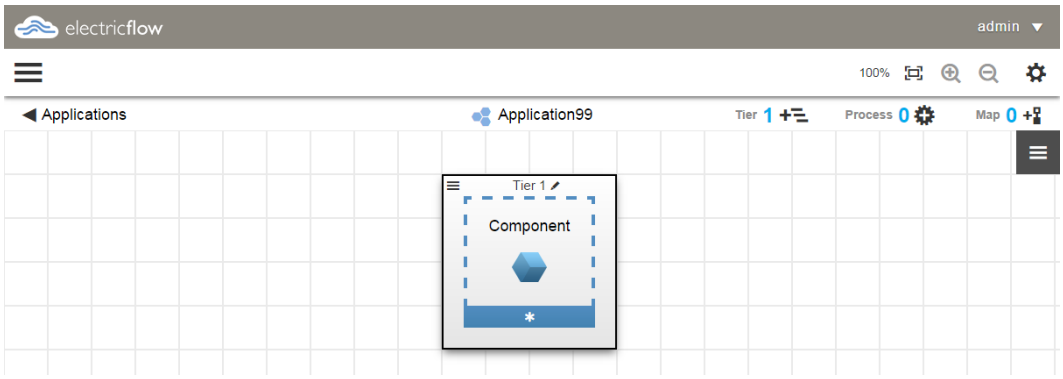
Related information:

- ElectricFlow Icons
- Applications List
- New Applications

Adding Components to the Application Tiers

If you are designing a new application, the Applications Designer has an application tier called Tier 1 with one component called Component.

Example:

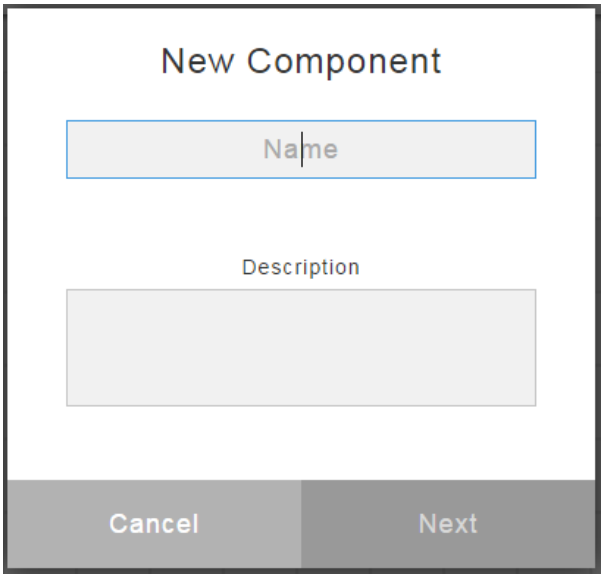


Starting in the Applications Designer:

1. Click the star icon (*) in the component in the new application tier.

   The New Component dialog box opens.

   Example:

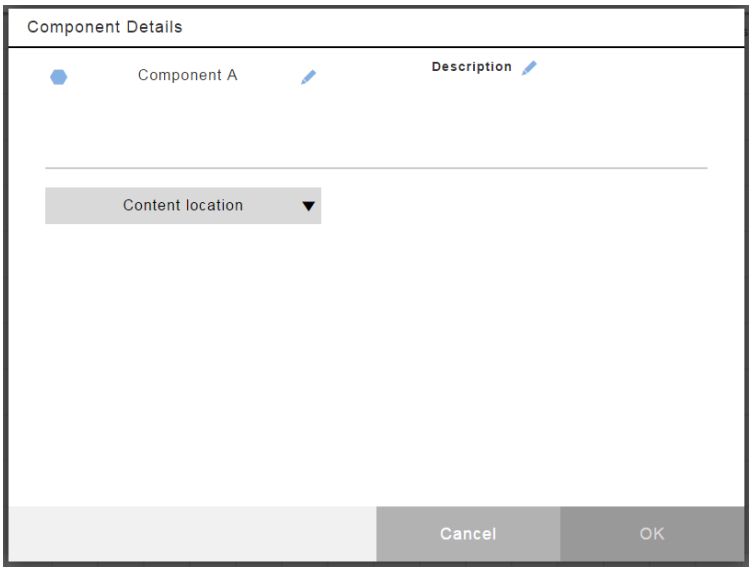


2. Enter a name in the Name field.
3. (Optional) Enter a description of the component in the Description field.

4. Click **Next**.

   The Component Details page opens.

   Example:

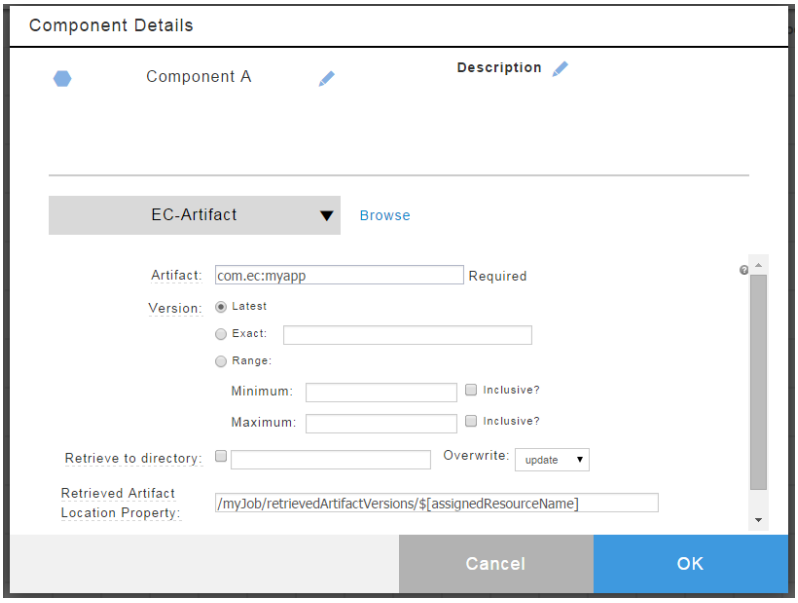


5. Click the **Current Location** field. The list of available artifacts appears.
6. Select an artifact type.

   The information needed to define the artifact appears below.

7. Enter the appropriate information in the fields.

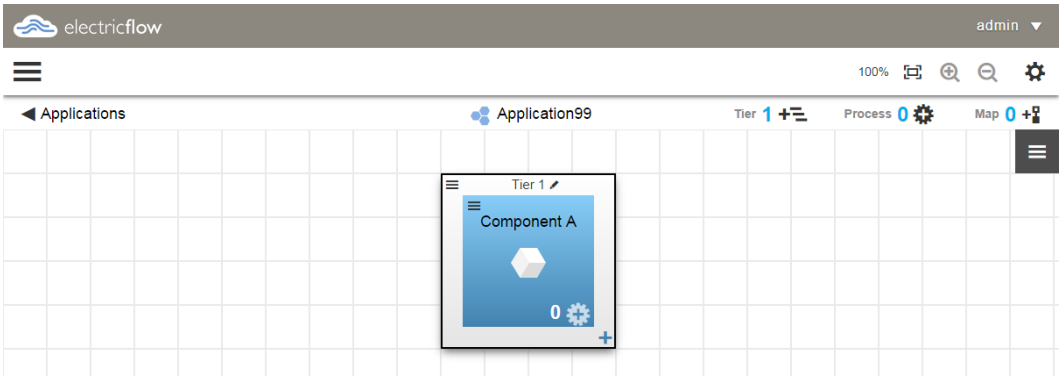
   Example:



8. Click **OK**.

   The Applications Designer re-appears and shows that there an a component with the name you specified in the application tier.

   Example:



9. To add a component to the same tier, click the plus sign in the lower right corner of the tier. A new undefined component appears in the tier.
10. Configure this component like you did the first one.

Designing Component Processes

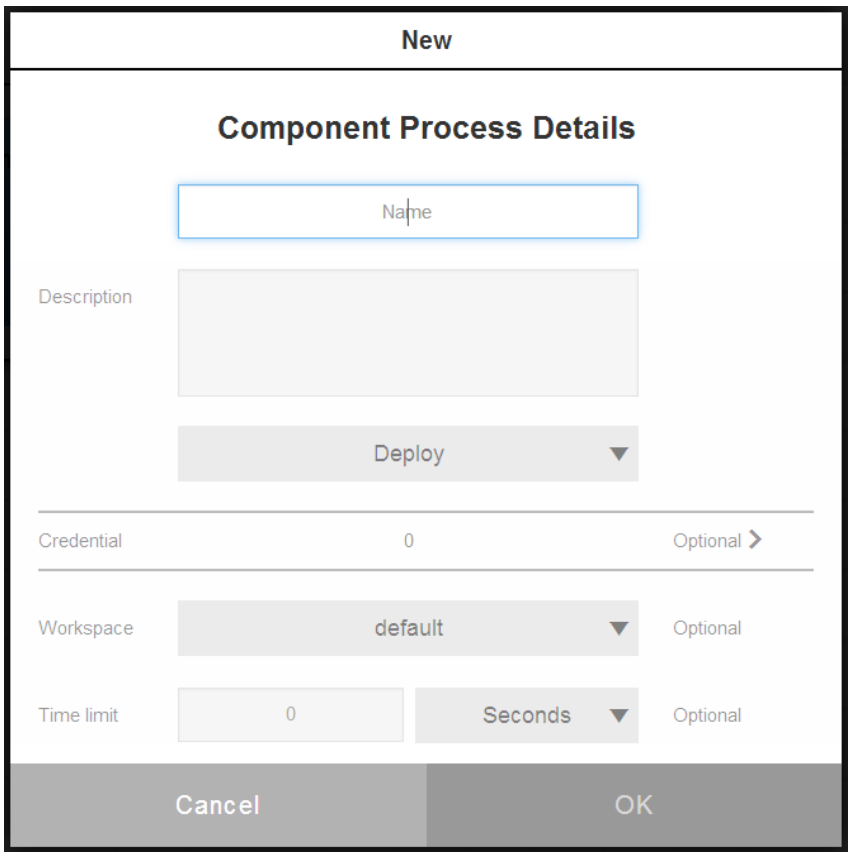
Starting in the Applications Designer:

1. Click the "Add component process" icon in the lower right corner of the component.

   The Component Process Details dialog box opens.

2. Enter information about the component process in the Component Process Details dialog box.

   Example:



Field	Description and How to Set It
Name	Name of the process step
Description	Description of the process step

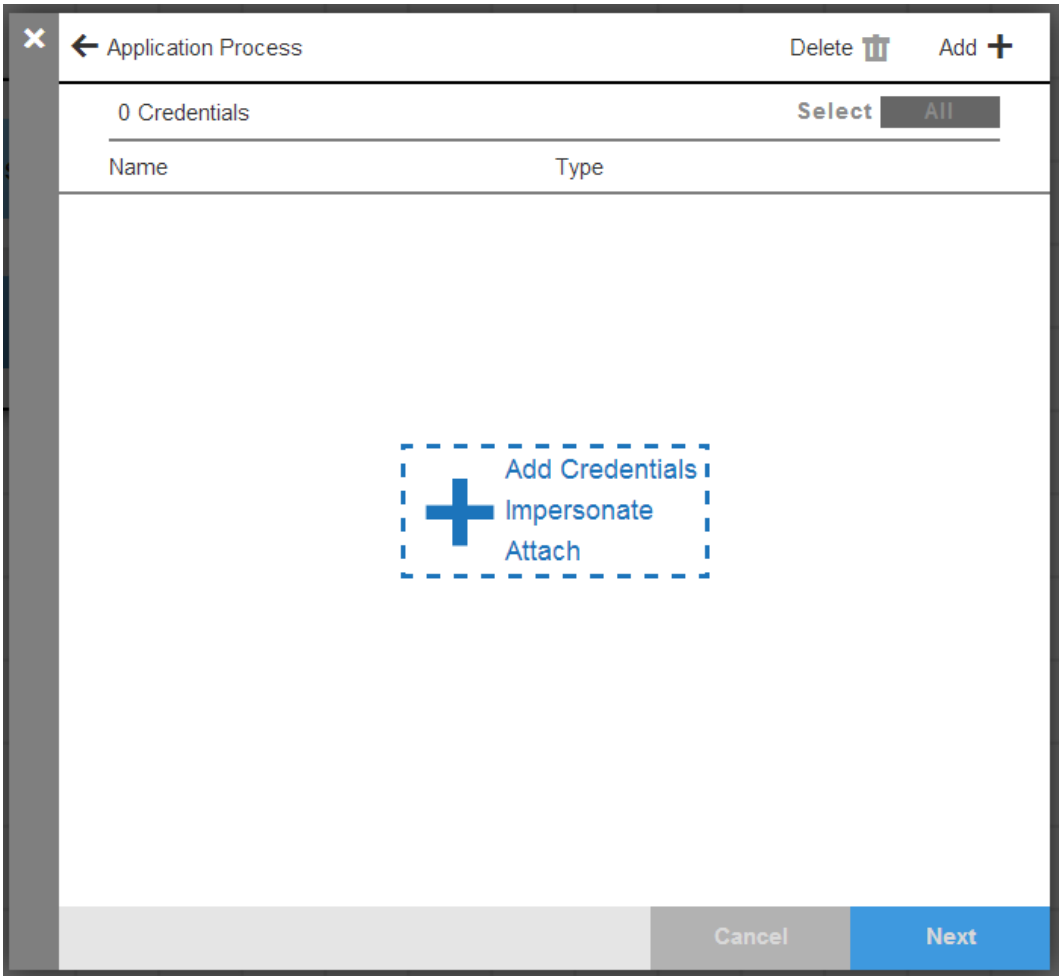
Field	Description and How to Set It
Process Type	Type of process. The default is **Deploy**. To set the process type: 1. Click the **Type** field to select the process type. 2. Select one of these options: **Deploy**–Enables inventory tracking. The ElectricCommander server tracks the artifacts deployed to environments. **Undeploy**–The next time that the process is run, the ElectricCommander server removes information about the artifacts deployed to environments. **Other**–Disables inventory tracking.
Credential	An object consisting of a user name and password that ElectricFlow uses to run a process step. The dialog box displays the number of credentials for the process step, which are the same credentials that you use with procedures, steps, and schedules in the ElectricCommander platform. You can only impersonate one credential. To set the process type, see Adding Credentials.
Workspace	Area in the disk space where the files and results of the job step are stored. To set the workspace, click the **Workspace** field to open a drop-down list of workspaces in the ElectricCloud platform and select a workspace. For more information about workspaces, go to the ElectricCommander Help > Workspaces and Disk Management. To set the workspace, click Workspace to open a drop-down list of workspaces in the ElectricCloud platform. Select a workspace, and click OK.
Time limit	Maximum length of time that the step is allowed to run. After the time specified, the step is aborted, To set the time limit, enter the time and select the unit of time: seconds, minutes, or hours. For information about time limits for procedure job steps in the ElectricCommander platform, go to the ElectricCommander Help > API Commands.

3. (Optional) To add credentials, do the following:

> **IMPORTANT:**
> When you impersonate a credential, make sure that the impersonated user has the absolute path to the bin directories in the $PATH environment.
> If you define a process step with a command, you must enter the absolute path in the **Post Processor** and **Shell** fields in the Define Step dialog box.

1. Click in the Add Credentials field.

   Example:



2. To impersonate one credential, select **Impersonate** in the Type field.
3. Click the **Select Credential** field to open a drop-down list of credentials for the process step.
4. Select a credential.

5. Click **OK**.

   The Credentials dialog box now shows the one credential for impersonation.

6. To attach one or more credential to the process step, select **Attach** in the Type field.
7. Click the **Select Credential** field to open a drop-down list of credentials for the process step.
8. Select a credential.
9. Click **OK**.

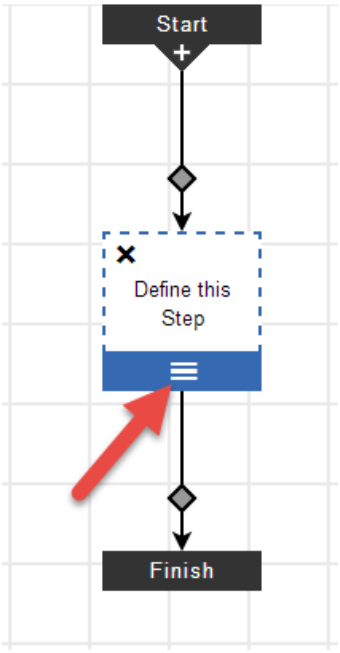
   The Credentials dialog box now shows the attached credentials.

4. Click **OK**.

   The Component Process Designer opens.

5. In the new process step, click the icon below "Define this Step" to define it.

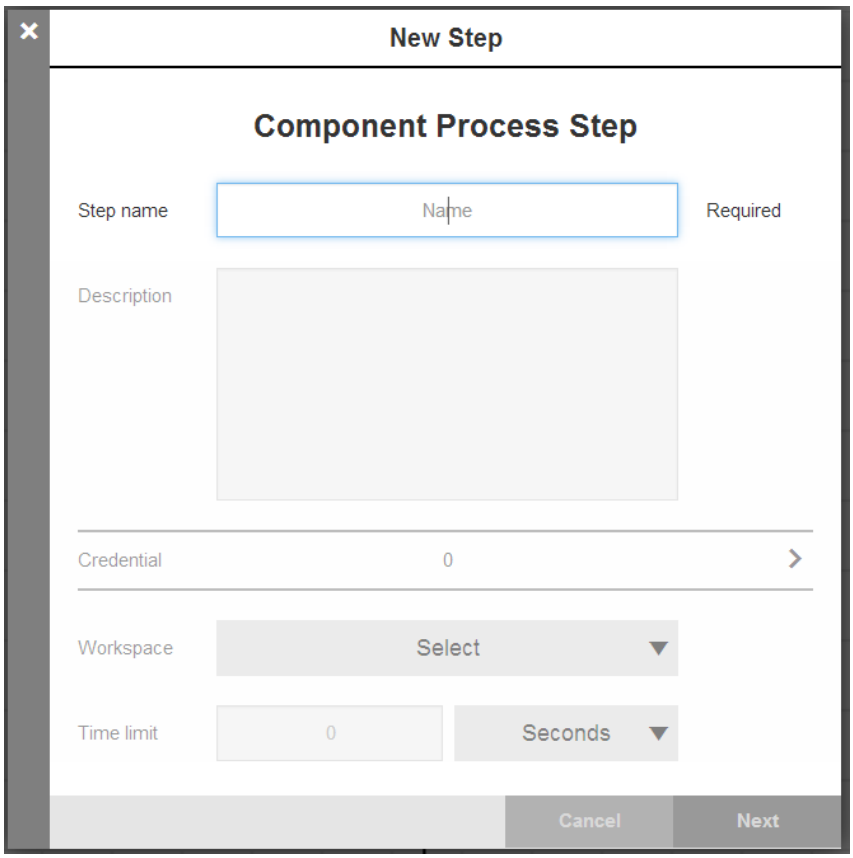
   Example:



   The Component Process Step dialog box opens.

6. Enter information about the step in the dialog box.

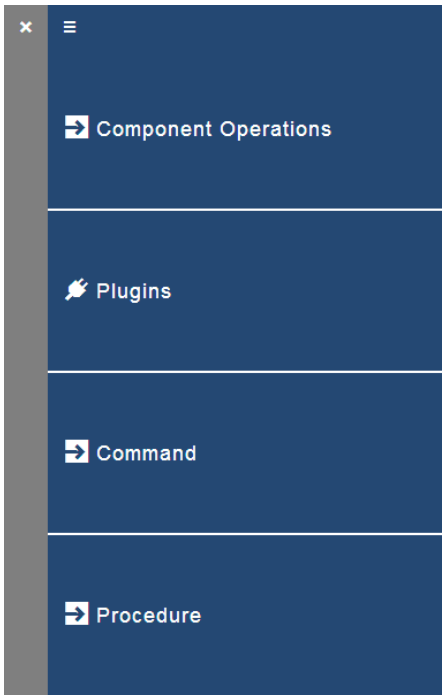
   Example:



7. Click **Next**.

   The Process Step wizard opens.

   Example:



8. To define the step, enter information in the wizards that follow.

   When you are done, the defined step now appears in the process in the Component Process Designer.

9. Define more steps in the process.

   You can also drag and drop a step into the process.

Related information:

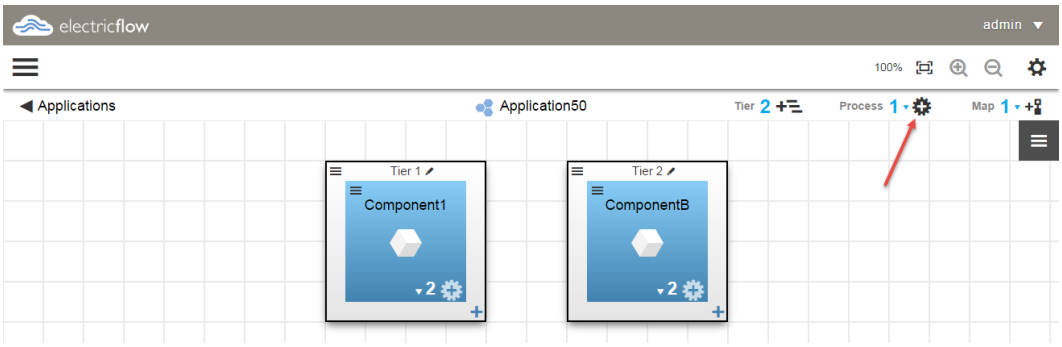
- Designing Process Steps
- Adding Credentials
- Process BranchingUsing the Drag and Drop Method to Add Process Steps
- Using the Drag and Drop Method to Add Process Steps

Designing Application Processes

Starting in the Applications Designer:

1. Click the plus sign (+) in the upper right corner to add an application.

   Example:

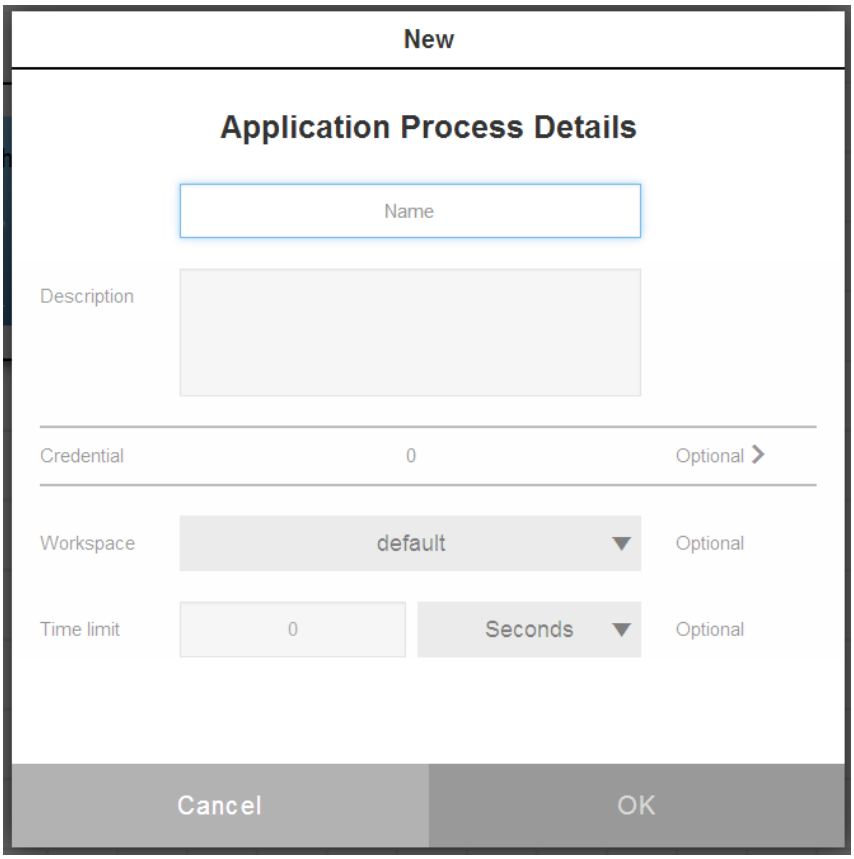


The New Application Process Details dialog box opens.

2. Enter information in the New Application Process Details dialog box, and click **OK**.

   If you need to add credentials, see Step 3 in the previous section.

   Example:



Field	Description and How to Set It
Name	Name of the process step
Description	Description of the process step
Credential	An object consisting of a user name and password that ElectricFlow uses to run a process step. The dialog box displays the number of credentials for the process step, which are the same credentials that you use with procedures, steps, and schedules in the ElectricCommander platform. You can only impersonate one credential.

Field	Description and How to Set It
Workspace	Area in the disk space where the files and results of the job step are stored. To set the workspace, click the **Workspace** field to open a drop-down list of workspaces in the ElectricCommander platform and select a workspace. For more information about workspaces, go to the ElectricCommander Help > Workspaces and Disk Management. To set the workspace, click Workspace to open a drop-down list of workspaces in the ElectricCommander platform. select a workspace, and click **OK**.
Time limit	Maximum length of time that the step is allowed to run. After the time specified, the step is aborted, To set the time limit, enter the time and select the unit of time: seconds, minutes, or hours. For information about time limits for procedure job steps in the ElectricCommander platform, go to the ElectricCommander Help > API Commands.

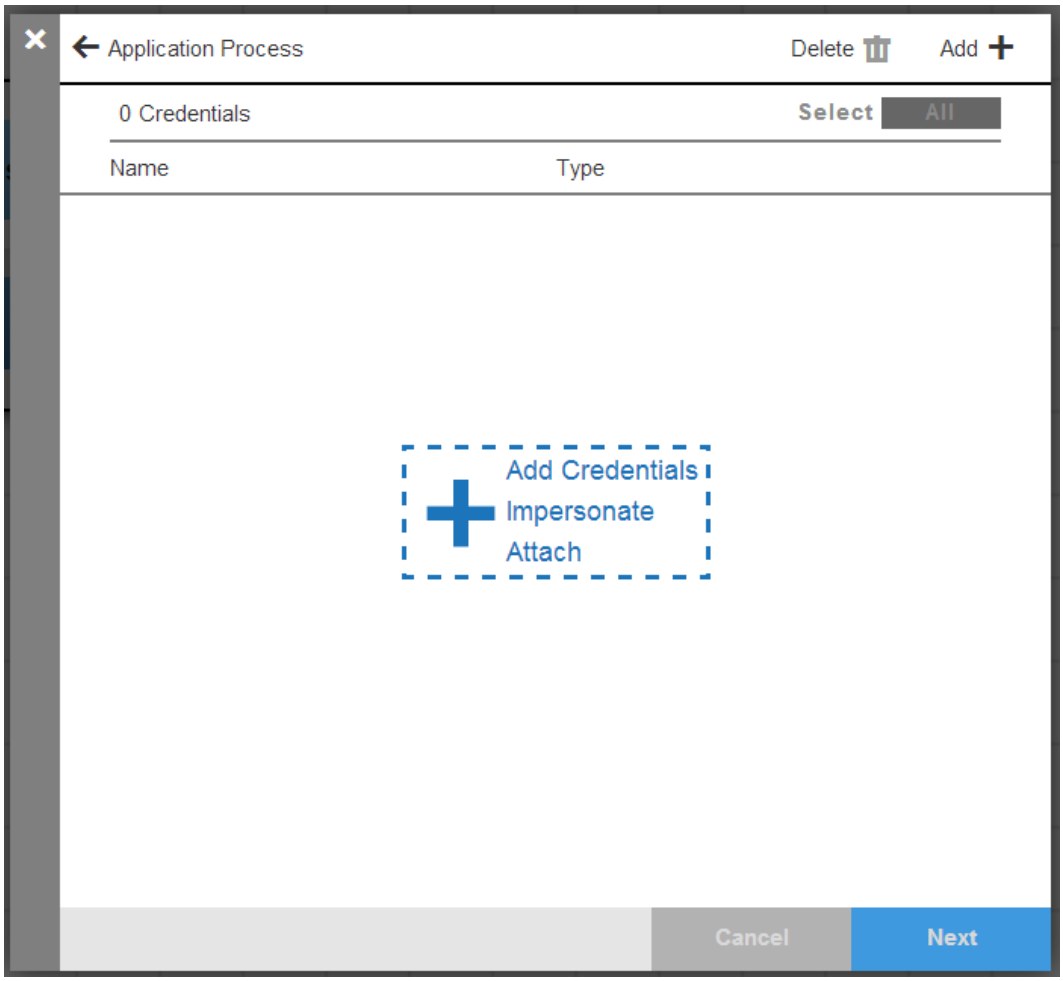
The Applications Process Designer opens.

3. (Optional) To add credentials, do the following:

   Note:
   When you impersonate a credential, make sure that the impersonated user has the absolute path to the bin directories in the $PATH environment.
   If you define a process step with a command, you must enter the absolute path in the **Post Processor** and **Shell** fields in the Define Step dialog box.

   1. Click in the Add Credentials field.

      Example:



   2. To impersonate one credential, select **Impersonate** in the Type field.
   3. Click the **Select Credential** field to open a drop-down list of credentials for the process step.
   4. Select a credential.

5. Click **OK**.

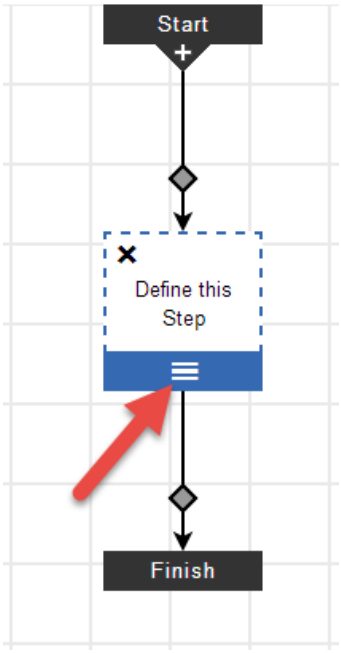
   The Credentials dialog box now shows the one credential for impersonation.

6. To attach one or more credential to the process step, select **Attach** in the Type field.
7. Click the **Select Credential** field to open a drop-down list of credentials for the process step.
8. Select a credential.
9. Click **OK**.

   The Credentials dialog box now shows the attached credentials.

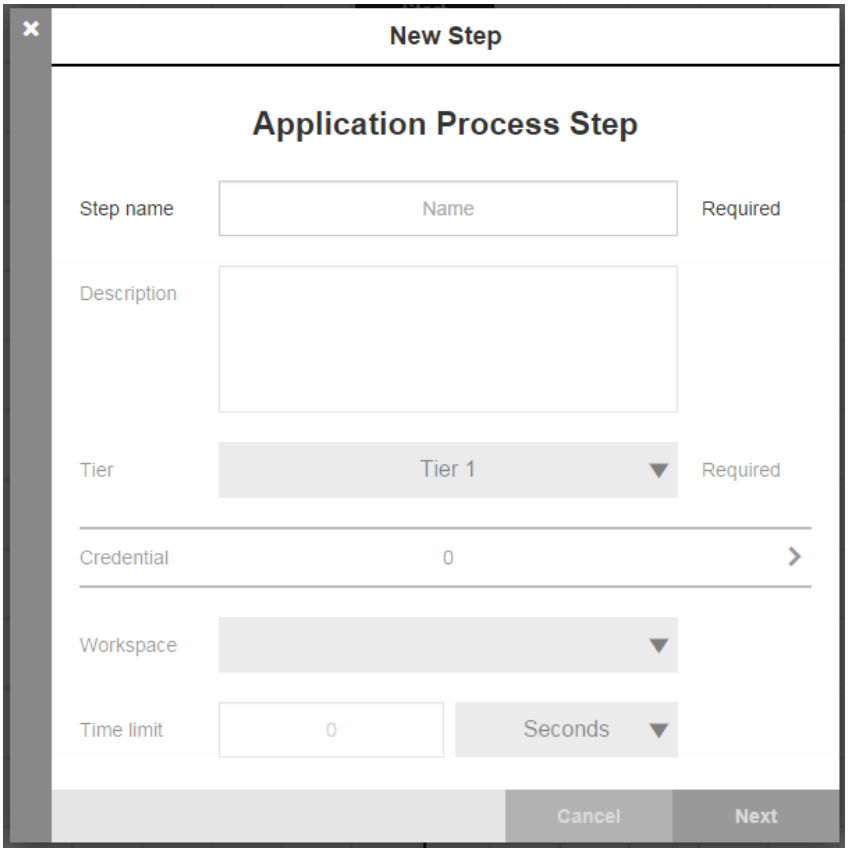
4. In the new process step, click the icon below "Define this Step" to define it.

   Example:



   The Application Process Step dialog box opens.

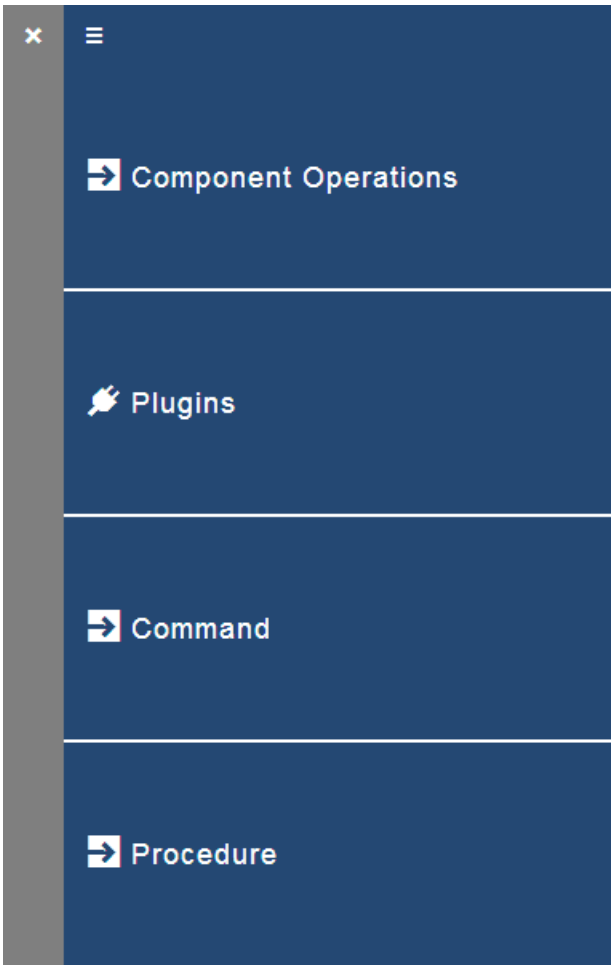
5. Enter information about the step in the dialog box.



6. Click **Next**.

   The Process Step wizard opens.

   Example:



7. To define the step, enter information in the wizards that follow.
8. When you are done, the defined step now appears in the process in the Applications Process Designer.
9. Define more steps in the process.

   You can also drag and drop a step into the process.

Related information:

- Designing Process Steps
- Adding Credentials
- Process Branching
- Using the Drag and Drop Method to Add Process Steps

Using the Drag and Drop Method to Add Process Steps

How to get to the Application Process Designer:

- Existing application process: From the Applications Designer, click the number-and-down-arrow icon and select an application. The Application Process Designer for that application process appears.
- New application process: From the Applications Designer, click the "Add application process" icon, set the parameters in the Application Process Details dialog box, and click **OK**. The Application Process Designer for the application appears.

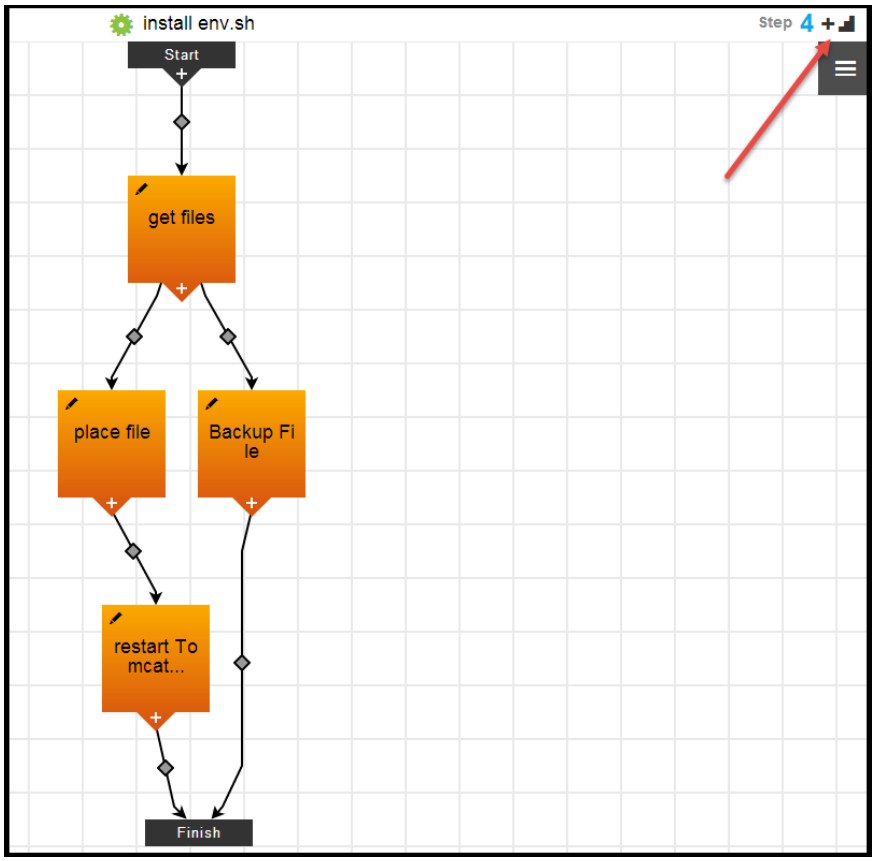
How to get to the Component Process Designer:

- Existing component process: From the Applications Designer, click the "Show component process" icon, and select a component process in the drop-down list. The Component Process Designer for that component process appears.
- New component process: From the Applications Designer, click the "Add component process" icon to a component, set the parameters in the Component Process Details dialog box, and click **OK**. The Component Process Designer for the component process appears.

To drag and drop a new step to a component or application process:

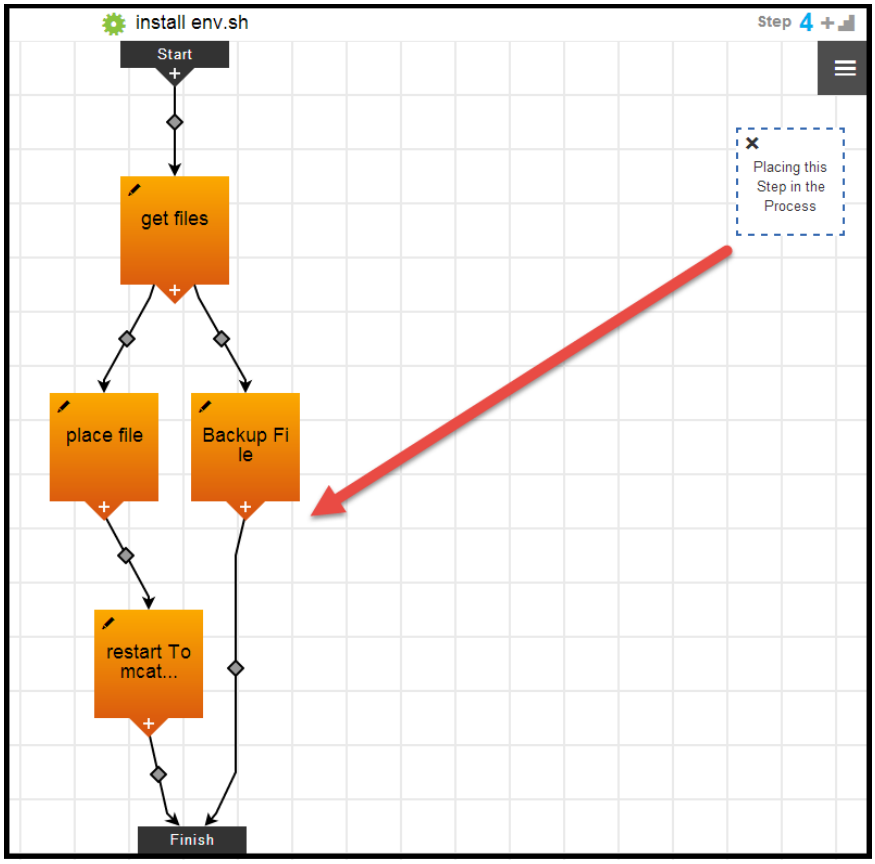
1. Click the "Add Step" icon in the upper right corner of the Component Process or Application Process Designer.

   .A new undefined step appears.



2. Select the new step.

3. Drag the step to where you want to add it in the process.



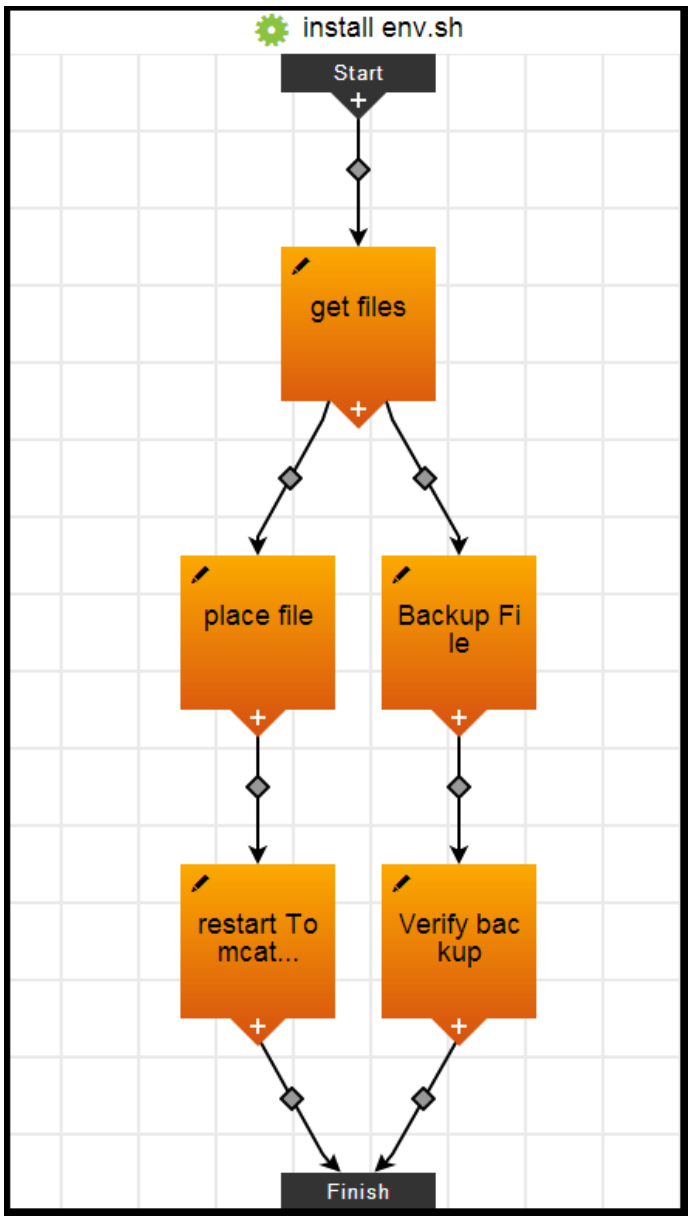
When you are near where you want to add the step in the process, notice that the icon changes shape and the text in it changes to "Dropping this Step in the Process."

4. Drop the step in the process.

The Component Process Step dialog box appears.

5. Design the step.

   The new step is in the process.



Related information:

- Designing Component Processes
- Designing Application Processes
- Designing Process Steps

Adding Credentials

How to get here: From the Component Process Step or the Application Process Step dialog box, click **>**.The Credentials dialog box opens.

You can attach one or more credentials to component process steps and application process steps.

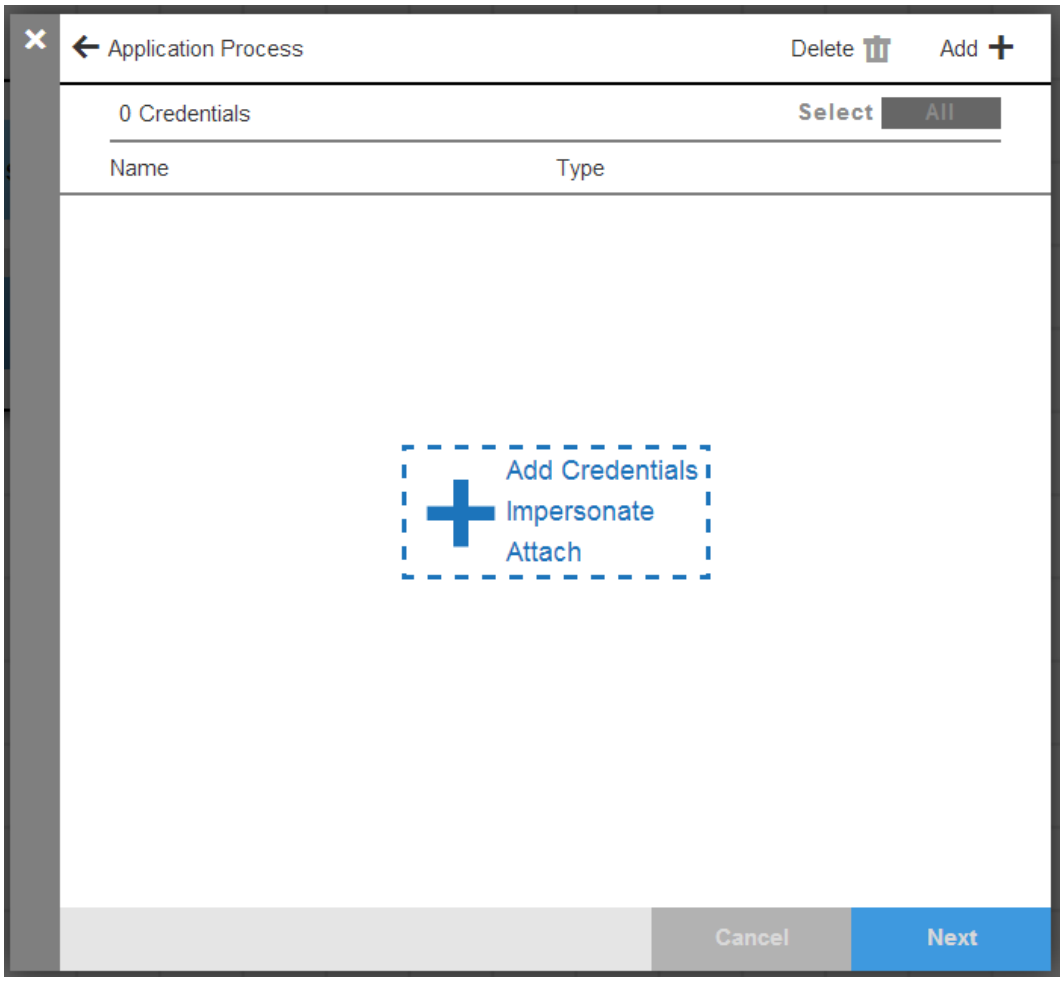
You attach only one credential for impersonation on the following:

- Component process
- Component process step
- Application process
- Application process step

IMPORTANT:
When you impersonate a credential, make sure that the impersonated user has the absolute path to the bin directories in the $PATH environment.
If you define a process step with a command, you must enter the absolute path in the **Post Processor** and **Shell** fields in the Define Step dialog box.

1. Click in the Add Credentials field.

   Example:



2. To impersonate one credential, select **Impersonate** in the Type field.
3. Click the **Select Credential** field to open a drop-down list of credentials for the process step.
4. Select a credential.
5. Click **OK**.

   The Credentials dialog box now shows the one credential for impersonation.
6. To attach one or more credential to the process step, select **Attach** in the Type field.
7. Click the **Select Credential** field to open a drop-down list of credentials for the process step.
8. Select a credential.
9. Click **OK**.

   The Credentials dialog box now shows the attached credentials.

Configuring Plugins

When you want to use a plugin to define your application or component process step, all of the supported plugins appear. However, you may want to see only the list of plugins that apply to your group or organization, such as Apache Subversion (SVN) and Git plugins.

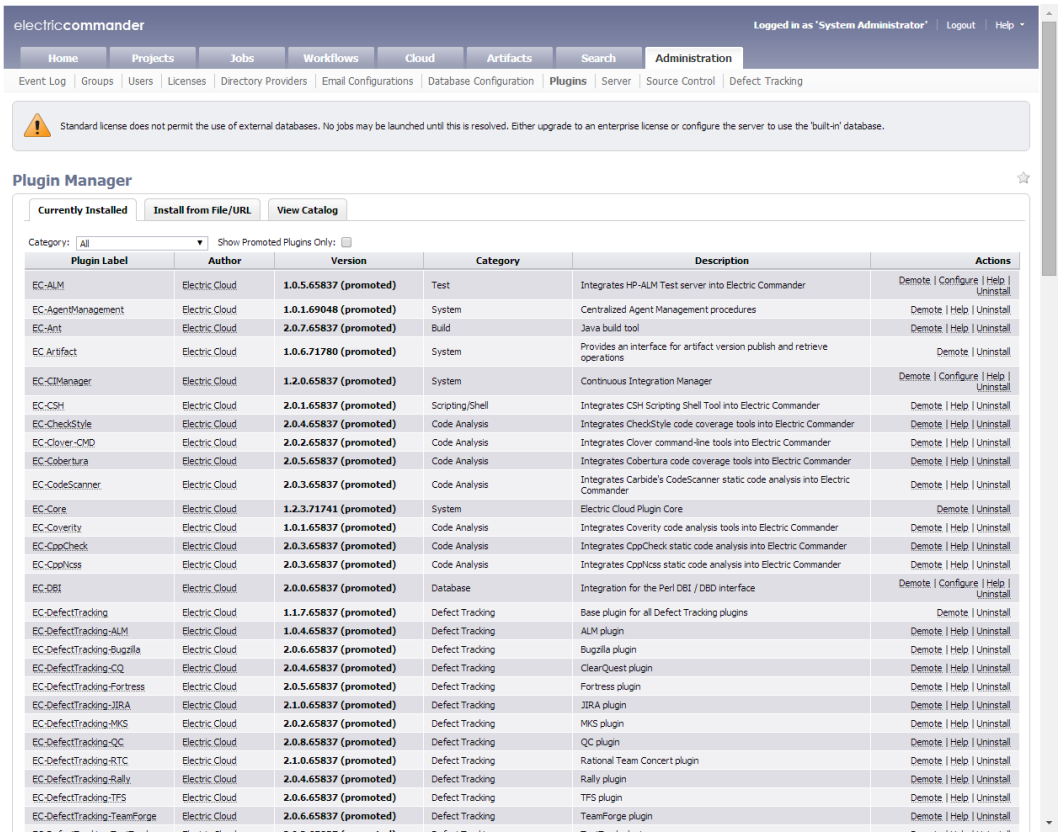
To edit the list of plugins:

1. In the landing page, click the Settings icon and then click **Administration** to go to the ElectricCommander platform.

   The ElectricCommander platform page opens.

2. Click **Plugins**.

   The Plugin Manager appears.



3. Select a plugin in the list.
4. In the Actions column for the selected plugin, click **Demote**. The page refreshes and the plugin no longer appears on it.

The next time that you define a step with a plugin, only the plugins for your group or organization appear.

Component and Application Process Steps: ectool Example

This is sample code showing how to design component and application process steps using the ectool API.

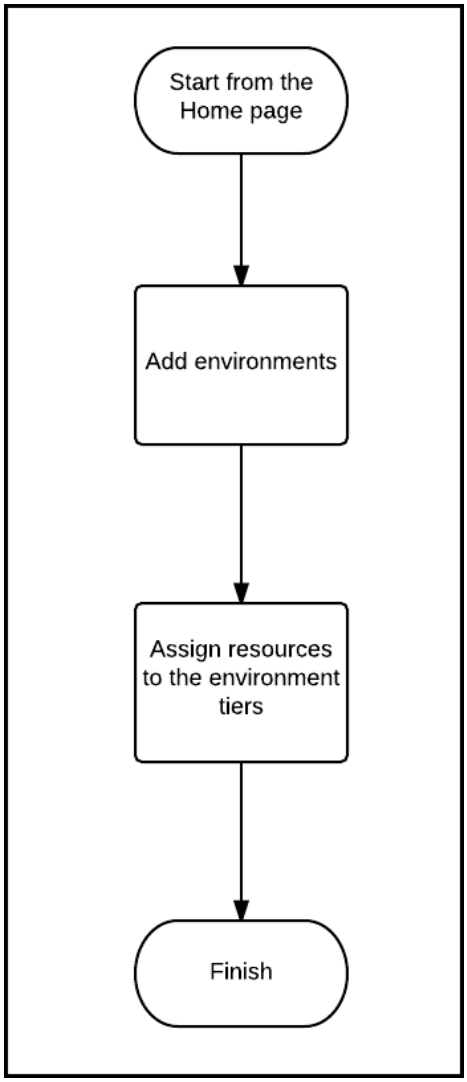
```
#!/bin/bash

# set all names
hostname='localhost'
projectName='default'
appName='myApp'
envName='myEnv'
appTierName='myAppTier'
componentName='myComponent'
artifactName='DEV:MyArt001'
envTierName='myEnvTier'
artifactProjectName='EC-Artifact-1.0.9.76076'
subProject_artifact='/plugins/EC-Artifact/project'
appProcessName='myApp_process'
appProcessStepName='myApp_process_step'
compProcessName='myComp_process'
compProcessStepName='myComp_process_step'
resource1='res_1'
resource2='res_2'
resource3='res_3'
resource4='res_4'


# login
ectool --server $hostname login admin changeme

# make sure same application, artifacts, resources don't already exist
echo 'make sure same application, artifacts, resources do not already exist'
ectool deleteApplication --projectName $projectName --applicationName $appName
ectool deleteEnvironment --projectName $projectName --environmentName $envName
ectool deleteArtifact --artifactName $artifactName
ectool deleteResource --resourceName $resource1
ectool deleteResource --resourceName $resource2
ectool deleteResource --resourceName $resource3
ectool deleteResource --resourceName $resource4
```

```
# create application

echo 'creating application'

ectool createApplication --projectName $projectName --applicationName $appName


#create application tier

echo 'creating application tier'

ectool createApplicationTier --projectName $projectName --applicationName $appName --appl
icationTierName $appTierName


#create and publish artifact versions

ectool createArtifact --groupId 'DEV'  --artifactKey  'MyArt001'

ectool publishArtifactVersion --artifactName $artifactName --version '1.0' --fromDirector
y 'tmp/partial_deployment' --includePatterns "abc1.war"

ectool publishArtifactVersion --artifactName $artifactName --version '2.0' --fromDirector
y 'tmp/partial_deployment' --includePatterns "abc2.war"


#create component and add it to app tier

ectool createComponent --projectName $projectName --applicationName $appName --componentN
ame $componentName  --pluginName $artifactProjectName

ectool addComponentToApplicationTier --projectName $projectName --applicationName $appNam
e --applicationTierName $appTierName --componentName $componentName


#Set component properties

ectool createProperty --projectName $projectName --applicationName $appName  --componentN
ame $componentName --propertyName 'ec_content_details' --propertyType 'sheet'

ectool createProperty --projectName $projectName --applicationName $appName  --componentN
ame $componentName --propertyName 'ec_content_details/artifactName' --value $artifactName

ectool createProperty --projectName $projectName --applicationName $appName  --componentN
ame $componentName --propertyName 'ec_content_details/versionRange' --value '1.0'

ectool createProperty --projectName $projectName --applicationName $appName  --componentN
ame $componentName --propertyName 'ec_content_details/artifactVersionLocationProperty' --
value '/myJob/retrievedArtifactVersions/$[assignedResourceName]'

ectool createProperty --projectName $projectName --applicationName $appName  --componentN
ame $componentName --propertyName 'ec_content_details/overwrite' --value 'update'

ectool createProperty --projectName $projectName --applicationName $appName  --componentN
ame $componentName --propertyName 'ec_content_details/filterList' --value ''

ectool createProperty --projectName $projectName --applicationName $appName  --componentN
ame $componentName --propertyName 'ec_content_details/pluginProcedure' --value 'Retrieve'
```

```
ectool createProperty --projectName $projectName --applicationName $appName  --componentN
ame $componentName --propertyName 'ec_content_details/pluginProjectName' --value 'EC-Arti
fact'

ectool createProperty --projectName $projectName --applicationName $appName  --componentN
ame $componentName --propertyName 'ec_ui' --propertyType 'sheet'

ectool createProperty --projectName $projectName --applicationName $appName  --componentN
ame $componentName --propertyName 'ec_ui/stepType' --value 'operation'


#create component process and  step

ectool createProcess --projectName $projectName --processName $compProcessName --componen
tApplicationName $appName --processType 'DEPLOY' --componentName $componentName

ectool createProcessStep --projectName $projectName --processName $compProcessName --proc
essStepName $compProcessStepName --componentName $componentName --componentApplicationNam
e $appName --subprocedure 'Retrieve' --subproject $subProject_artifact --processStepType
'component' --includeCompParameterRef 1



#create environment, tiers and add resources

ectool createEnvironment --projectName $projectName --environmentName $envName --environm
entEnabled 'true'

ectool createEnvironmentTier --projectName $projectName --environmentName $envName --envi
ronmentTierName $envTierName

ectool createResource --resourceName $resource1 --hostName $hostname --pools $projectName

ectool createResource --resourceName $resource2 --hostName $hostname --pools $projectName

ectool createResource --resourceName $resource3 --hostName $hostname --pools $projectName

ectool createResource --resourceName $resource4 --hostName $hostname --pools $projectName

ectool addResourceToEnvironmentTier --resourceName $resource1 --projectName $projectName
--environmentName $envName --environmentTierName $envTierName

ectool addResourceToEnvironmentTier --resourceName $resource2 --projectName $projectName
--environmentName $envName --environmentTierName $envTierName

ectool addResourceToEnvironmentTier --resourceName $resource3 --projectName $projectName
--environmentName $envName --environmentTierName $envTierName

ectool addResourceToEnvironmentTier --resourceName $resource4 --projectName $projectName
--environmentName $envName --environmentTierName $envTierName


# create application process and steps

ectool createProcess --projectName $projectName --processName $appProcessName --applicati
onName $appName

ectool createProcessStep --projectName $projectName --processName $appProcessName --proce
ssStepName  $appProcessStepName --errorHandling 'abortJob' --subcomponent $componentName
--subcomponentApplicationName $appName --subcomponentProcess $compProcessName --applicati
onName $appName --applicationTierName $appTierName --processStepType 'process'
```

```
# create tier mapping

ectool createTierMap --projectName $projectName --applicationName $appName --environmentP
rojectName $projectName --environmentName $envName --tierMapName 'map1' --tierMapping "$a
ppTierName=$envTierName"
```

Designing Environments



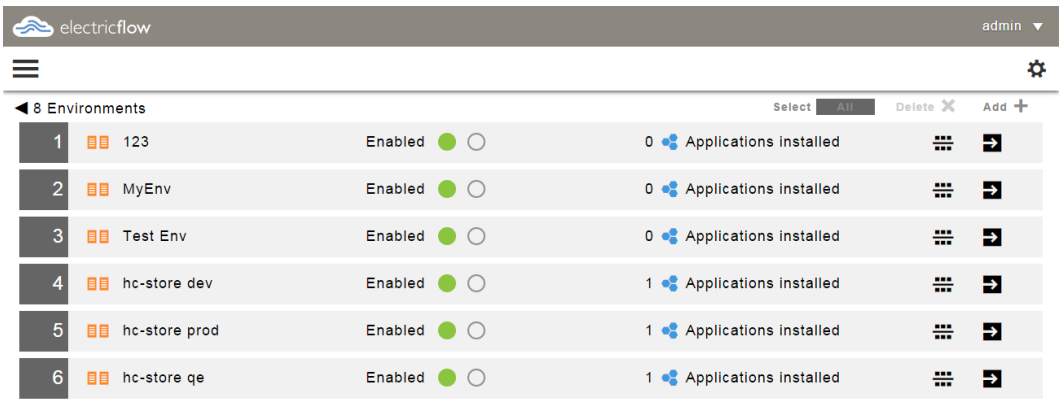
1. Add an environment.
2. Assign resources to environment tiers.

Adding an Environment

Starting from the Home page:

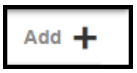
1. Go to the Environments List.

   Example:



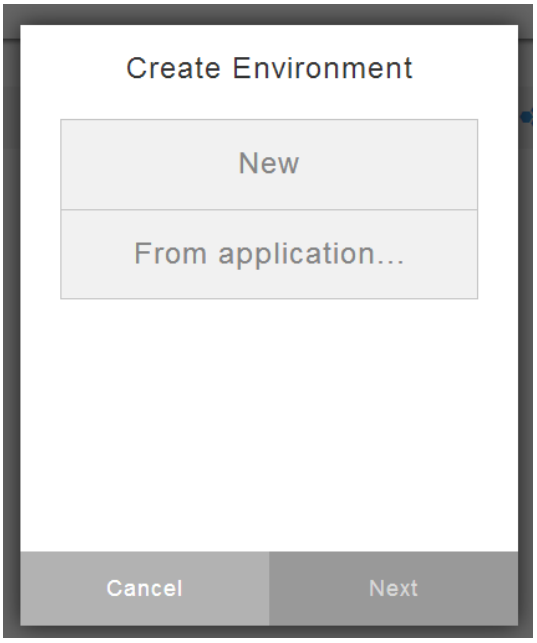
2. Click the "Add environment" icon in the upper right corner.

   Example:



   The Create Environment appears.

   Example:

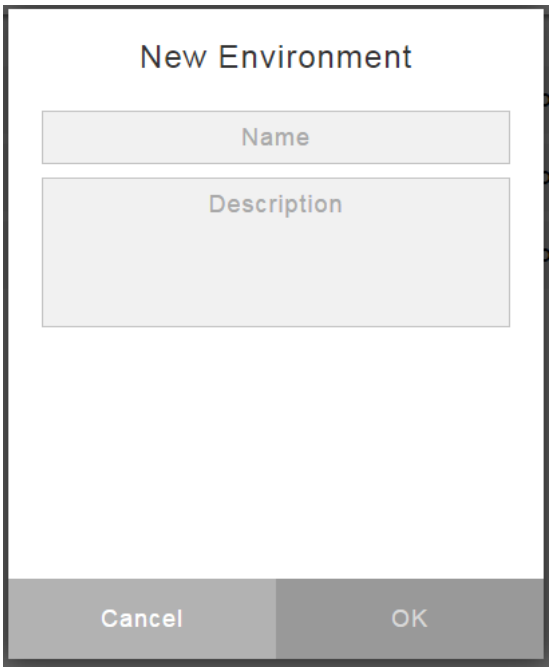


3. Click **New** or **From application**, and go to the appropriate next step.

4. Click **New** and then **Next** to add a new environment.

   The New Environment dialog box opens.

   Example:



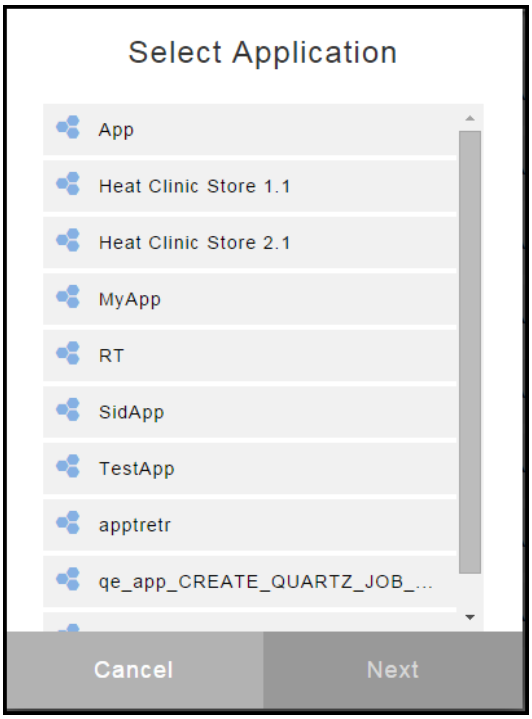
   a. Enter a name in the Name field.
   b. (Optional) Enter a description of the application in the Description field.
   c. Click **OK**.

5. Click **From application** and then **Next** to add an environment that will have the same number of tiers with the same names as the application you will select.

   The Select Application dialog box opens. In the example, the Heat Clinic Store 1.1 application has three tiers:

   - Apache Web
   - MySQL
   - Tomcat

   Example:



   a. Select an application and then click **Next**.

      The New Environment dialog box opens.

   b. Enter a name in the Name field. It must not match the name of another application in the project.

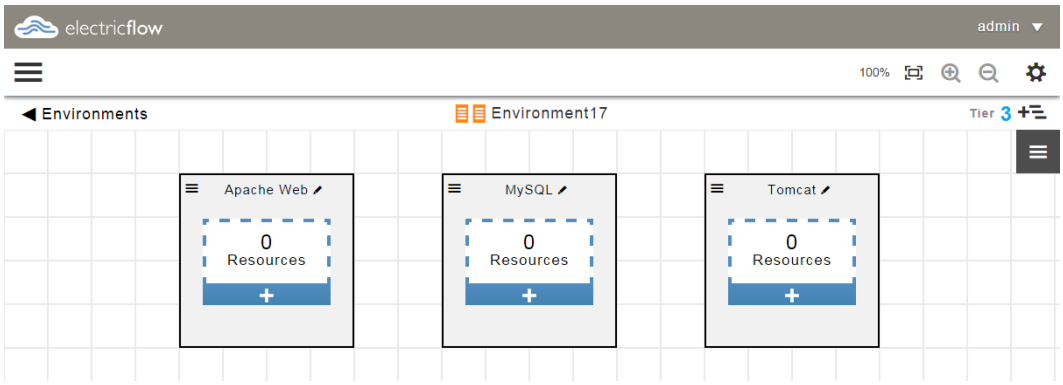
   c. (Optional) Enter a description of the application in the Description field.

   d. Click **OK**.

The new environment has these three tiers:

- Apache Web
- MySQL
- Tomcat

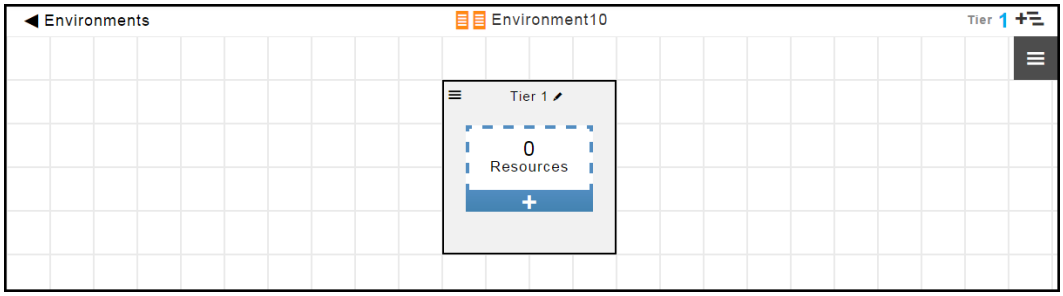
Example:



Assigning Resources to Environment Tiers

If you are designing a new environment, the Environments Designer has an application tier called Tier 1 with no resources.

Example:



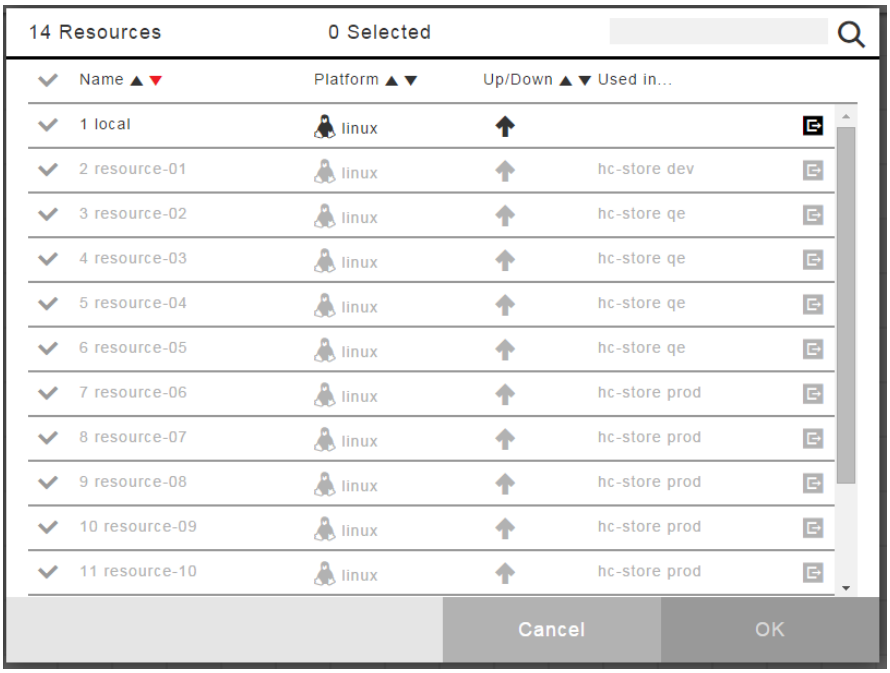
Starting in the Environments Designer:

1. Click the plus sign (+) in the new environment tier.

   The Resources List opens.

   In the example, there are 14 resources allocated to your system. You can select a resource that is not used in an environment. Resources that are already used in environments are dimmed, and you cannot select them.

   Example:

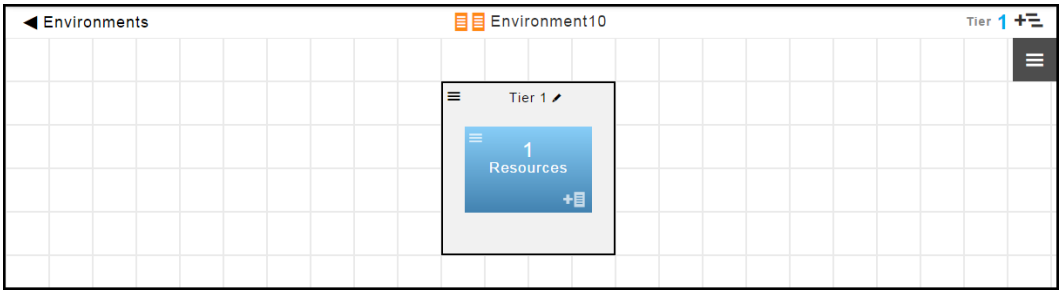


2. Select an available resource and click **OK**.

   The Environments Designer now shows that one resource is assigned to the tier.

   In the example, one resource is assigned to Tier 1.

   Example:



3. Click the "Add Resource" icon in the tier to add another resource to it.

   Example:

   The Resource List opens.

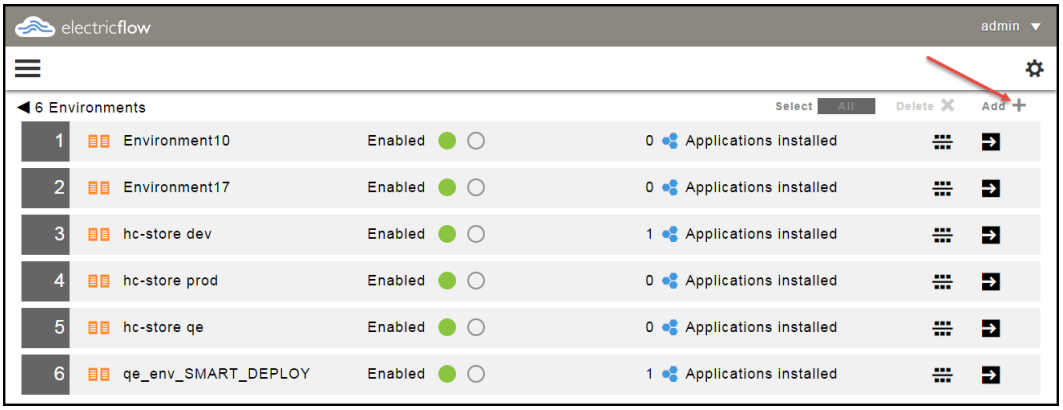
4. Repeat the previous steps to assign a resource to the environment tier.

Adding an Environment

Starting from the Home page:

1. Go to the Environments List.

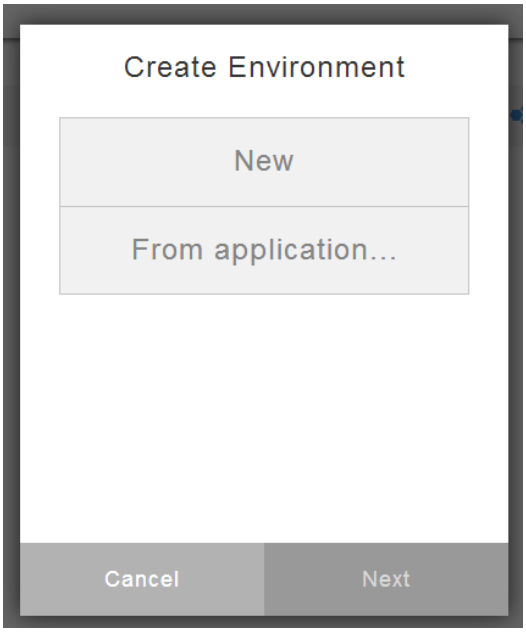
   Example:



2. Click the plus sign (+) in the upper right corner (see the example in the previous step).

   The Create Environment appears.

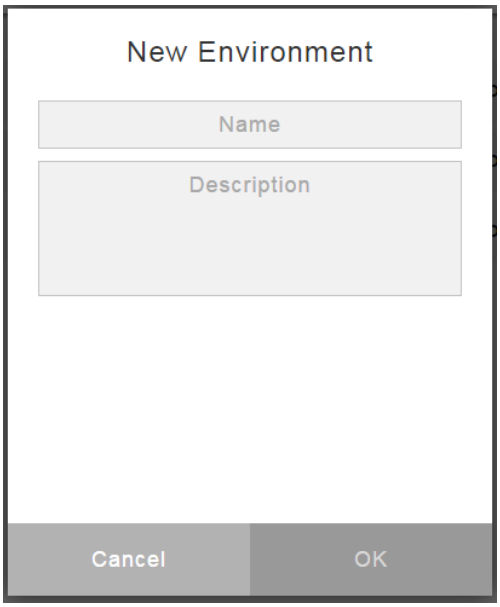
   Example:



3. Click **New** and then **Next** to add a new environment.

   The New Environment dialog box opens.

   Example:



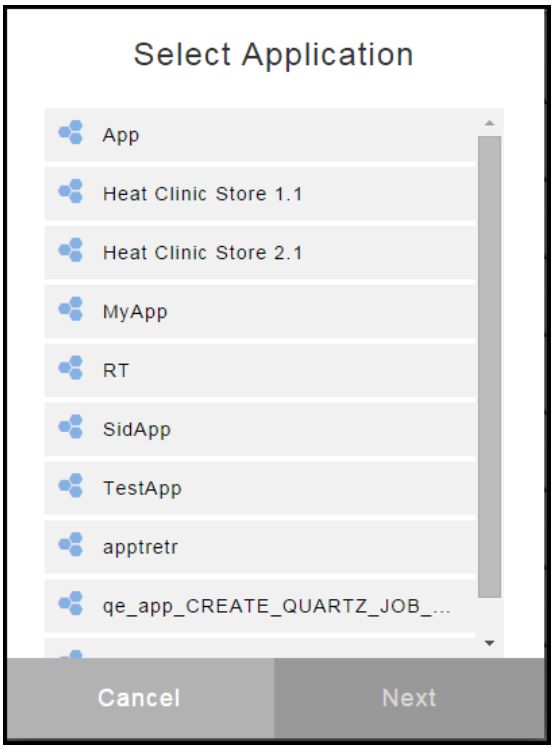
   a. Enter a name in the Name field.
   b. (Optional) Enter a description of the application in the Description field.
   c. Click **OK**.

4. Click **From application** and then **Next** to add an environment that will have the same number of tiers with the same names as the application you will select.

   The Select Application dialog box opens. In the example, the Heat Clinic Store 1.1 application has three tiers:

   - Apache Web
   - MySQL
   - Tomcat

   Example:



   a. Select an application and then click **Next**.

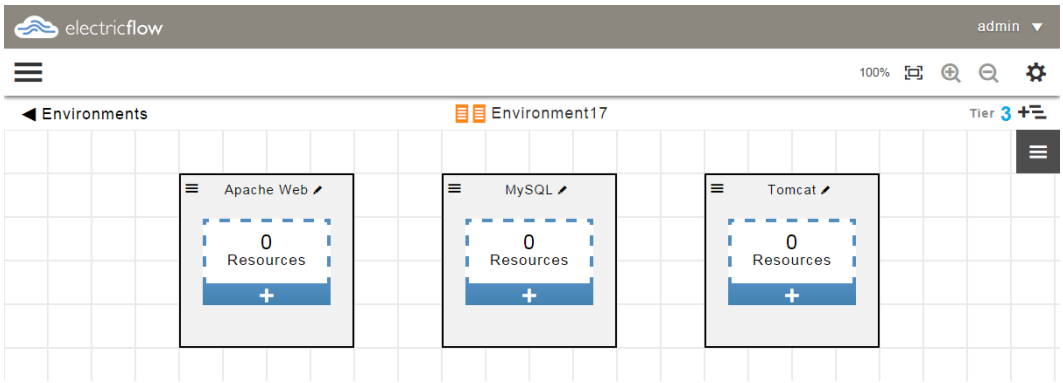
      The New Environment dialog box opens.

   b. Enter a name in the Name field. It must not match the name of another application in the project.
   c. (Optional) Enter a description of the application in the Description field.
   d. Click **OK**.

   For example, If you select Heat Clinic Store 1.1, the new environment has these three tiers:

   - Apache Web
   - MySQL
   - Tomcat

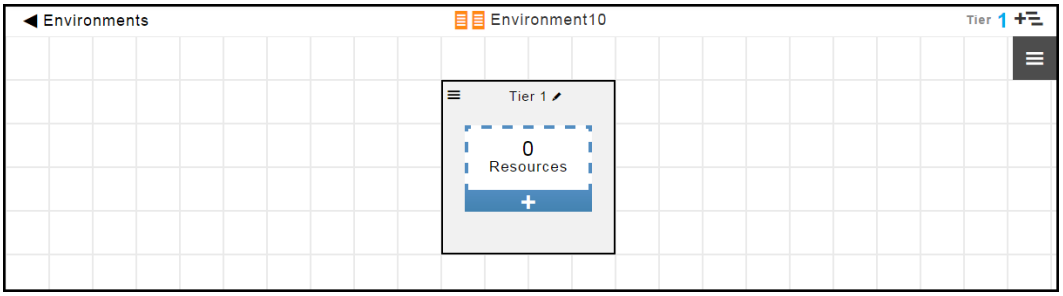
Example:



Assigning Resources to Environment Tiers

If you are designing a new environment, the Environments Designer has an application tier called Tier 1 with no resources.

Example:



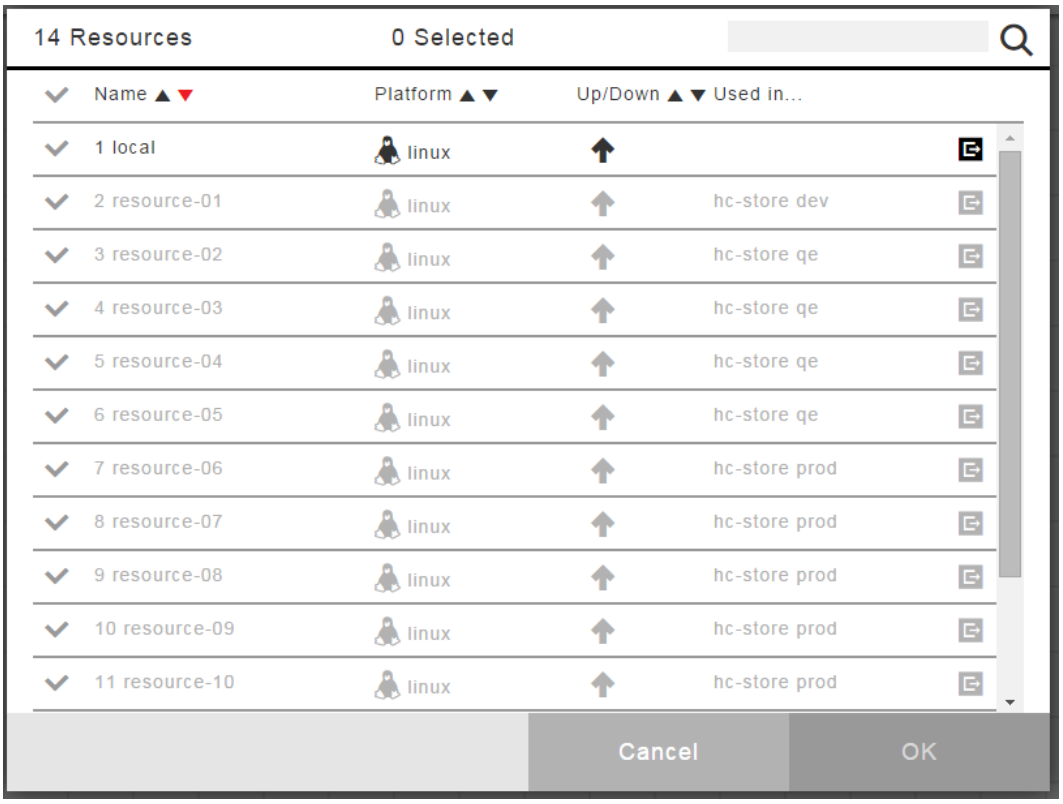
Starting in the Environments Designer:

1. Click the plus sign (+) in the new environment tier.

   The Resources List opens.

   In the example, there are 14 resources allocated to your system. You can select a resource that is not used in an environment. Resources that are already used in environments are dimmed, and you cannot select them.

   Example:

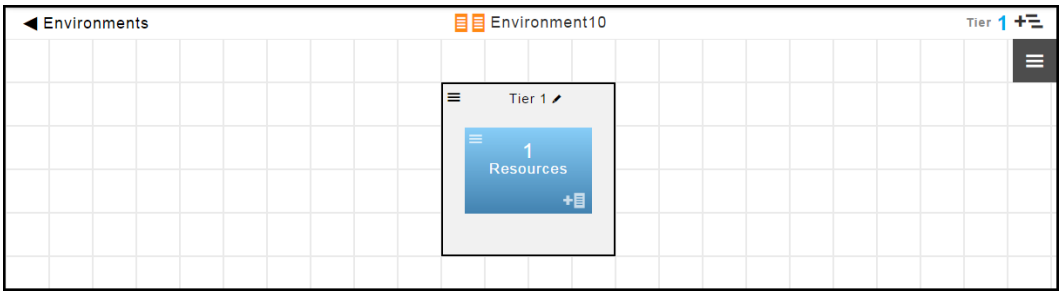


2. Select an available resource and click **OK**.

   The Environments Designer now shows that one resource is assigned to the tier.

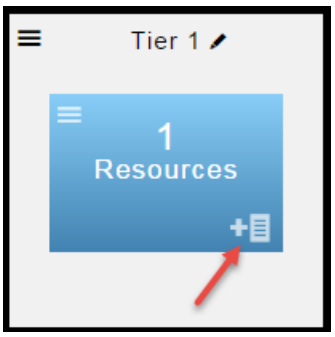
   In the example, one resource is assigned to Tier 1.

   Example:



3. Click the "Add Resource" icon in the tier to add another resource to it. See the previous icon.

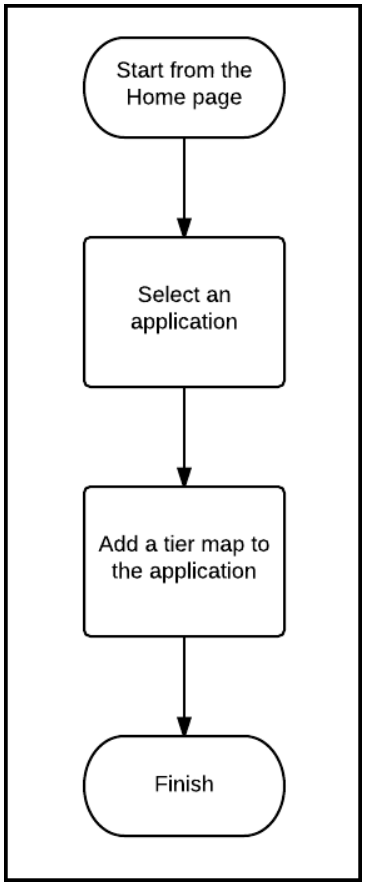
   Example:



   The Resource List opens.

4. Repeat the previous steps to assign a resource to the environment tier.

Making Tier Maps



Starting in the Home page:

1. Go to the Applications List.
2. Select the application that you want to run.

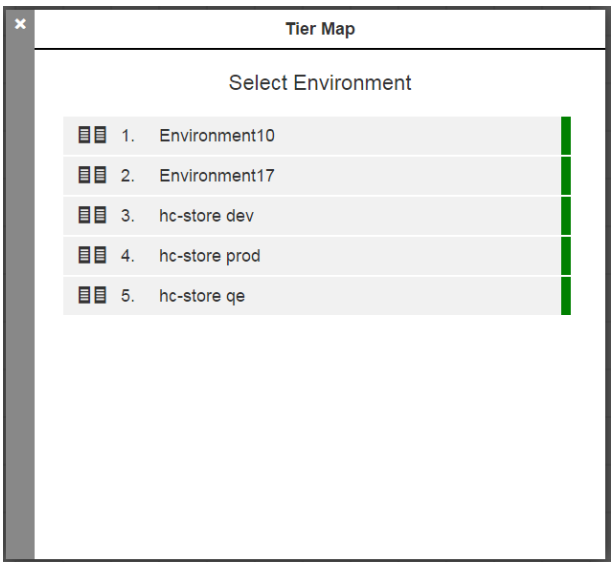
   The Applications Designer opens.
3. Click the " Add tier map" icon in the upper right corner.

   Example:

   The Tier Map dialog box opens.

4. Select an environment to which you want to map the application.

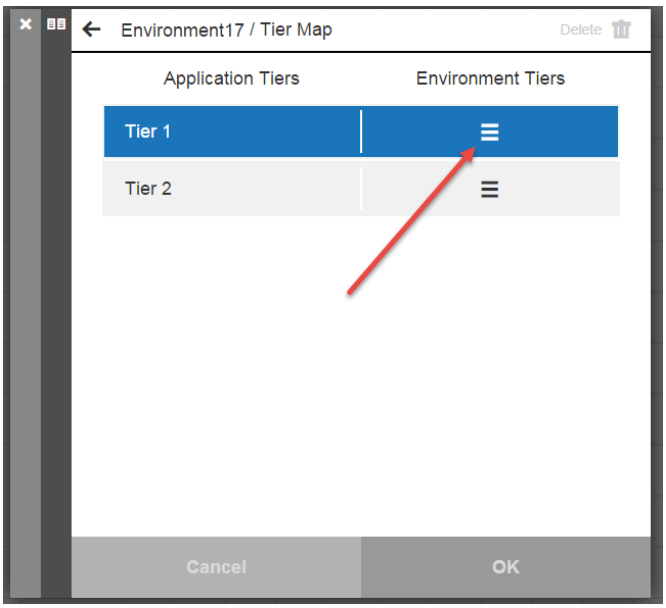
   Example:



   The <Environment Name>/Tier Map dialog box opens.

   In this example, Environment17 is selected.

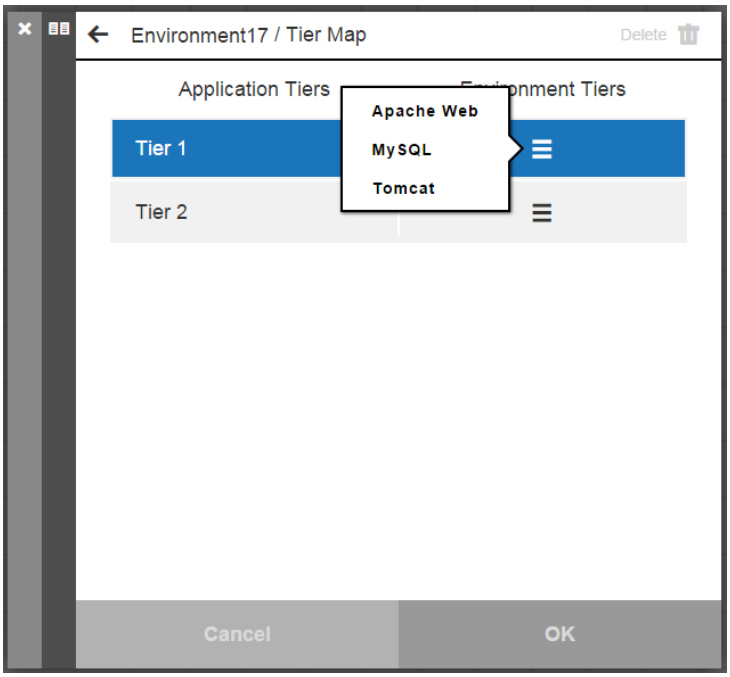
   Example:



5. Select an application tier, and click on the icon in the Environment Tiers column.

   A list of environment tiers in the environment that you selected appears.

   Example:

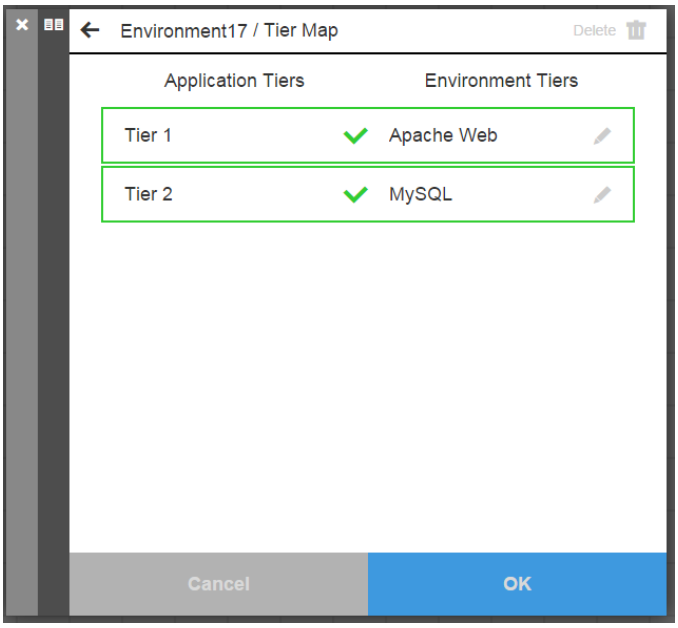


6. Select one of the tiers.
7. If an application has more than one tier, repeat the previous steps to map an application tier to an environment tier.

8. After you map all the application tiers to environment tiers, click **OK**.

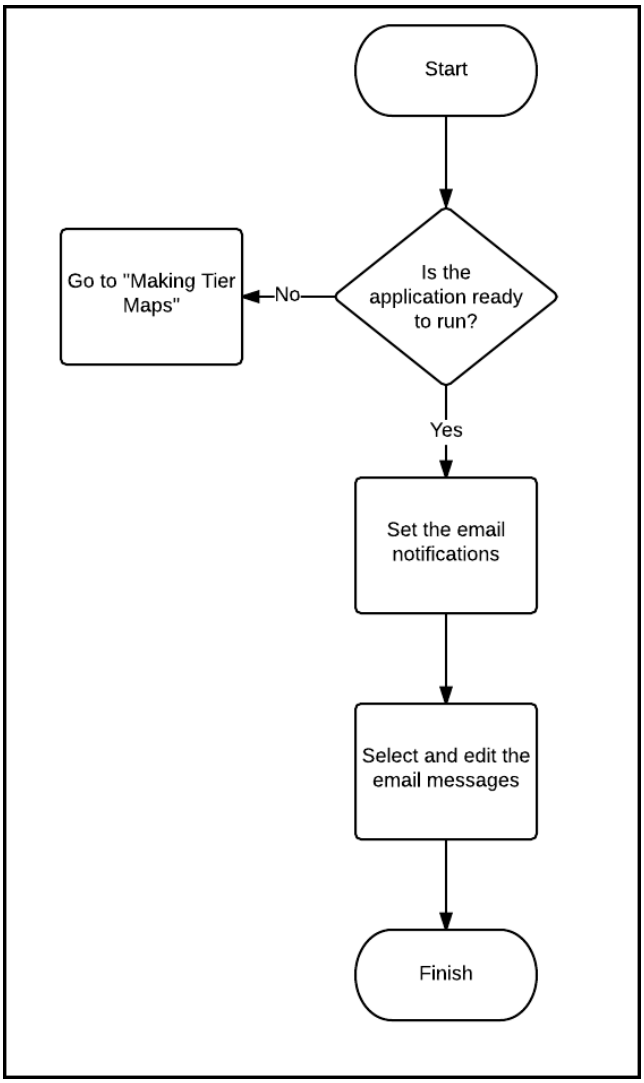
   In the example, application Tier 1 is mapped to the Apache Web tier, and application Tier 2 is mapped to the MySQL tier.

   Example:



To verify that the application is ready to run, go to the Applications List. When the Run Process button is green, you can run the application when you are ready.

Preparing to Run Applications



1. To verify that the application is ready to run, go to the Applications List.
2. Set the email notifications.
3. Select and edit the email message.

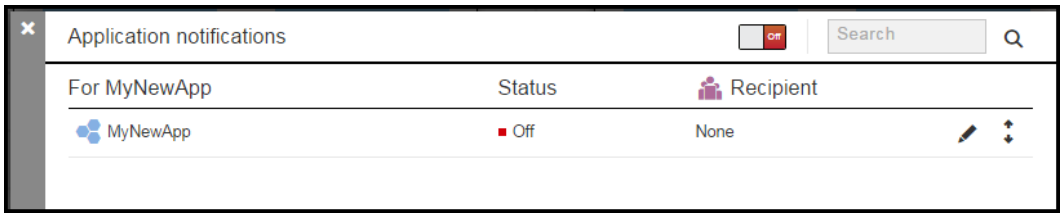
Related information:

- Setting Email Notifications
- Selecting and Editing Email Messages

Setting Email Notifications

Review these guidelines before setting notifications:

New email notifications are disabled in the application, its application processes, and the process steps before you configure them.



You configure notifications in the "Application notifications / edit wizard."

IMPORTANT: The first time that you set notifications in this wizard, the Notifications toggle changes to **On**. After you enter notification settings and click **OK**, email notifications are enabled at that level.

Go to the "Application Notifications Wizard" section for information about how to use the "Application notifications" and "Application notifications /edit" wizards.

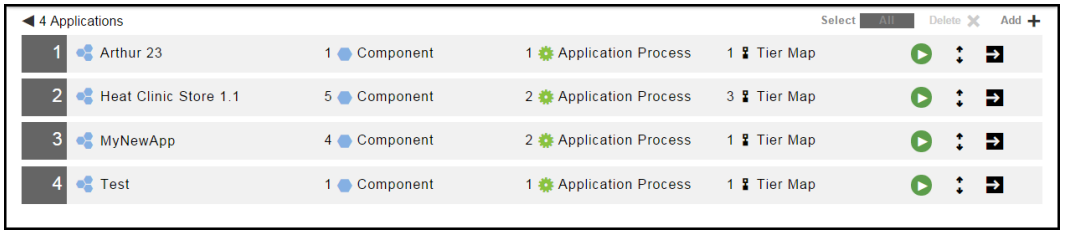
By default, the application expects that the user creates an email configuration called "default." The email configuration defaults to the server property `/server/ec_deploy/ec_defaultEmailConfiguration`, which is set to 'default'.

If you want to use a different name for the email configuration, change the value of `/server/ec_deploy/ec_defaultEmailConfiguration` to the new email configuration name.

Starting from the Home page, to set email notifications:

1. Go to the Applications List.

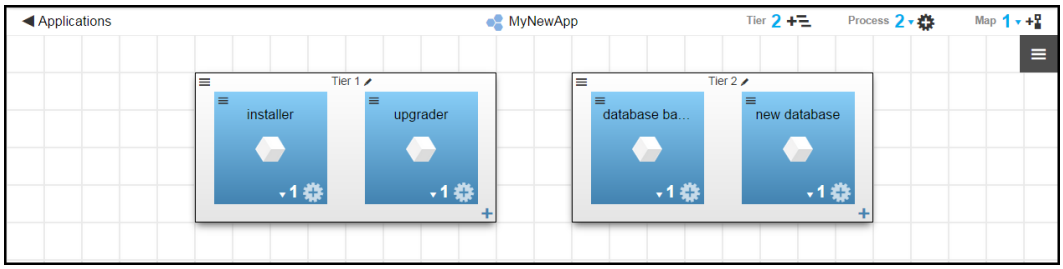
   Example:



2. Select an application.

   The Applications Designer opens.

   Example:

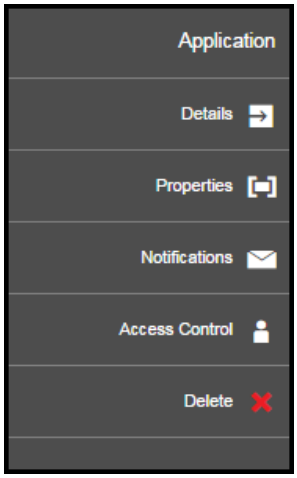


3. Click the Applications menu icon.

   Example:

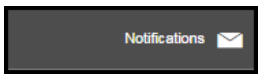
   The Applications menu opens.

   Example:



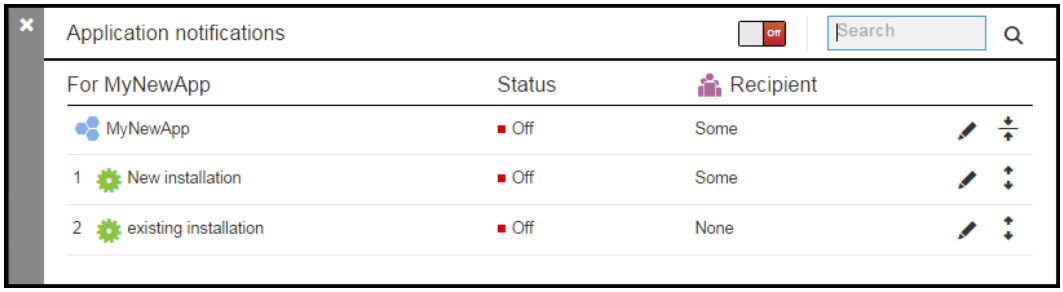
4. Click **Notifications** to add a new application.

   Example:



   The Application notification wizard opens.

   Example:



5. Configure email notifications for the application, an application process, or a process step.

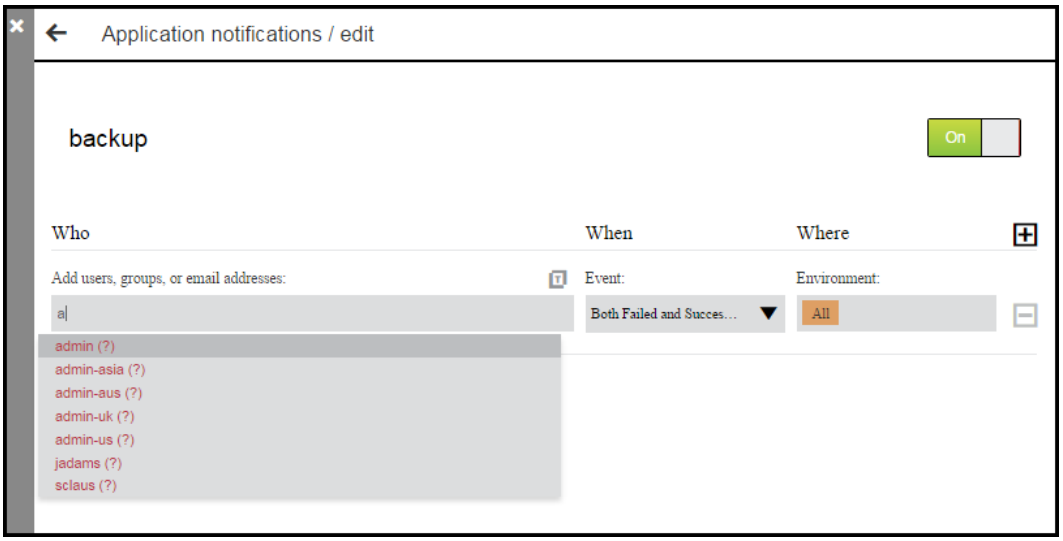
   You can configure one or more notifications in an application process or other object.

   ### *Configuring recipients*

   In the **Who** field, you add users or groups who are configured and managed in the ElectricCommander platform or email addresses.

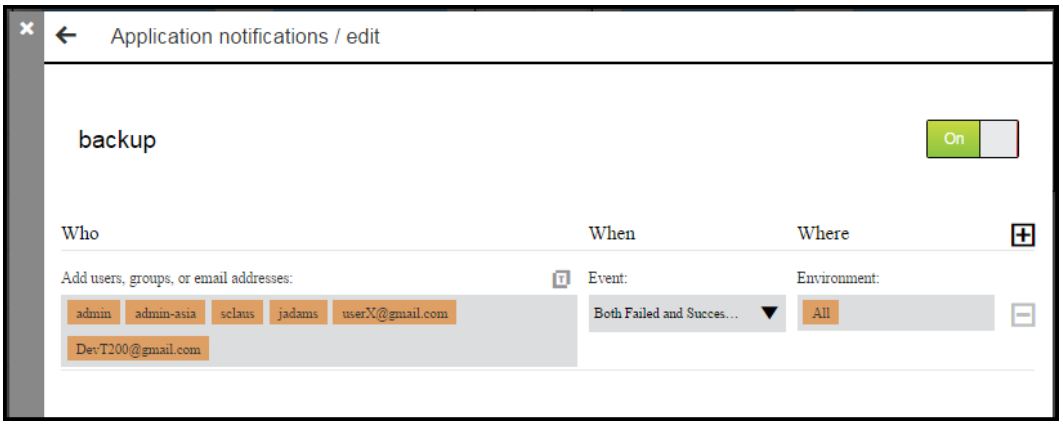
   When you start typing a user name, group name, or email addresses, a list of names or email addresses appear that match what you are typing.

   Example:



   If one of the suggestions matches the name or email address, select it, or continue typing. You can add more than one name or email address.

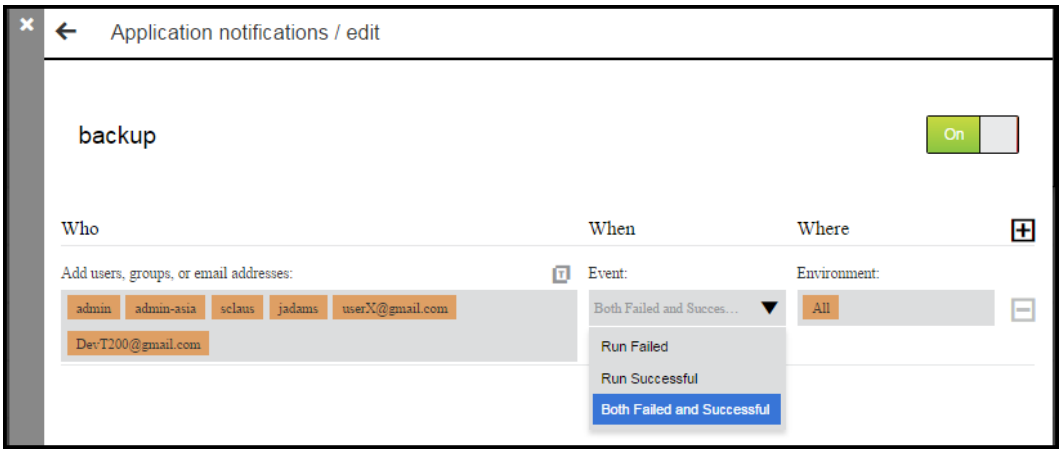
   Example:



Configuring the event that triggers the notification

In the **When** field, you select the event that triggers a notification to be sent to the recipients in the **Who** field. The default is **Both Failed and Successful**. Click in the **When** field to select the event for the notification.

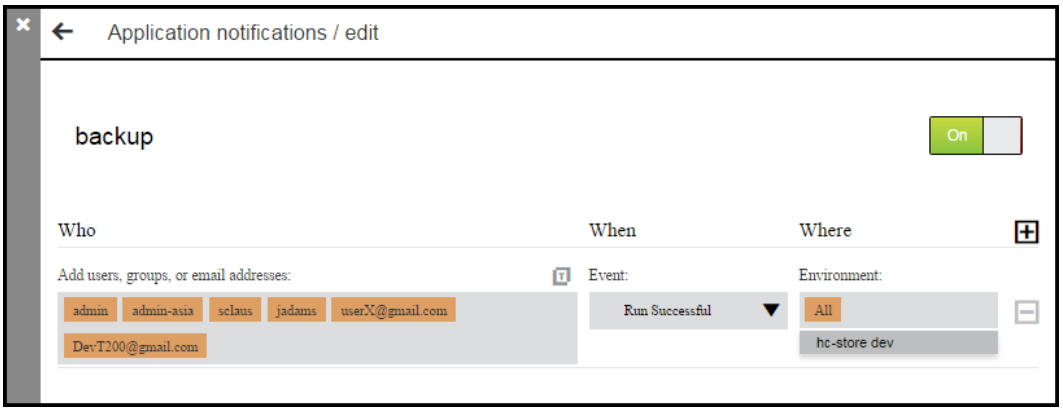
Example:



Configuring the environments where the notification applies

In the **Where** field, you select the environments to which the notifications apply. Click in the **Where** field to select the environments, which are the environments to which the application is mapped in the tier map.

Example:



6. Select and edit the email notification message.

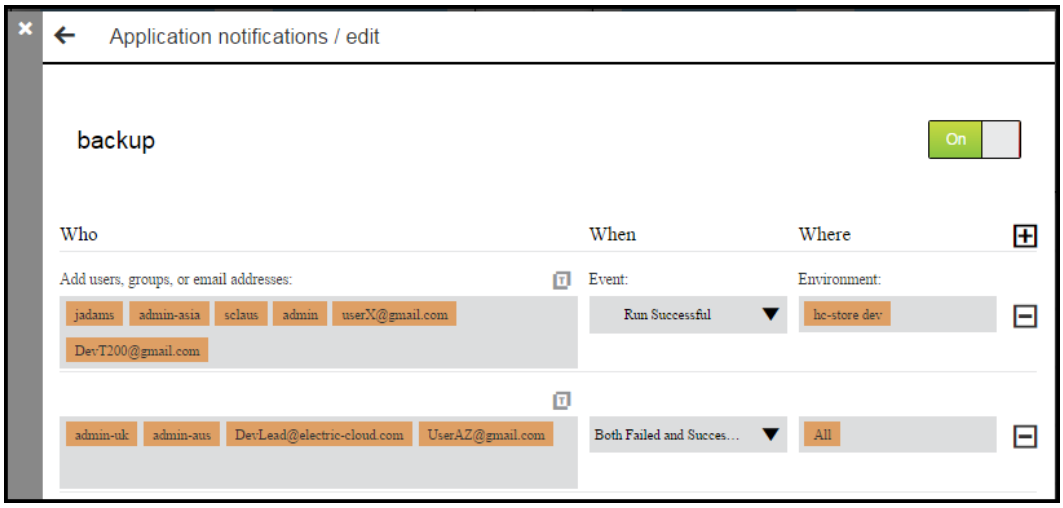
7. Add another notification for the the application, an application process, or a process step.

   Click the Add Notifications icon to add a new notification.

   Example:

   After you have added your email notifications, click **OK** to save the settings and return to the Application notifications wizard.

   Example:



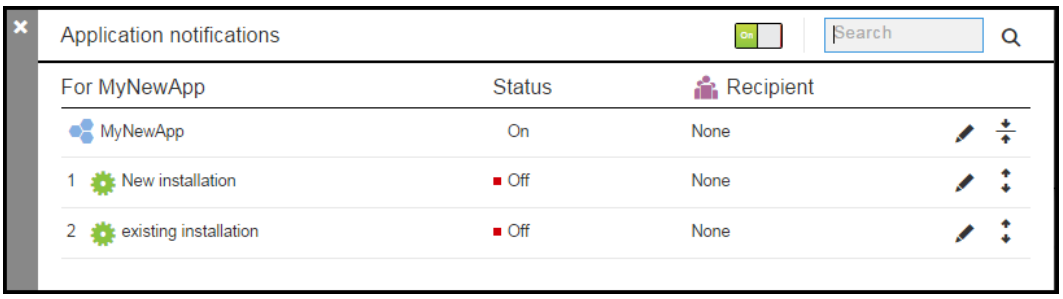
8. (Optional) Enable email notifications for the application, application processes, or process steps that are not already enabled.

   To enable email notifications at the application level:

   - Click the Notifications toggle and change it to **On**.

     The status of the application changes to **On**.

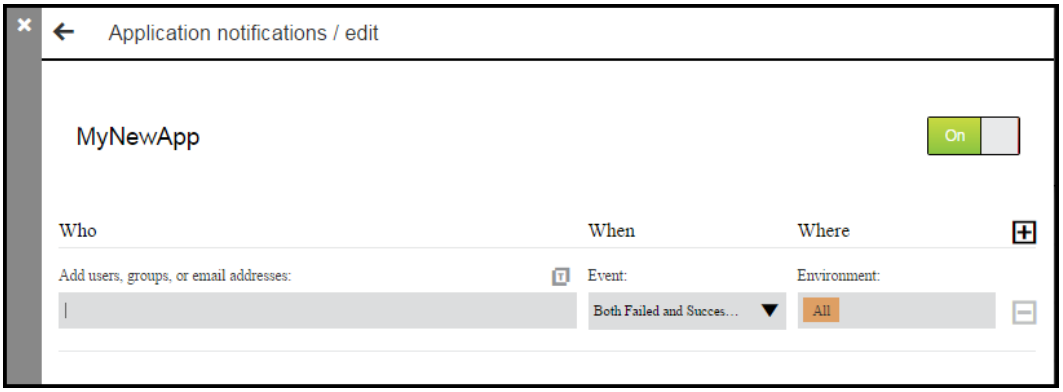
     Example:



   - Click the edit icon to open the "Application notifications / edit" wizard.

     The Application notifications / edit wizard appears. The Notification toggle changes to **On**.

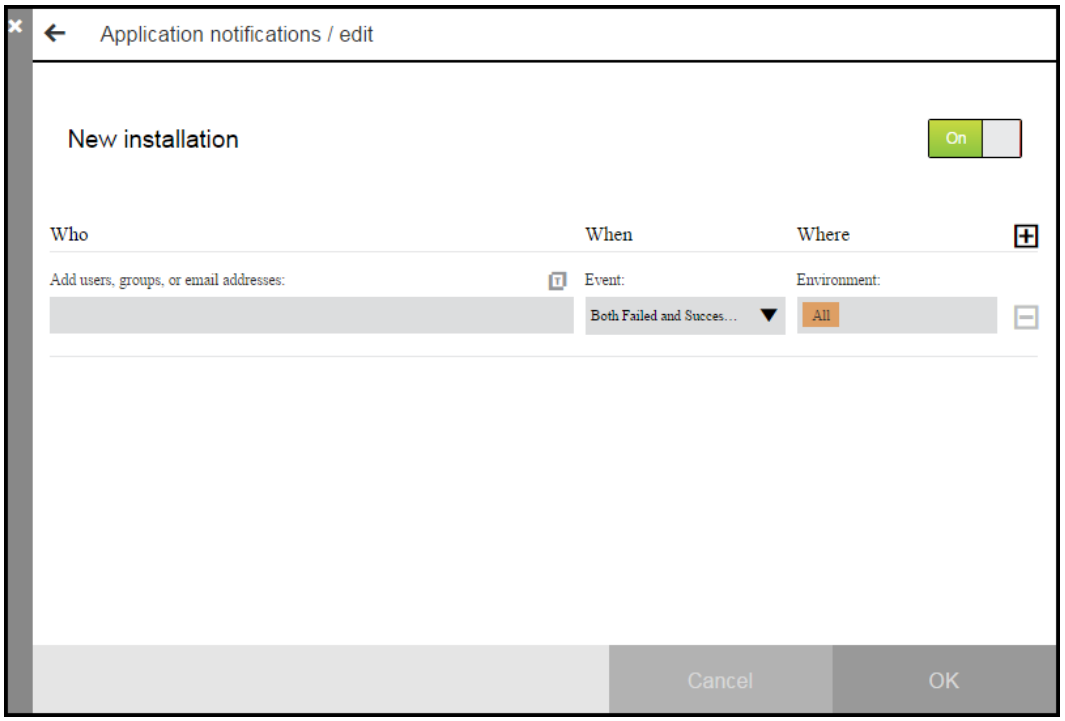
     Example:



   To enable notifications at the application process and process step levels, go to the "Application Notifications / edit" wizard for the specific process or process step.

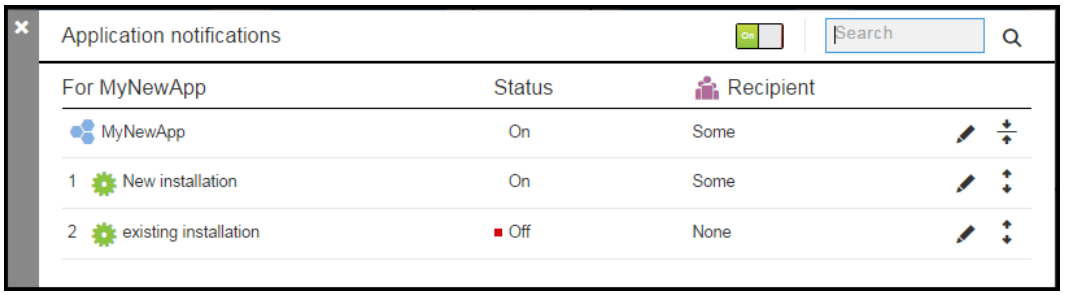
   The wizard opens, and the Notifications toggle is now **On**.

   Example:



When you enter notification settings in the wizard and click **OK**, the settings are saved. The Application notifications wizard appears and now shows that the application process status is **On**.

Example:



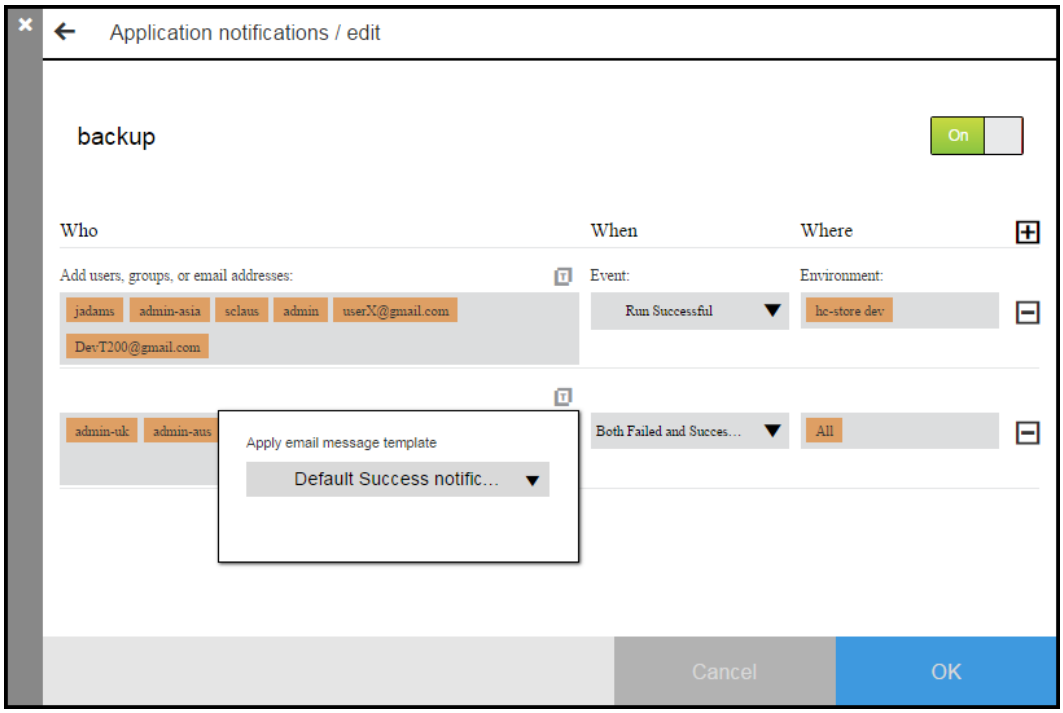
Selecting and Editing Email Messages

Starting in the "Application notifications / edit" wizard:

1. Click the email message template icon.

   A drop-down box opens.

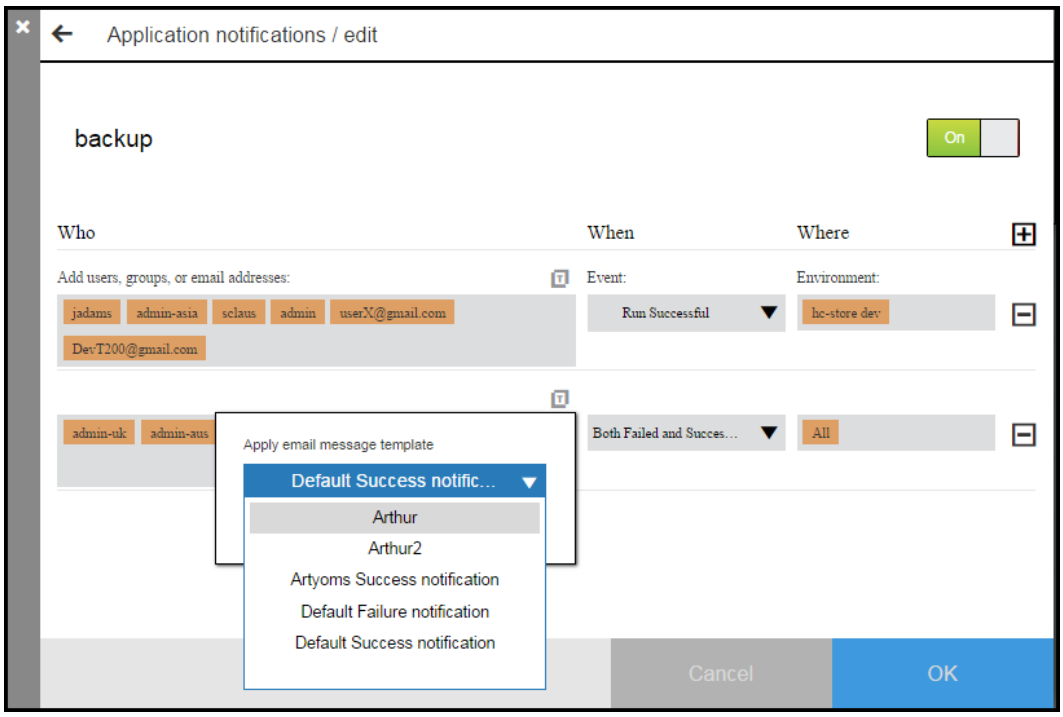
   Example:



2. Click the down arrow to open the list of email message templates that can apply to the application.

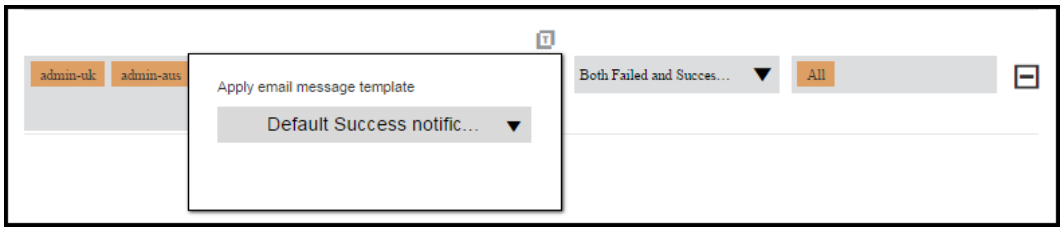
3. Select a template.

   Example:



   If the template is the current template applied to notification, the name of the template appears in dialog box.

   Example:



   If the template is not the current template, the **Apply** and **Edit** buttons appear in the dialog box.

   Example:

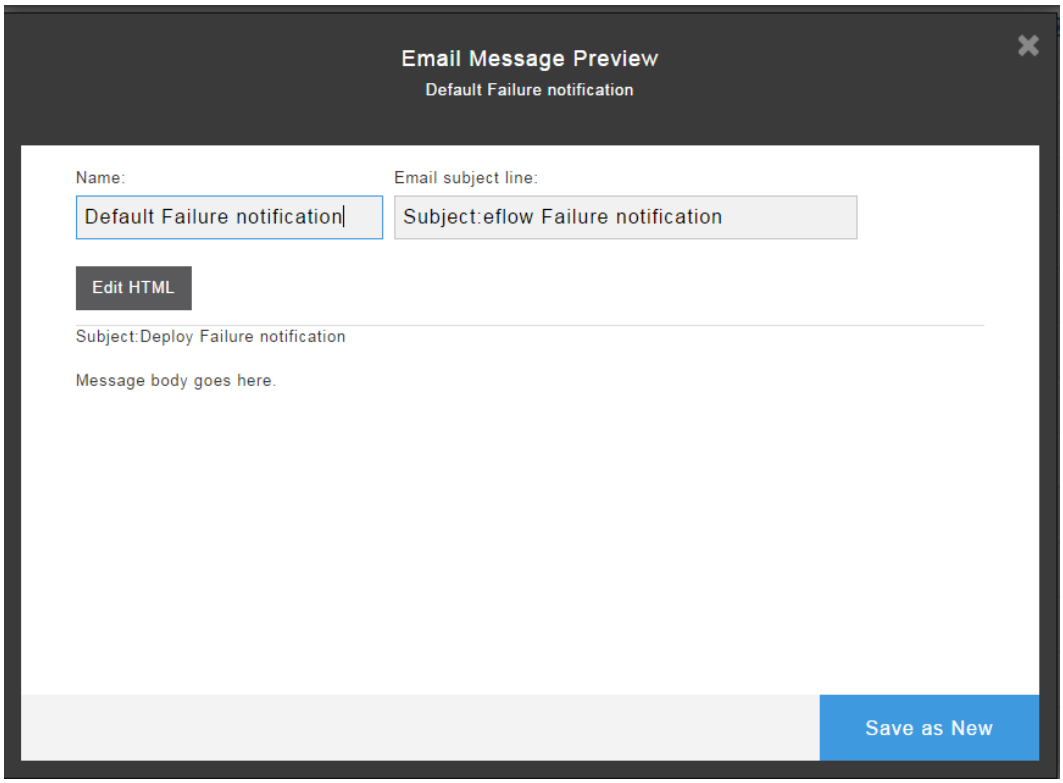
4. If you want to use the template that you selected instead of the current one and do not want to change it, skip the remaining steps in this task.
5. If you want to apply a different template or edit the template that you selected, do the remaining steps in this task.

   If you click **Apply** to use the template as is, skip the remaining steps.

   If you click **Edit** to modify the template to fit your needs, go to the next step.

   The Email Message Preview dialog box appears.

   Example:



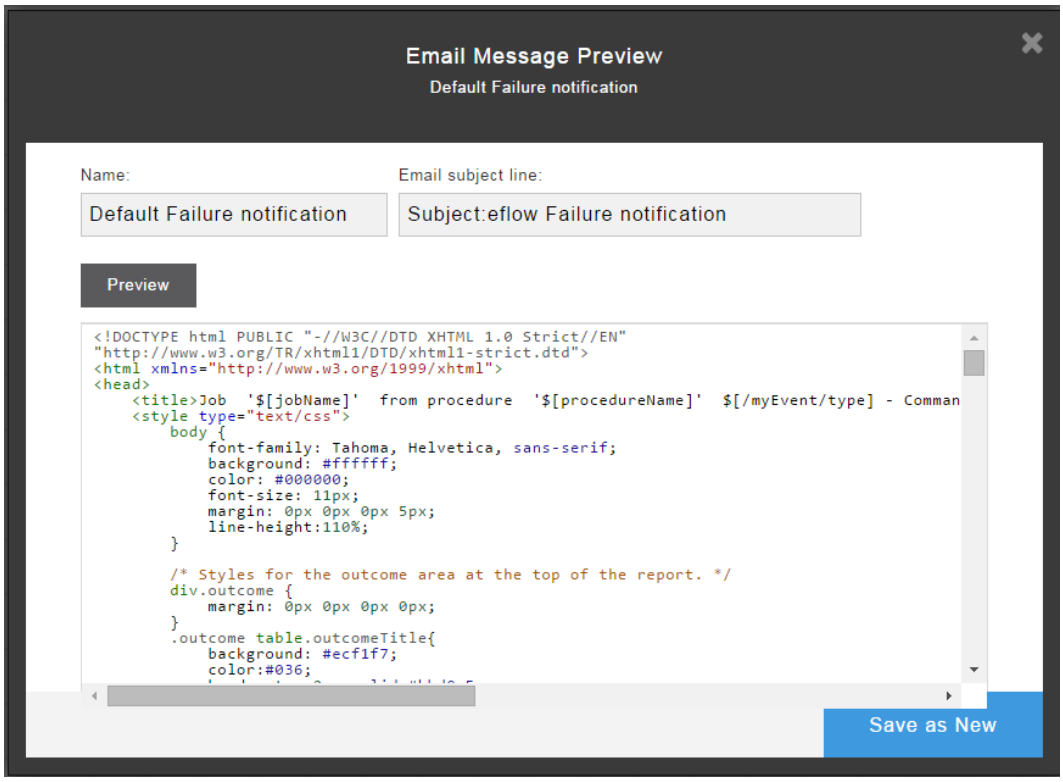
6. To edit the template:

   Change the name of the template in the **Name** field.

   Change the subject of the email in the **Email subject line**.

   To modify the body of the email message, click **Edit HTML** and edit the HTML code.

   Example:



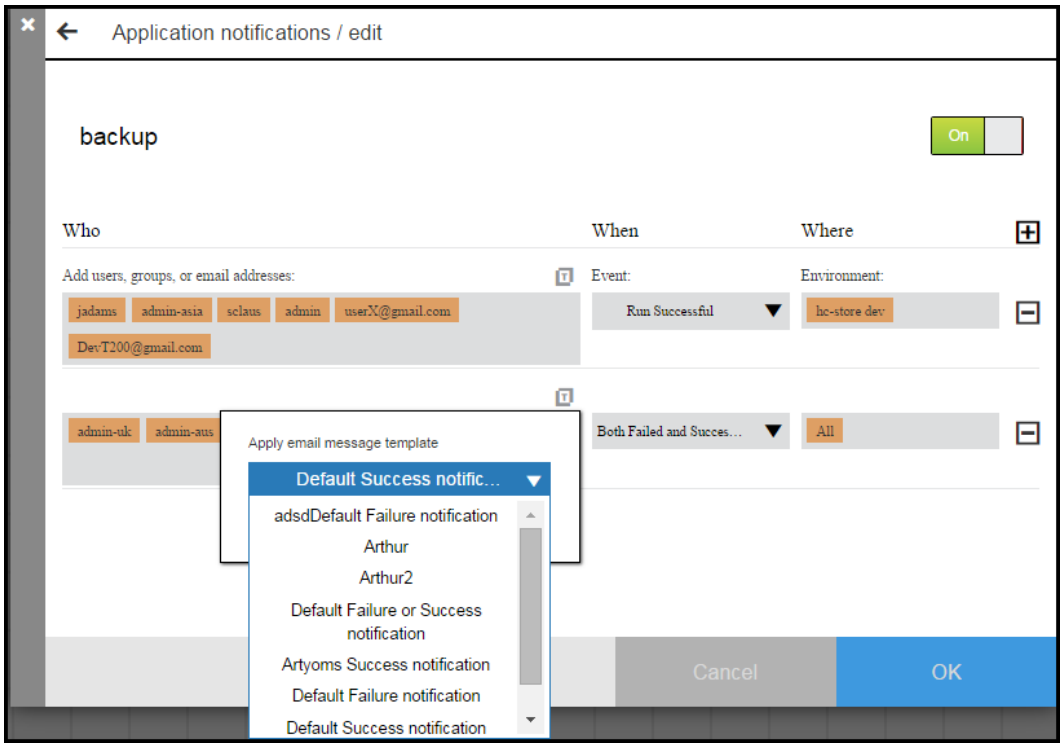
7. Click **Preview**.
8. To save your changes:
   - Click **Save Changes** to save the change in an existing template
   - Click **Save as New** to save the template as a new template.

   The "Application notifications / edit" wizard re-appears.

9. Click the down arrow to open the list of email message templates that can apply to the application.

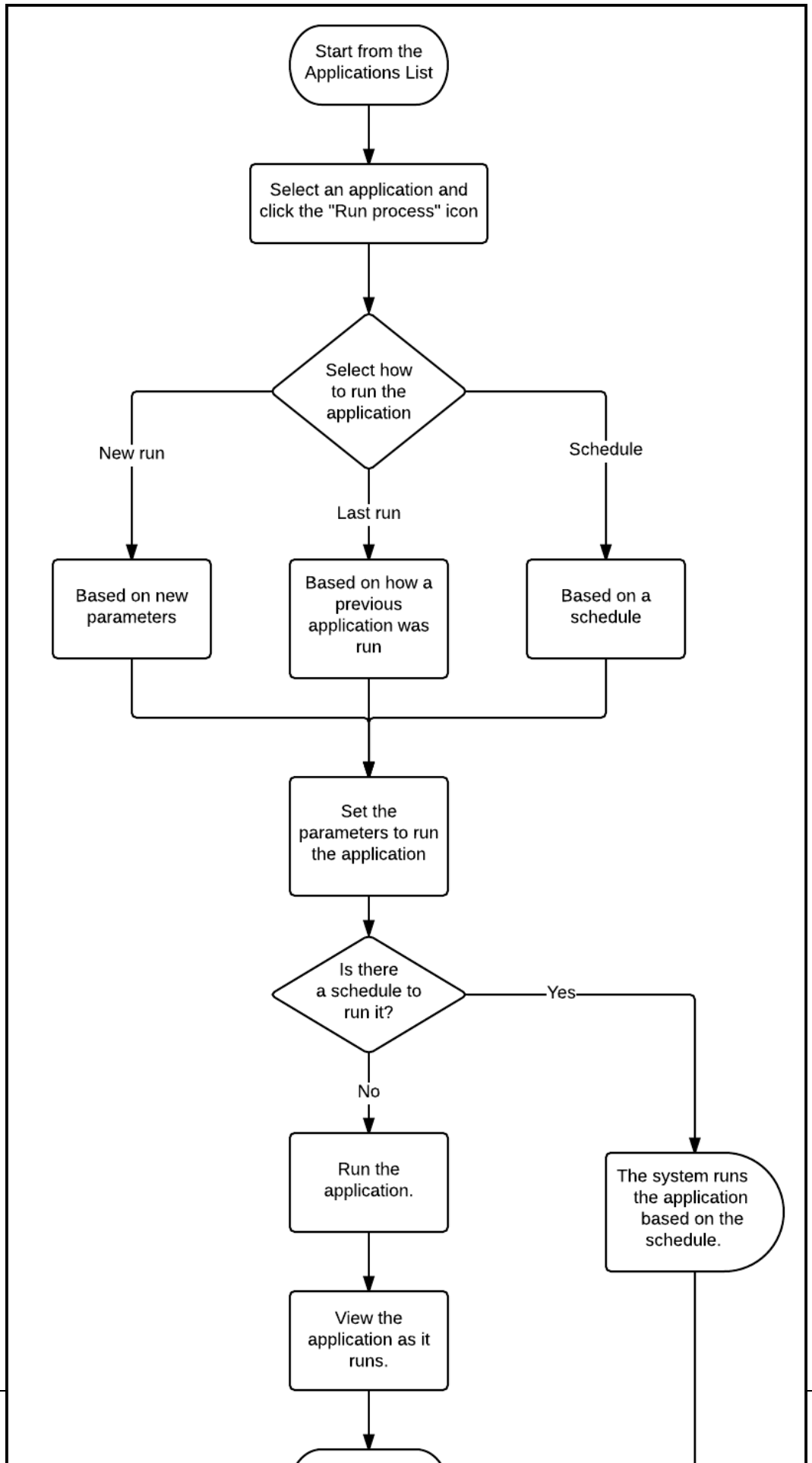
   The new email message template is in the list.

   Example:



10. Click **OK** to save the settings.

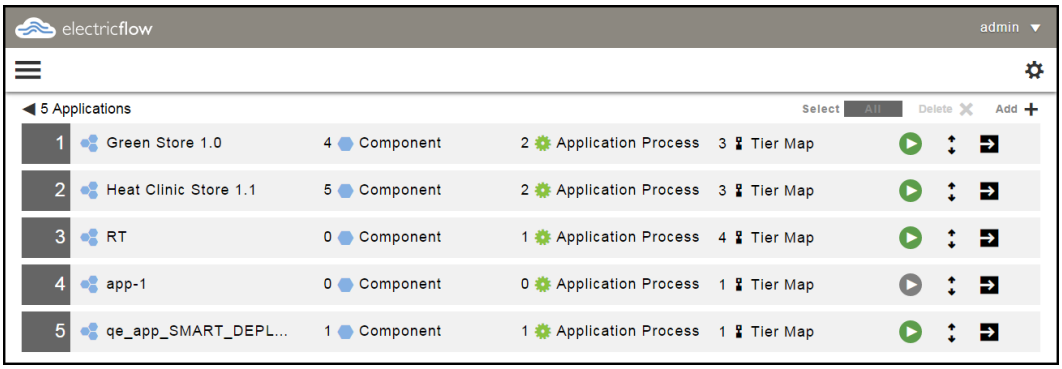
Running Applications


Start from the Applications List
Select an application and click the "Run process" icon
Select how to run the application
New run
Last run
Schedule
Based on new parameters
Based on how a previous application was run
Based on a schedule
Set the parameters to run the application
Is there a schedule to run it?
Yes
No
Run the application.
The system runs the application based on the schedule.
View the application as it runs.

Starting in the Home page:

1. Go to the Applications List.

   Example:

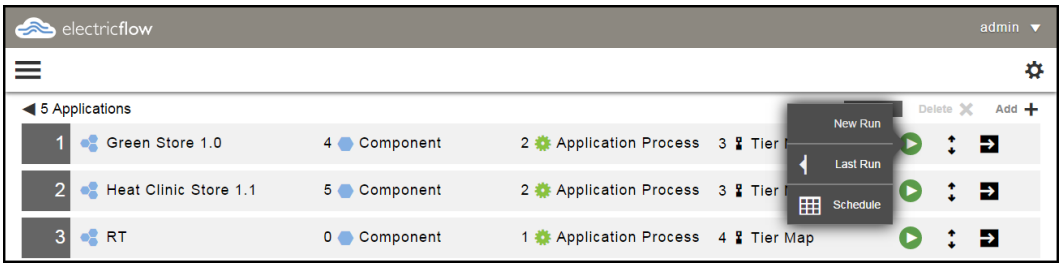


2. Select an application and click the "Run process" icon.

   A menu appears.

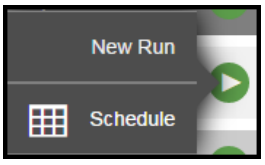
   If this is the first time that you are running the application, only the New Run and Schedule options appear.

   Example:



   If this is the first time that you are running the application, the menu has only the **New Run** and **Schedule** options.

   Example:



3. To specify how you want to run the application, select one of these options:

   New run–Set the parameters.

   Last run–Use the parameters from a previous run. You can modify one or more of these parameters.

   Schedule–Set the application to run on a schedule.

   To see how these options work, go to one of the following sections:

   - Running Applications with New Parameters
   - Running Applications with Parameters from Previous Runs
   - Running Applications with Schedules

You can view the results in the Application Inventory and the Environment Inventory.

Related topics:

- Different Ways to Run Applications
- Viewing Results and Troubleshooting

Running Applications with New Parameters

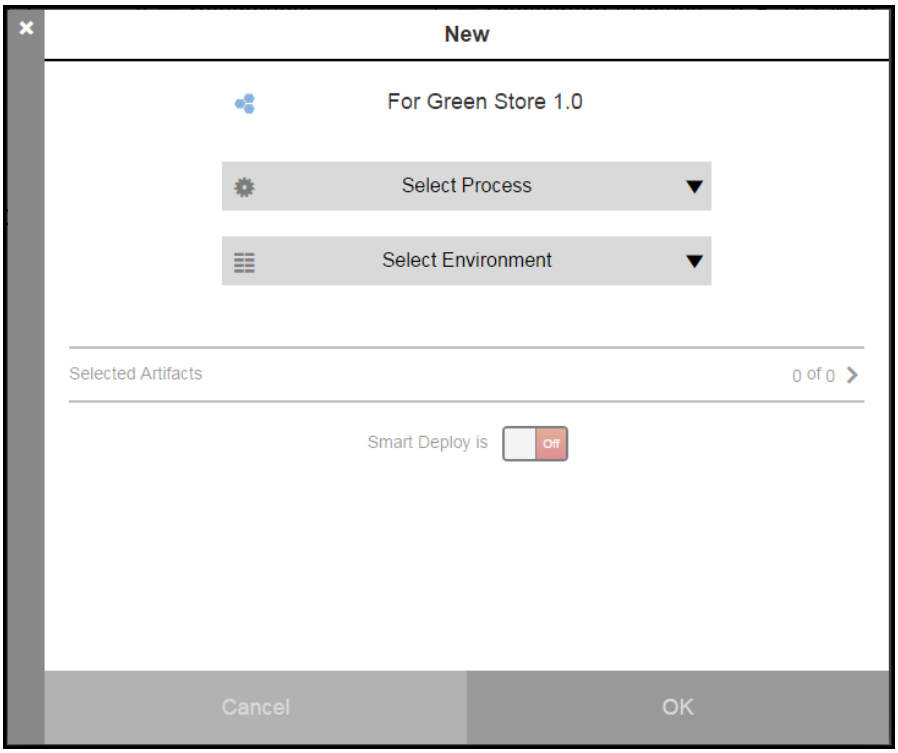
When you use the **New Run** option, you select new parameters when you run the application.

To select the parameters:

1. Select **New Run** in the menu that appears when you click the "Run process" icon in the Applications List.

   The wizard to set the parameters for running the application opens.

   Example:



2. Select the application process.

3. Select an environment.

   Note: If this is the first time that you are running the application, smart deploy is not enabled.

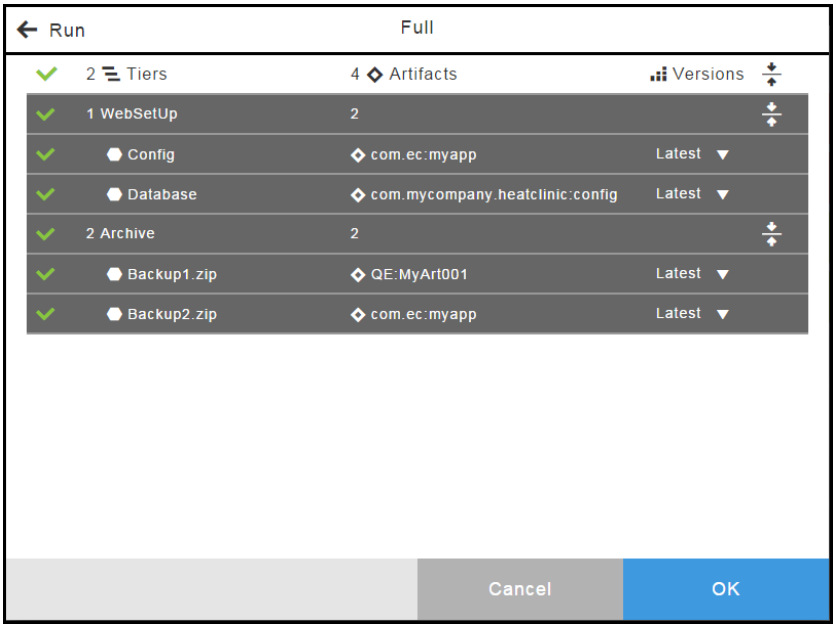
   Example:

4. To select and configure the **Full Run** option, click **Full Run**, and then click **OK**.

   A dialog box opens showing the objects in the application.

   This example shows that all of the objects, application tiers, components, and artifacts, are selected.

   Example:



5. To select and configure the **Partial Run** option:

    a. Click **Full Run**.

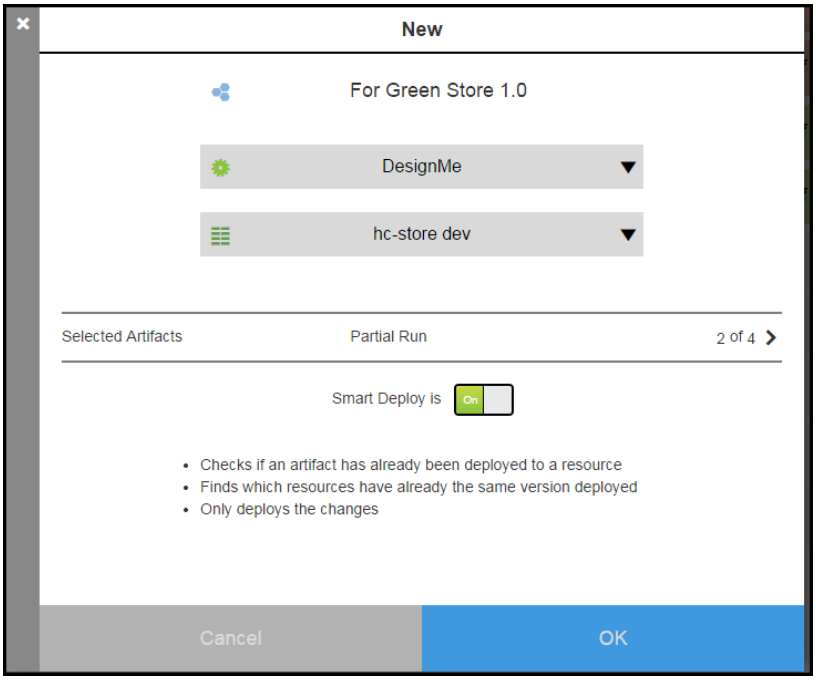
    A dialog box opens showing the objects in the application.

    b. Determine the objects in the application that you do not want to run, and click the each row to remove them from the run.

    c. Click **OK**.

    The wizard now shows that the Partial Run option is selected and that only two of four artifacts in application will run.

    Example:

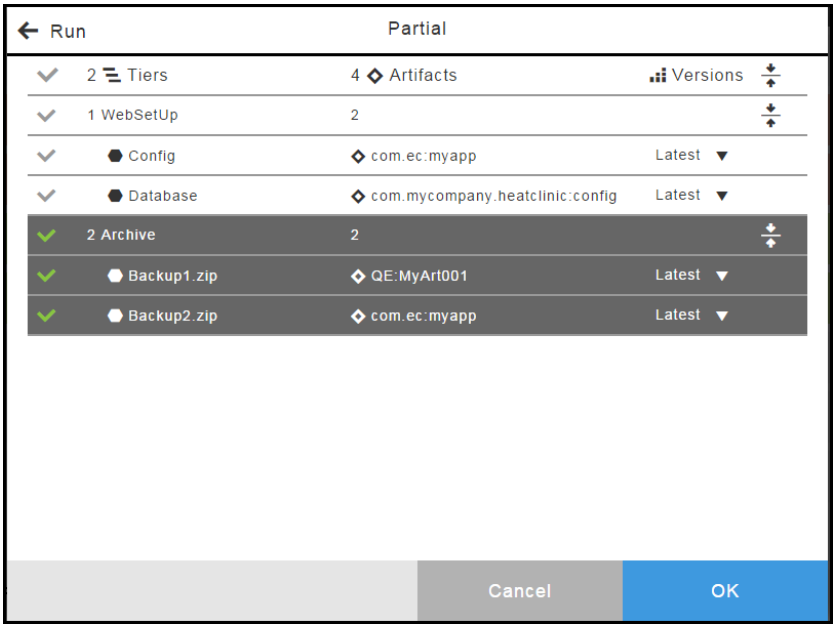


6. To select artifacts with specific versions:

   a. Click **Selected Artifacts**.

      A dialog box opens showing the objects in the application. The version of each component is in the Version column. The current version of all the components is *Latest*.

      Example:



   b. To change the version of a component, click the down arrow next to current version.

      A drop-down menu appears.

   c. Select the version that you want the application to run.

d. Click **OK**.

The wizard re-appears.

Example:

7. Click **OK** to run the application.

   Example:

You can view the results in the Application Inventory and the Environment Inventory.

Related information:

- Different Ways to Run Applications
- Running Applications
- Viewing Results and Troubleshooting

Running Applications with Parameters from Previous Runs

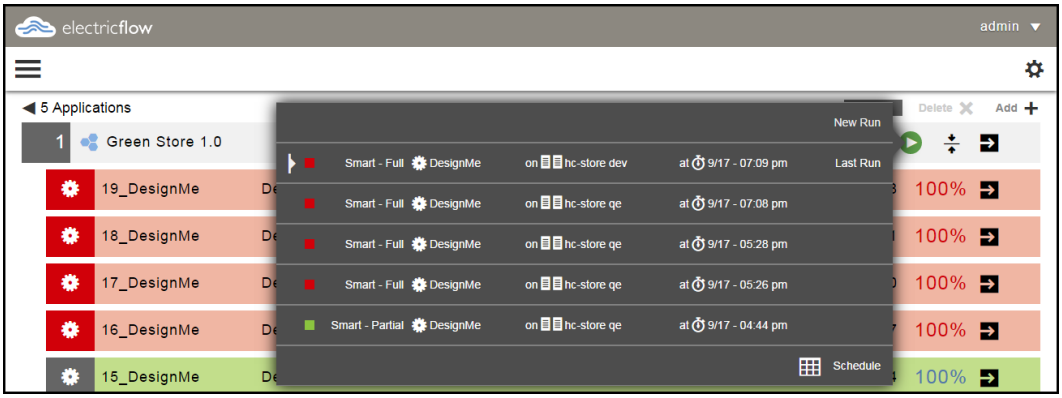
When you use the **Last Run** option, you configure how to run the application based on parameters from a previous run.

To select the parameters:

1. Select **Last Run** in the menu that appears when you click the "Run process" icon in the Applications List.
2. Select a previous run.

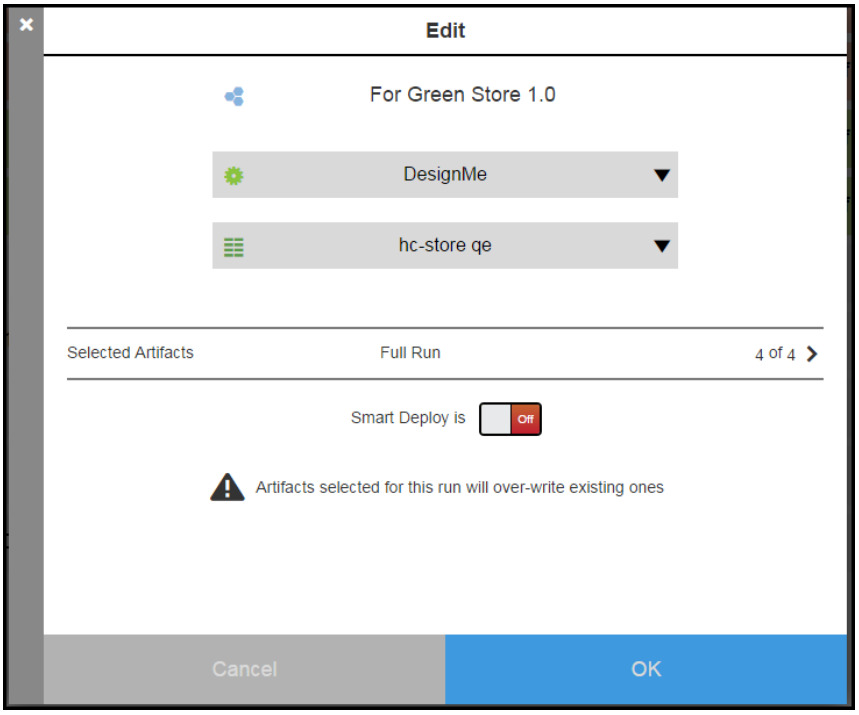
   For example, select the Smart - Full DesignMe application run at 7:09 pm.

   Example:



   The wizard to set the parameters for running the application opens.

   Example:

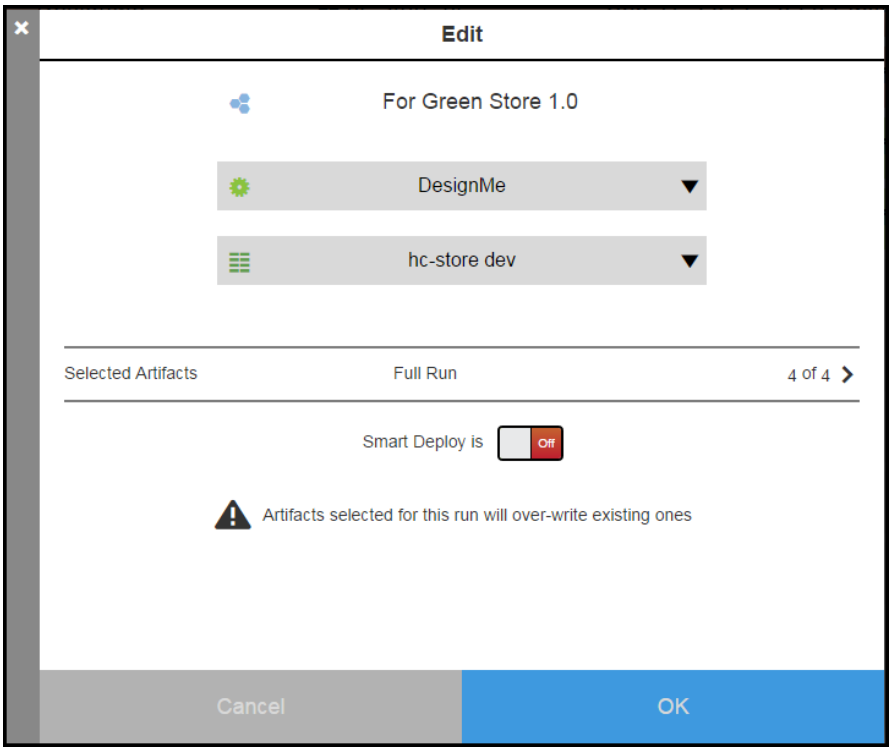


3. Select the application process.

4. Select an environment.

   If this is the first time that you are running the application, smart deploy is not enabled.

   Example:



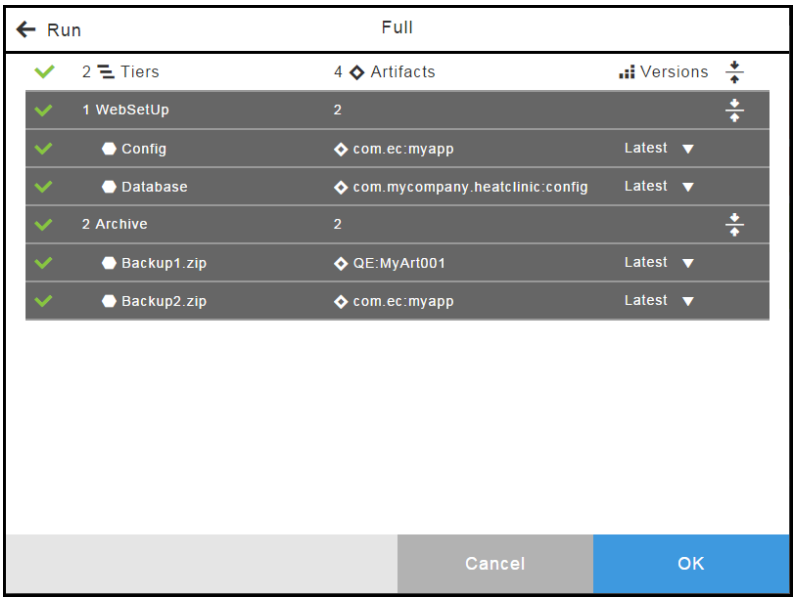
5. To select and configure the **Full Run** option:

    a. Click **Full Run**.

    A dialog box opens showing the objects in the application.

    This example shows that all of the objects, application tiers, components, and artifacts, are selected.

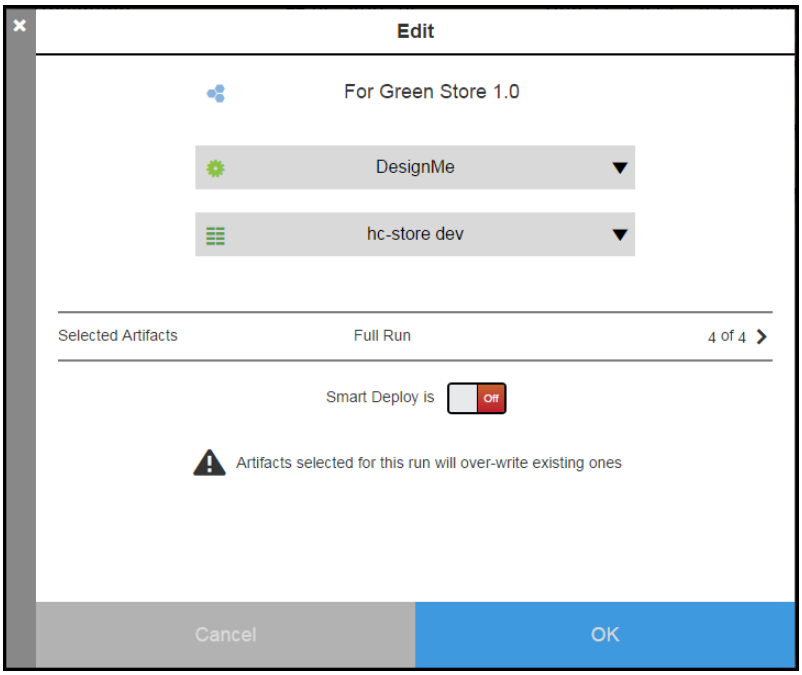
    Example:



b. Click **OK**.

The wizard re-appears.

Example:



6. To select and configure the **Partial Run** option:

   a. Click **Full Run**.

   A dialog box opens showing the objects in the application.

   b. Determine the objects in the application that you do not want to run and click the each row to remove them from the run.

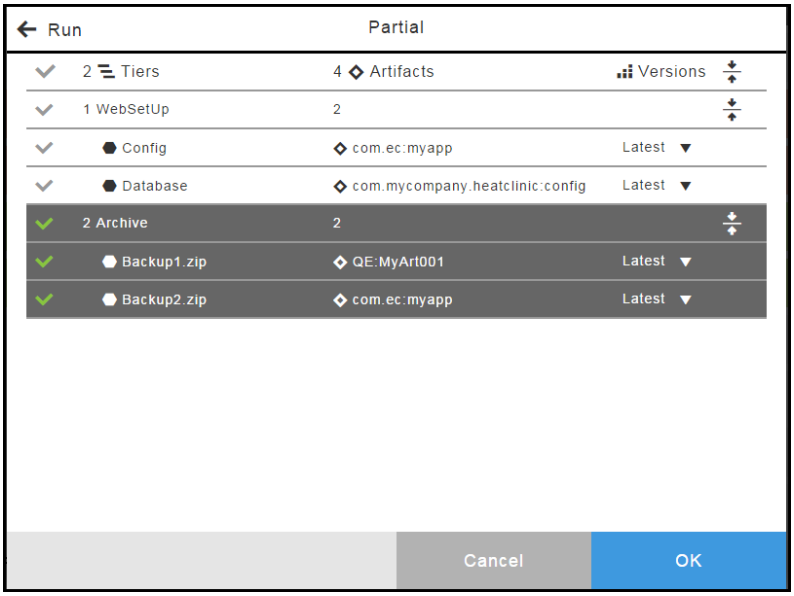
   c. Click **OK**.

7. To select artifacts with specific versions:

   a. Click **Selected Artifacts**.

      A dialog box opens showing the objects in the application. The version of each component is in the Version column. The current version of all the components is *Latest*, the latest version of the component.

      Example:



   b. To change the version of a component, click the down arrow next to current version.

      A drop-down menu appears.

   c. Select the version that you want the application to run.

   d. Click **OK**.

      The wizard re-appears.

8. Click **OK** to run the application.

   Example:

You can view the results in the Application Inventory and the Environment Inventory.

Related information:

- Different Ways to Run Applications
- Running Applications
- Viewing Results and Troubleshooting

Running Applications with Schedules

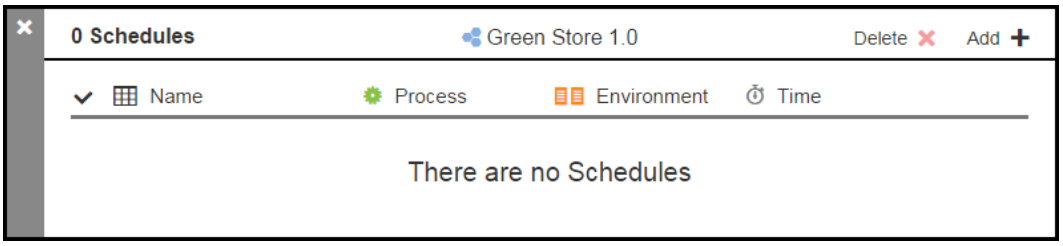
When you use the **Schedule** option, you set the day and time when the application runs.

To set the schedule:

1. Select **Schedule** in the menu that appears when you click the "Run process" icon in the Applications List.

   The Schedule dialog box opens.

   Example:

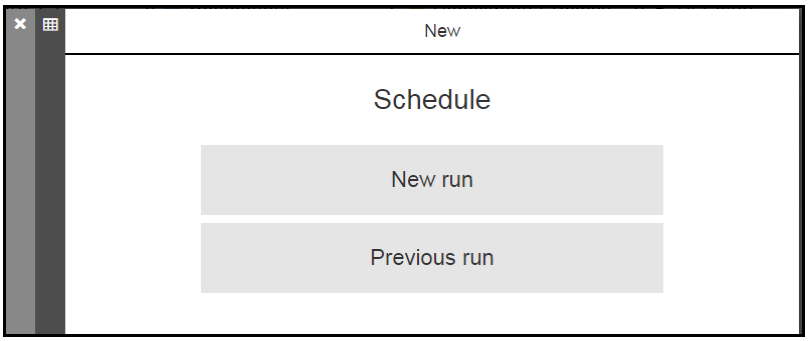


a. Click the Add icon in the upper right corner.

   Example:

   The New Schedule wizard appears.

   Example:



b. Select **New run** or **Previous run**.

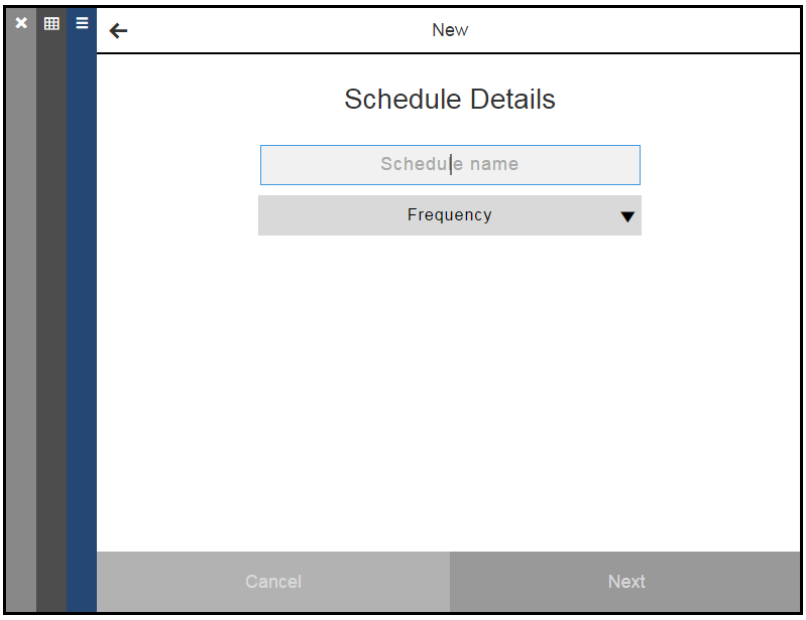
   If this is the first time that you are running the application, select **New run** and go to the appropriate next step.

   If you select **Previous Run**, go to the appropriate next step.

c. Select **New run**.

The New Schedule Details wizard opens. The New Schedule Details dialog box opens.

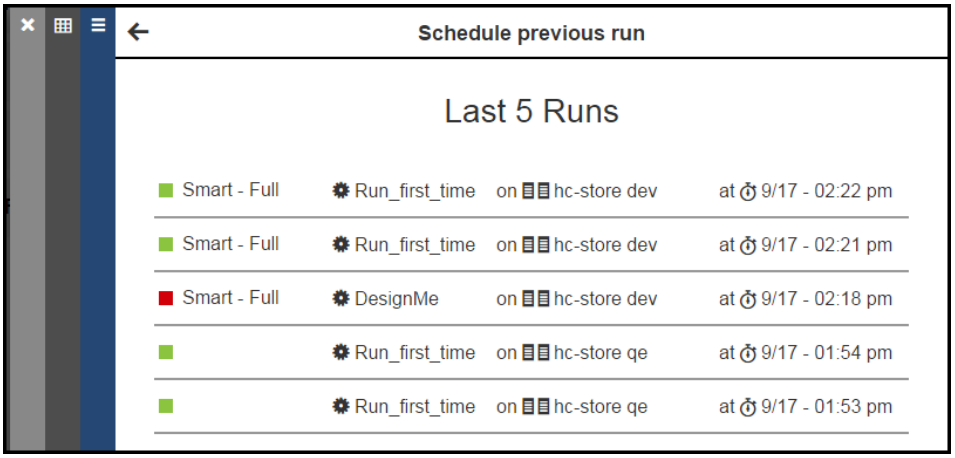
Example:



d. Select **Previous run**, and then select a run in the "Schedule previous run" wizard.

The "Schedule previous run" wizard has information about the last five runs.

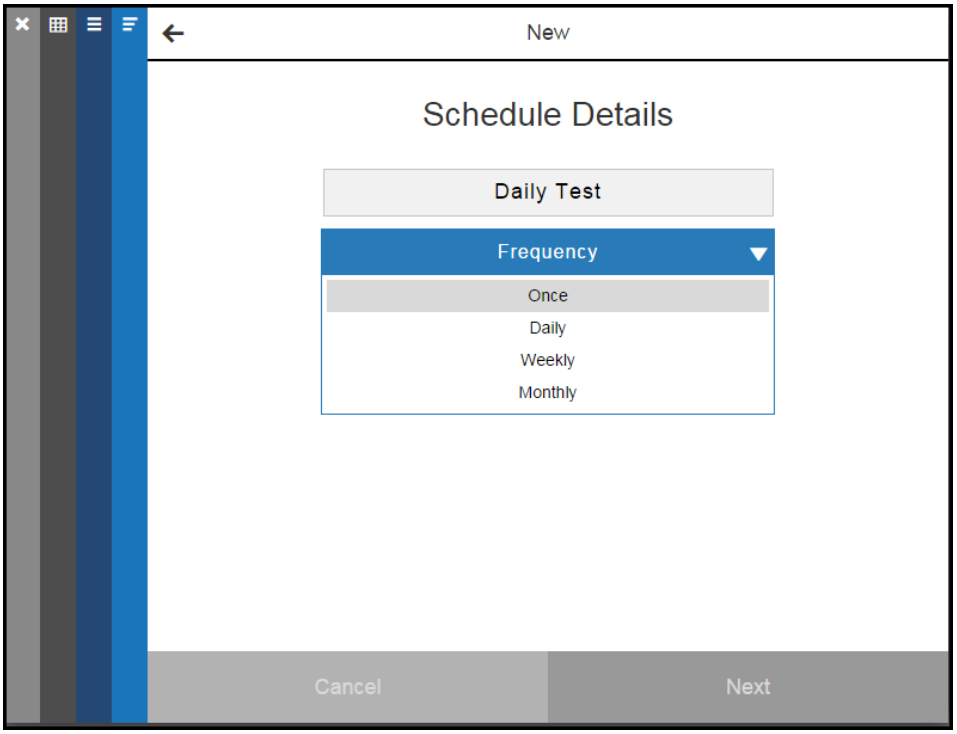
Example:



The New Schedule Details wizard opens.

e. Enter the schedule name and click in the **Frequency** field to set how often the application runs in the **Frequency** field.

Example:

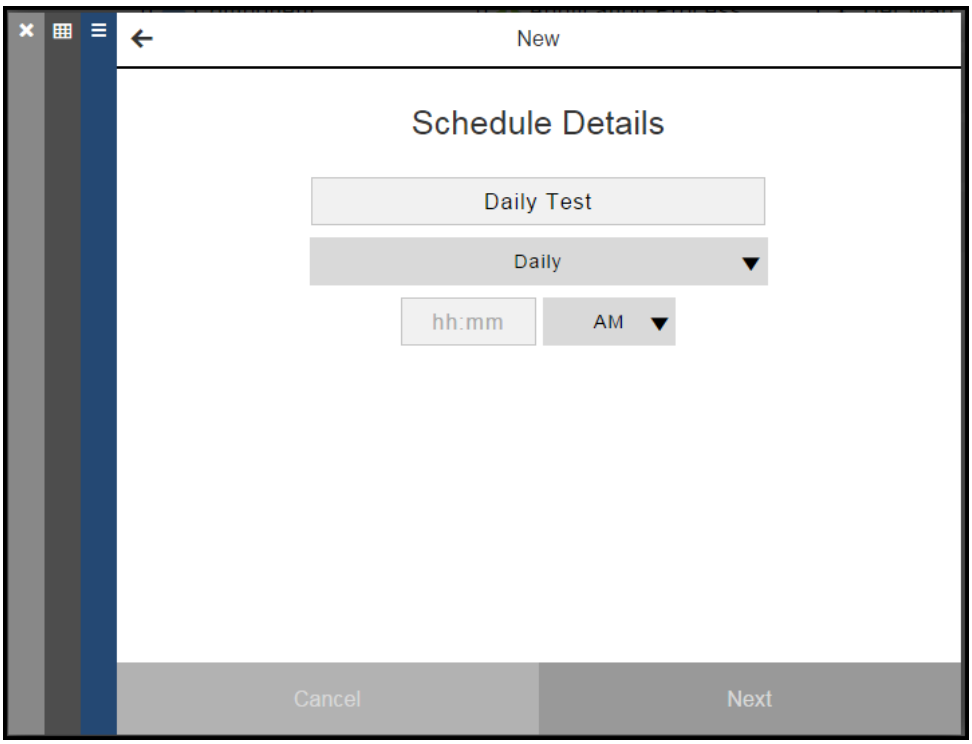


Depending on the frequency that you select, different fields appear.

- **Once**–Enter information in the date (Month, Day, and Year) and the time (hours, minutes, and **AM** or **PM**) fields.
- **Daily**–Enter only the time (hours, minutes, and **AM** or **PM**).
- **Weekly**–Enter the **Day of week** (Monday to Sunday) and the time (hours, minutes, and **AM** or **PM**).
- **Monthly**–Enter the **Day** and the time (hours, minutes, and **AM** or **PM**).

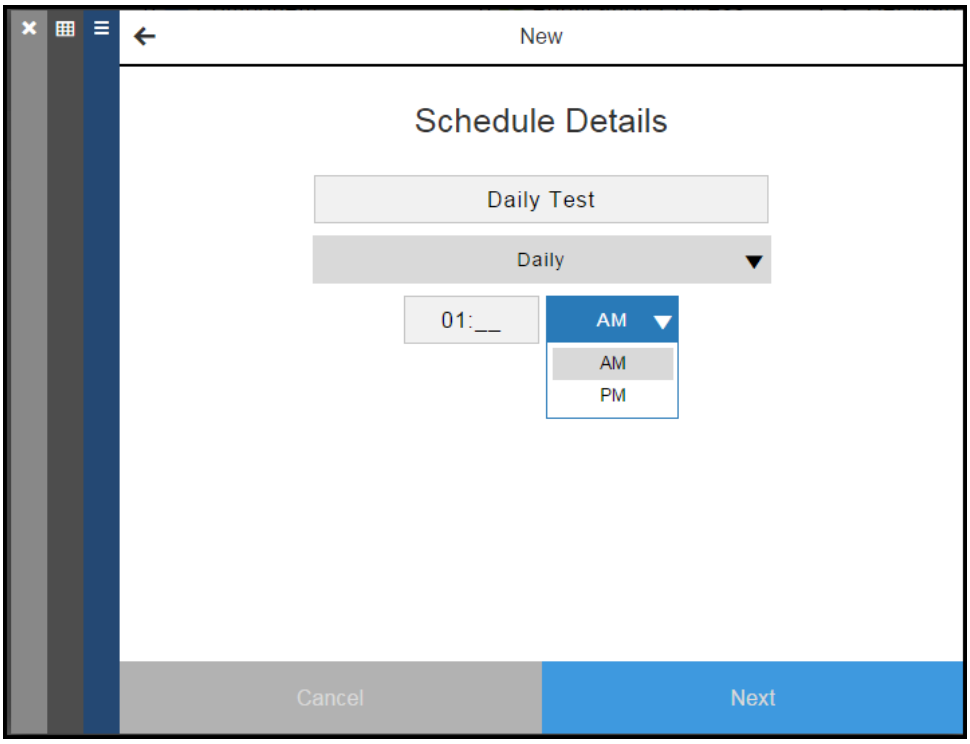
f. Enter the appropriate information in the fields below the **Frequency** field.

Example:



For example, if you select **Daily**, set the time (hours, minutes, and **AM** or **PM**). In the time fields, click in it and enter the hours and minutes and then select **AM** or **PM**.

Example:



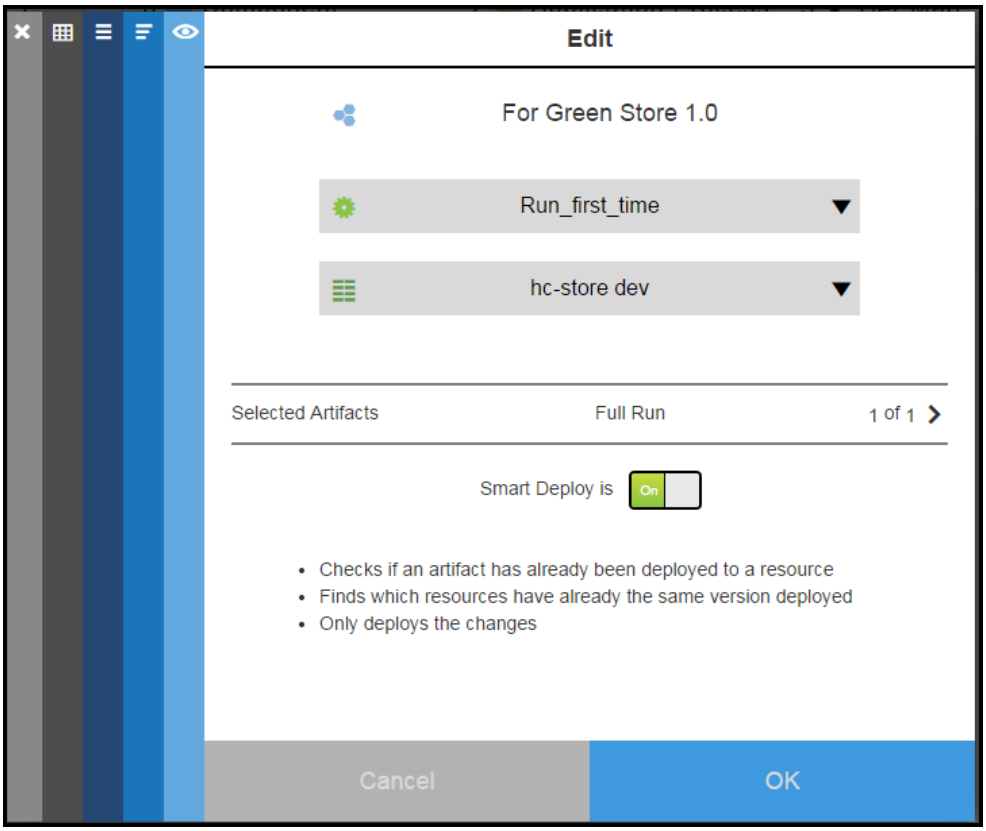
g. Click **Next**. The wizard to set the parameters for running the application opens.

2. Select an application process.

3. Select an environment.

   If this is the first time that you are running the application, smart deploy is not enabled.

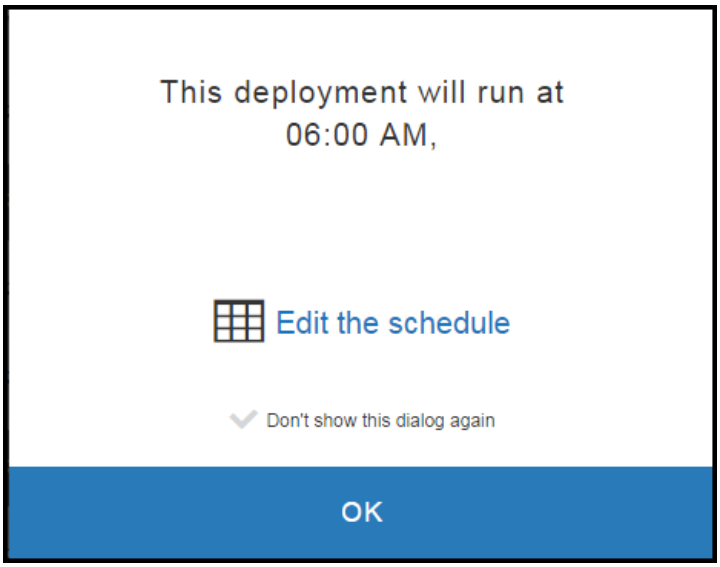
   Example:



4. Click **OK**.

   A message appears about when the application is run according to the schedule.

   Example:



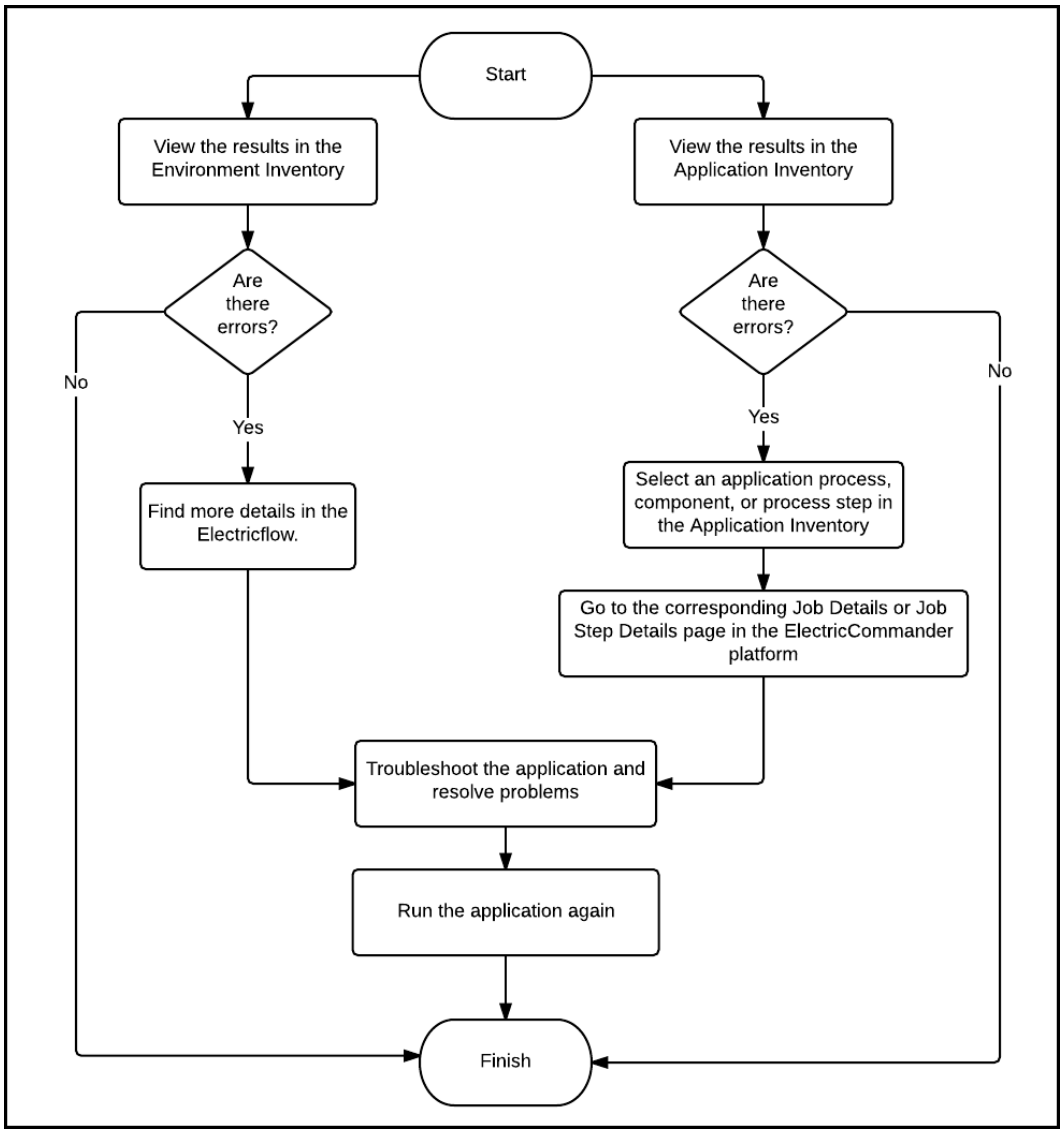
When it is time for the application to run, the system runs it in the background.

You can view the results in the Application Inventory and the Environment Inventory.

Related information:

- Different Ways to Run Applications
- Running Applications
- Viewing Results and Troubleshooting

Viewing Results and Troubleshooting



Viewing the Environment Inventory

Follow these steps to get more information about a specific environment.

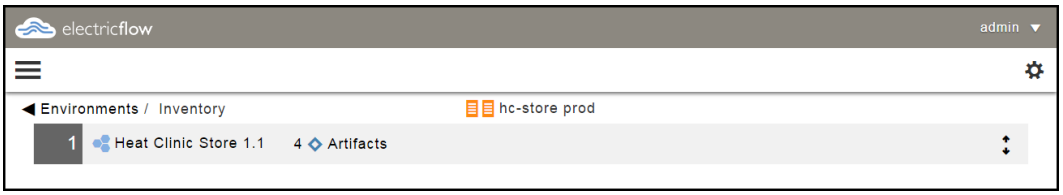
Starting at the Home page:

1. Go to the Environments List.
2. Select an environment.

3. Click the inventory icon.

   Example:

   Example:

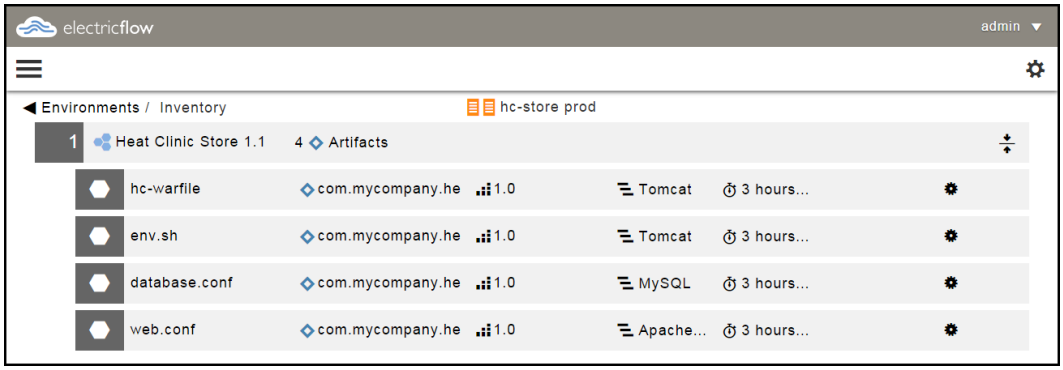
   

4. Click the View icon to view more information.

   Example:

   The Environment Inventory opens.

   Example:

5. Click the gear icon to view more information.

Viewing the Application Inventory

Follow these steps to get more information about a specific application.

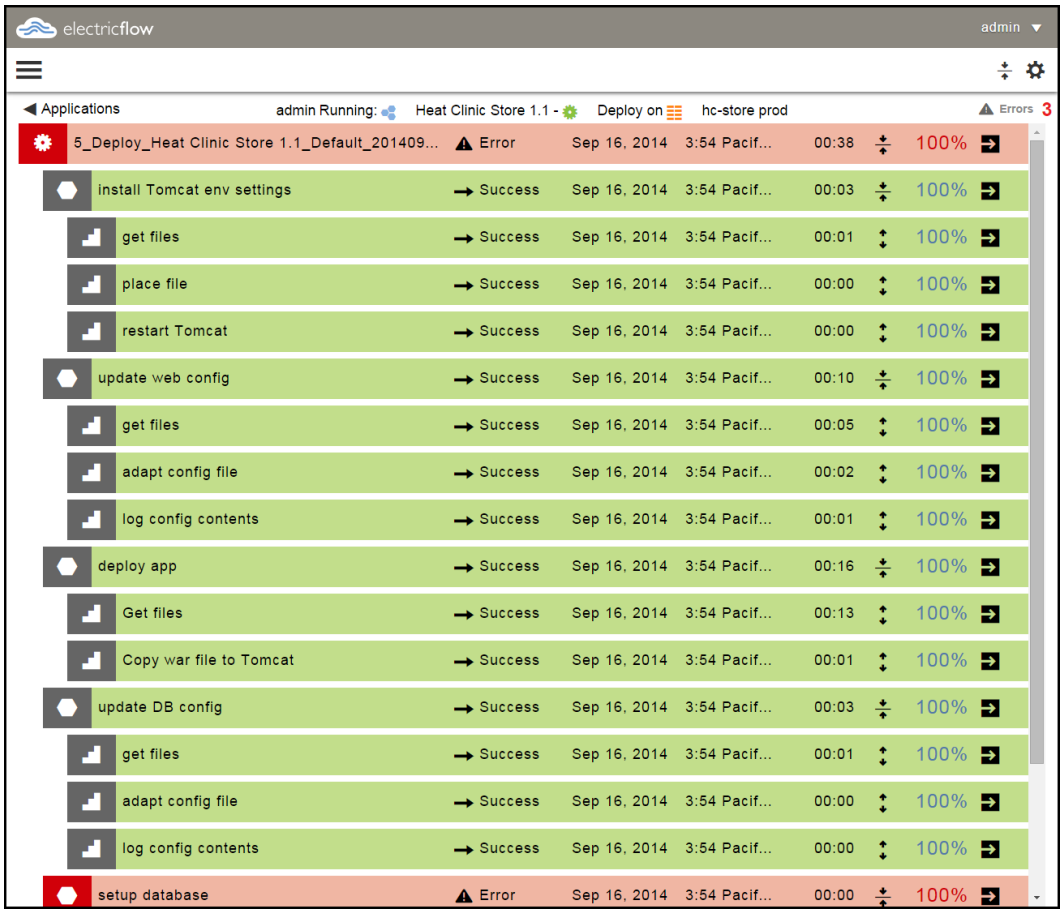
Starting at the Home page:

1. Go to the Applications List.
2. Click the "View Details" icon to get more information.

   Example:

   Details about the application processes, components, and process steps appear.

   Example:

3. Select an application process, component, and process step, and click the "View details" icon for more information about it.

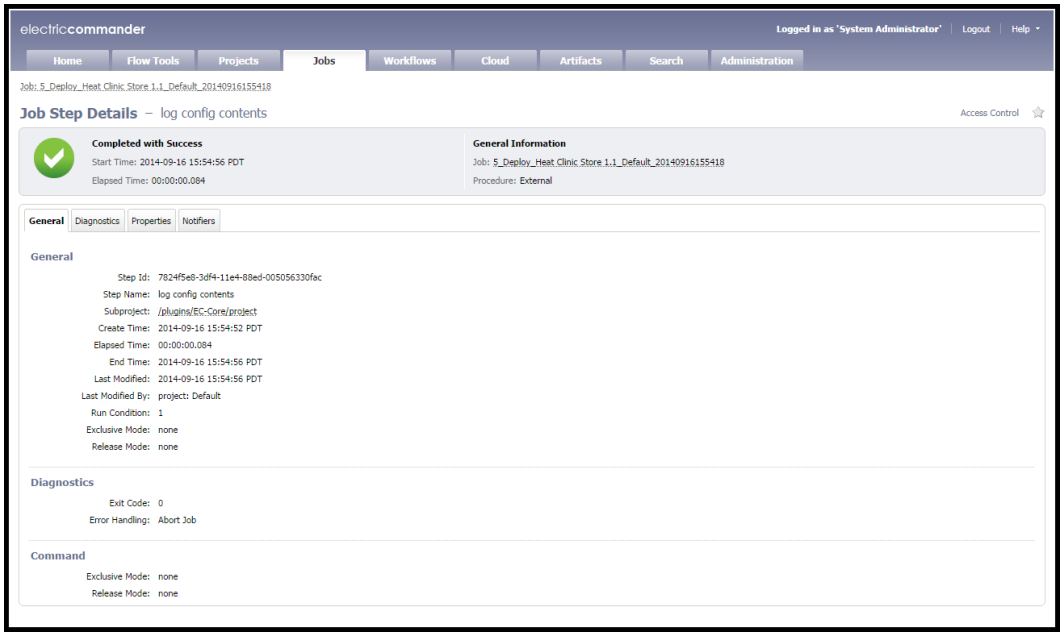
Examples

The following are examples of the information that you can get about an application process, component, and process step.

To get more information about a step that ran successfully, click the "View details" icon in the "log config contents" step.

The Job Step Details page for it appears in the ElectricCommander platform.

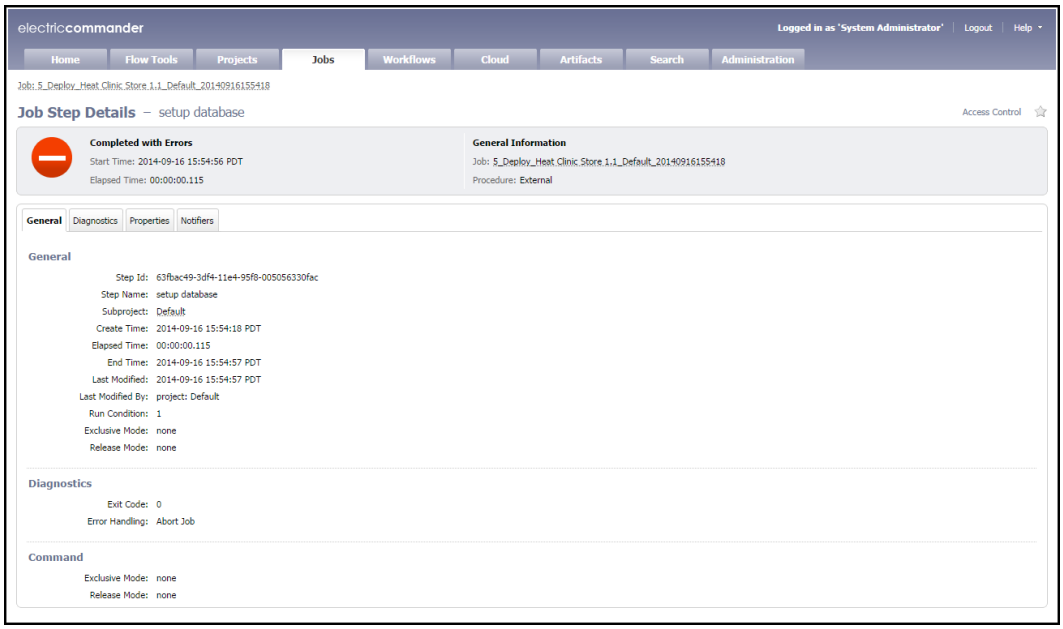
Example:



To get information about a component process that failed, click the "View details" icon in the "setup database" component.

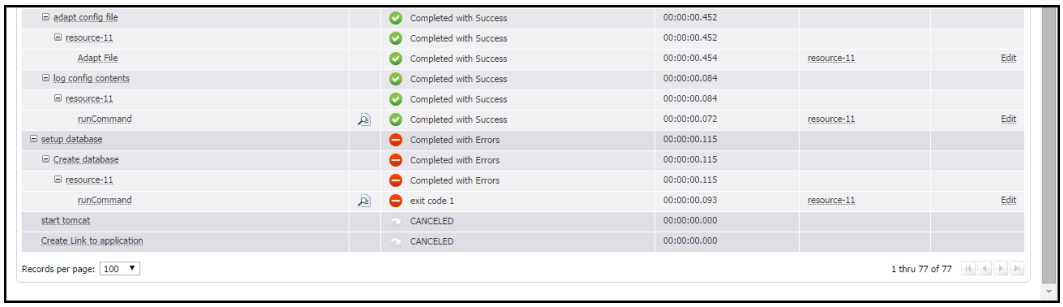
The Job Step Details page for it appears in the ElectricCommander platform.

Example:



When you click on the "Job:5_Deploy_Heat Clinic Store 1.1_Default_20140916155418" link in the General Information section, you go to the Job Details page in the ElectricCommander platform.

Example:



If you click on the log icon in the runCommand row, the log file appears:

Example:

With the information, you can troubleshoot application, resolve problems, and rerun the application.

Related information:

- Inventory Tracking
- Viewing Job Details

Process Branching

This section describes Processing Branching and how to use it.

About Process Branching

Starting in ElectricFlow 5.1, you can use process branching to specify the path through an application or component process based on transition conditions other than out-of- the-box options. Decisions about the next step in the process are made while the process runs. This is similar to the transition conditions for workflows in the ElectricCommander platform.

If the application or component process applies to multiple use cases, you can design one process with two or more branches instead of designing multiple processes for each use case. You can also define steps that run in parallel.

For example, to install or upgrade software, you can define one process for multiple use cases and use the same steps except for the following:

- The source files can be in .zip or .tar format. The steps to extract the files depend on the format.
- The operating system can be Linux or Windows. The steps to download the files, install them on the server, and enter commands depend on the operating system.

ElectricFlow supports the following branching conditions. The default is **Always**.

- Completion status of the previous process step
- A property set in another part of the system, not the in the previous step
- Custom validation rules

When you define a step in an application or component process, you configure what ElectricFlow does when an error occurs. You select **stop running** or **continue running** in the On Error field in the Define Step dialog box. *This setting overrides any job-step-level branching condition.* If an error occurs in a job step and the **stop running** is set, ElectricFlow aborts even if the branching condition is fail.

How to Use the Process Branching UI

How to get to the Application Process Designer:

- Existing application process: From the Applications Designer, click the down-arrow icon and select an application.

  The Application Process Designer for that application process appears.

- New application process: From the Applications Designer, click the "Add application process" icon, set the parameters in the Application Process Details dialog box, and click **OK**.

  The Application Process Designer for the application process appears.

How to get to the Component Process Designer:

- Existing component process: From the Applications Designer, click the "Show component process" icon, and select a component process in the drop-down list.

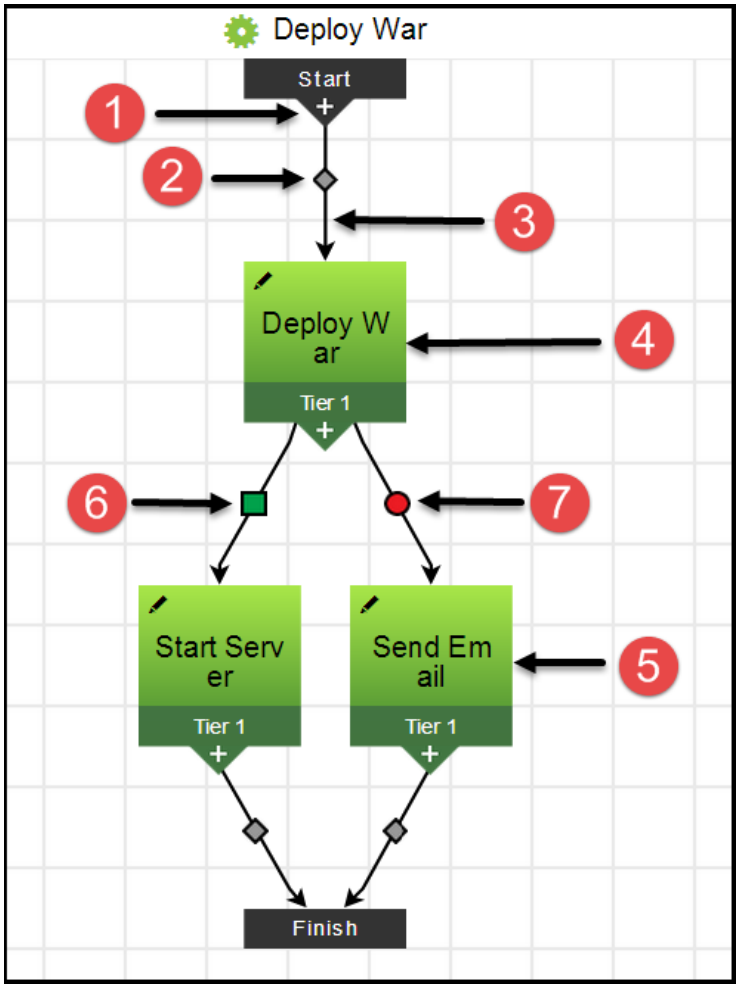
  The Component Process Designer for that component process appears.

- New component process: From the Applications Designer, click the "Add component process" icon to a component, set the parameters in the Component Process Details dialog box, and click **OK**.

  The Component Process Designer for the component process appears.

UI Objects

This example shows how a process appears in the ElectricFlow UI.



The process has these UI objects:

1	Click the plus sign (+) to add a step after the selected step. In this example: • When you click the plus sign, a new step is added after the Start and parallel to the existing next step called Deploy War. • The steps immediately after the "Deploy War" step are parallel steps. The decision about the next step, either the "Start Server" or the "Send Email" step, depends on the branching condition. The results of the "Deploy War" step determine what the next step is. ○ If the results of the "Deploy War" step are successful (shown by the square green connector), the next step is the "Start Server" step. ○ If the results fail (shown by the circular red connector), the next step is the "Send Email" step.
2	Connector between two objects in the process. The default branching condition is Always. When you click the connector, the branching conditions menu opens.
3	Link between two steps in the process. The link goes from the source step to the target step.
4	Source–The link starts at this step. For the link between the "Deploy War" and the "Send Email" steps, the source is the "Deploy War" step.
5	Target–The link ends at this step. For the link between the "Deploy War" and the "Send Email" steps, the source is the "Send Email" step.
6	The branching condition is **Successful**. If the War file is run successfully in this example, the next step is Start Server.
7	The branching condition is **Failure**. If the file is not run in this example, the application fails and the next step is to send an email to the administrator.

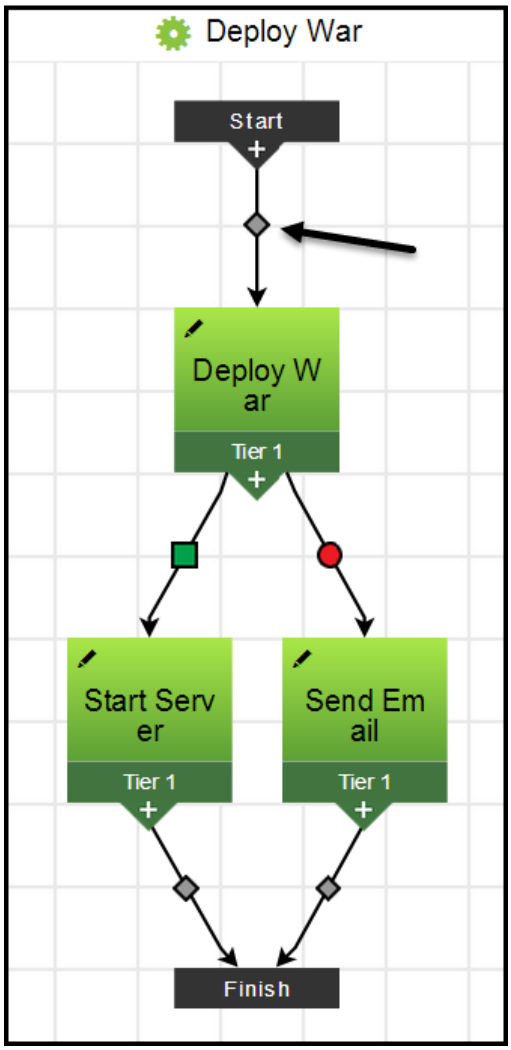
Branching Conditions Menu

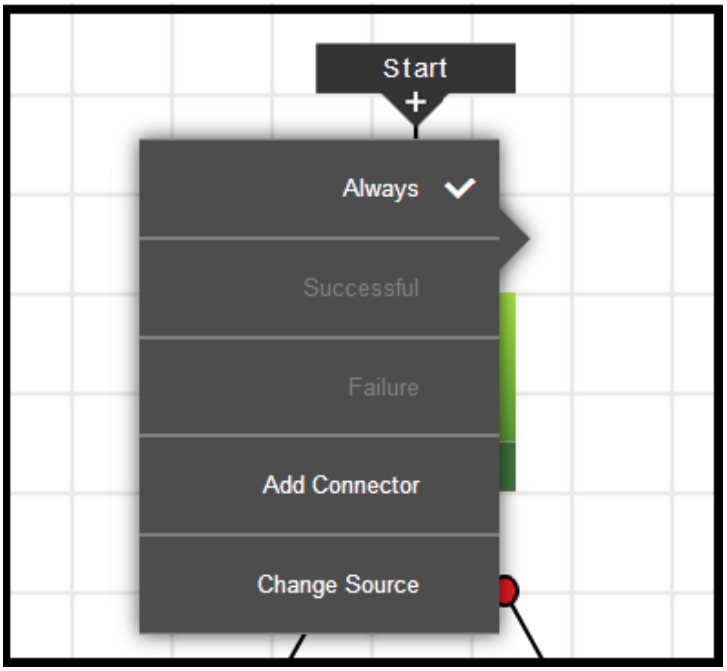
When you click a connector on a link, the branching conditions menu opens. Depending on the location of the connector, some of the menu options may not be available. These are possible branching conditions:

- **Always**–Always go to the next step, referred to as the target.
- **Successful**–Go to the next step if the previous step, referred to as the source, is successful.
- **Failure**–Go to the next step if the previous step fails.
- **Add Condition**–Add a custom condition.
- **Add Connector**–Add a connector from the source of the link to a new target by selecting one of the highlighted eligible steps. You can only select an eligible step.

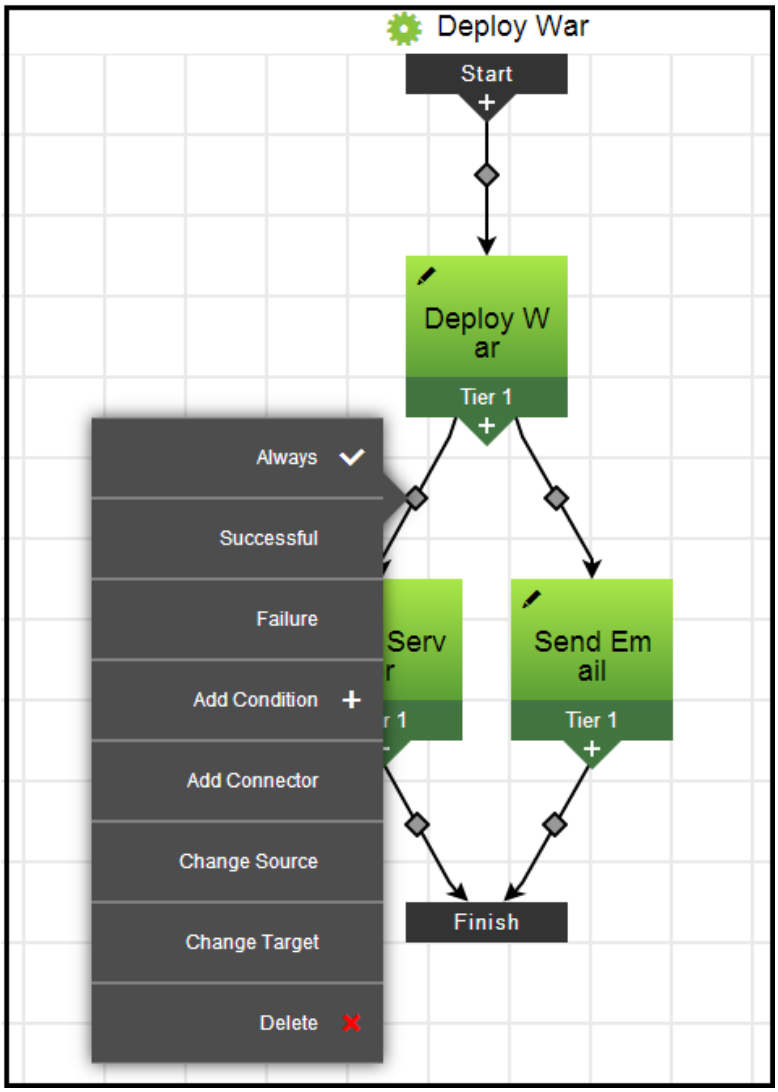
- **Change Source**–Change the source by selecting one of the highlighted eligible steps, which has a red outline. You can only select an eligible step.
- **Change Target**–Change the target by selecting one of the highlighted eligible steps, which has a red outline. You can only select an eligible step.
- **Delete**–Delete the selected connector and link.

For example, when you select the connector between the Start and "Deploy War" steps, only some of conditions appear and only some are available. The condition between the Start and the next step is **Always**, the default branching condition.



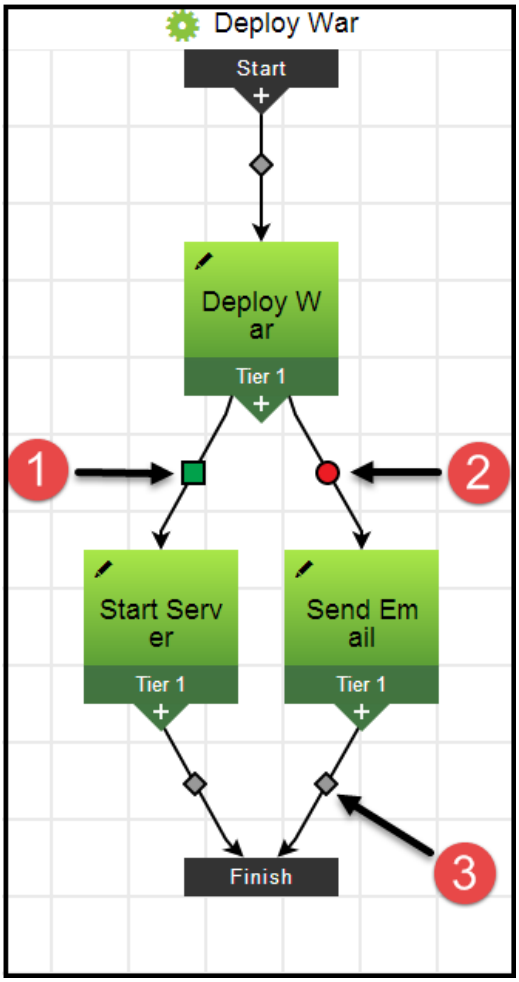


When you select the connector between the "Deploy War" and "Start Server" steps, all of the these conditions appear.



Analysis of a Process With Simple Branching

This example shows a process with simple branching that runs the War file. For the steps to design this example, see Simple Process Branching Example.



1	The branching condition is **Successful**. If the War file is run successfully, the next step is Start Server.
2	The branching condition is **Failure**. If the file is not run successfully, the application fails and the next step is to send an email to the administrator.
3	The branching condition is **Always**.

The example has the following job-step branching dependencies:

Source	Target	Branching Condition
Deploy War	Start Server	Successful
Deploy War	Send Email	Failure

Process Branching States and Conditions

State of the Branching Condition Connectors in the UI

In the ElectricFlow UI, the status of the link is based on the shape and color of the connector.

Shape	Color	Link Status
Diamond	Light gray	Always
Diamond	Dark gray	Disabled
Square	Green	Successful
Circle	Red	Failure

Examples of Branching Conditions

These are examples of branching conditions that you can apply in your processes.

- Based on the status of the previous step

  Follow the branch based on the result of the previous step: Successful, Failure, or both (Always).

  Example:

  - **Successful**–If the file is downloaded successfully, the next step is to extract the files.
  - **Failure**– If the file was not downloaded properly, the next step is to abort the process.
  - **Always**–The next step is to always extract the files.

- Based on a value of an operation during the step

  Follow the branch that matches the result of an operation such as calculating a value or processing data during the step.

  Example: The result of an operation is a file type.

  - If the result is an XML zip file, the next step is open an XML text editor.
  - If the result is a .htm file, open a web browser.
  - If the result is a .mov, open an application to play the movie.

- Based on a property in another part of the system

  Follow the branch based on a property set in another part of the system, not in the previous process step.

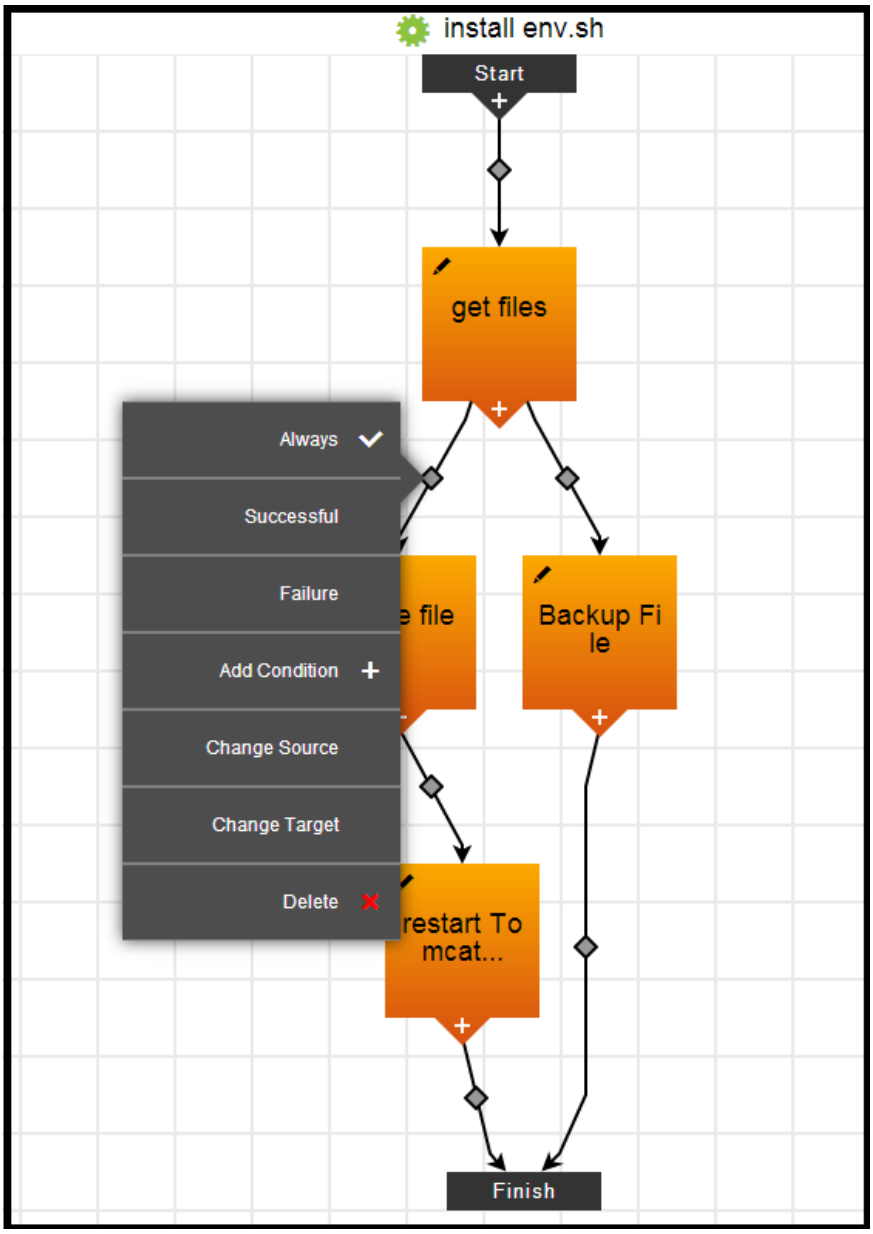
  Example:

  - If the property `os_type = linux` is set on a resource, always follow the branch for Linux steps.
  - If the property `release_type` is set to minor in the application, always follow the branch for minor releases when running the process.

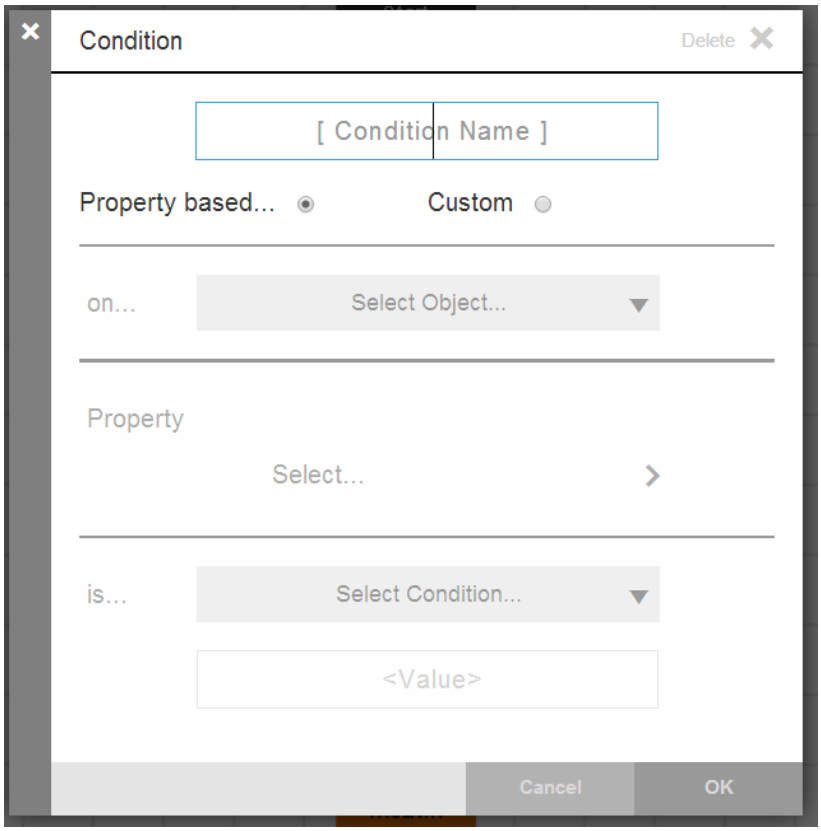
Custom Conditions in Process Branching

How to get here: In a component or application process with branching, click the connector on a link to open the branching options menu.

In this example, click the connector between the "Deploy War" and "Start Server" steps, and select **Add Condition** to add a custom condition.



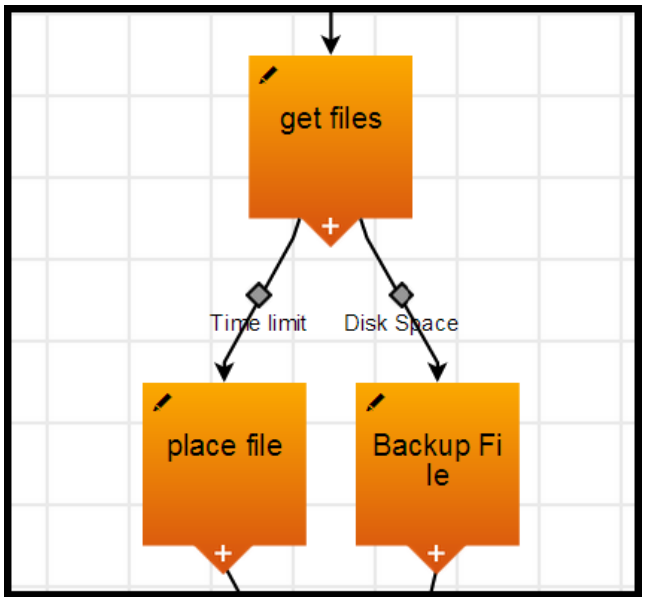
The Condition dialog box opens.



When you click the connector between the "Deploy War" and "Start Server" steps, these conditions appear:

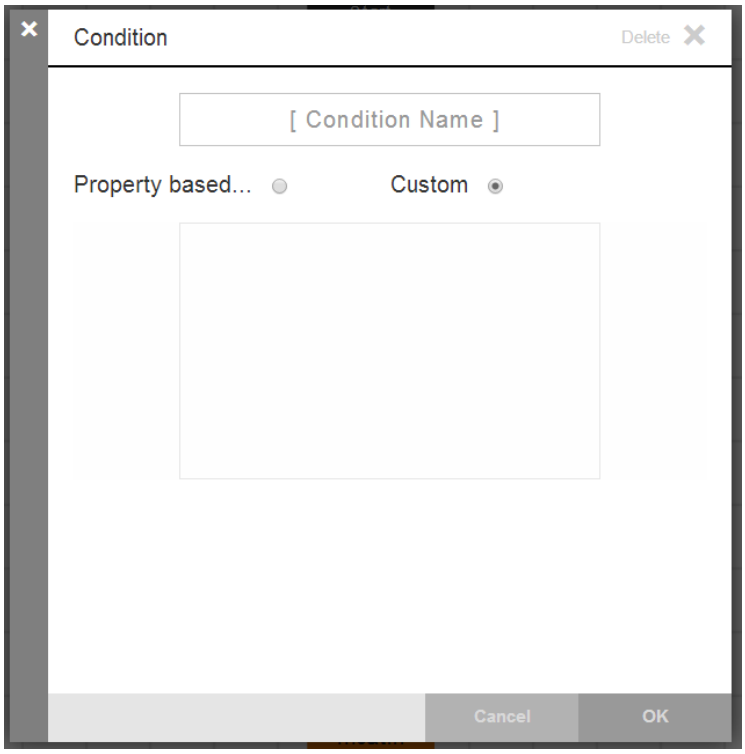
- **Always**–Always go to the next step, referred to as the target.
- **Successful**–Go to the next step if the previous step, referred to as the source, is successful.
- **Failure**–Go to the next step if the previous step fails.
- **Add Condition**–Add a custom condition.
- **Add Connector**–Add a connector from the source of the link to a new target by selecting one of the highlighted eligible steps. You can only select an eligible step.
- **Change Source**–Change the source by selecting one of the highlighted eligible steps, which has a red outline. You can only select an eligible step.
- **Change Target**–Change the target by selecting one of the highlighted eligible steps, which has a red outline. You can only select an eligible step.
- **Delete**–Delete the selected connector and link.

After you configure your conditions, they appear near the affected connectors in the process.



When you configure a **Property based** condition, the fields in the Condition dialog box remain the same .

When you configure a **Custom** condition, the fields change.



Configuration Guidelines for Process Branching

Follow these guidelines when you use process branching in your application or component processes.

- When you add a step, you must define it before adding another step.
- You can only configure branching conditions on a connector between two process steps.
- You cannot configure branching conditions between these objects:

  The start of the process and the steps immediately after it.

  The end of the process and the steps immediately before it.
- You cannot configure branching conditions between these objects:
  - The start of the process and the steps immediately after it.
  - The end of the process and the steps immediately before it.
- When you define a step in an application or component process, you configure what ElectricFlow does when an error occurs.

  Select **stop running** or **continue running** in the **On Error** field in the Define Step dialog box. *This setting overrides any job-step-level branching condition.*

  If an error occurs in a job step and the **stop running** is set, ElectricFlow aborts even if the branching condition is set to Failure.

Simple Process Branching Example

How to get to the Application Process Designer:

- Existing application process: From the Applications Designer, click the number-and-down-arrow icon and select an application. The Application Process Designer for that application process appears.
- New application process: From the Applications Designer, click the "Add application process" icon, set the parameters in the Application Process Details dialog box, and click **OK**. The Application Process Designer for the application appears.

How to get to the Component Process Designer:

- Existing component process: From the Applications Designer, click the "Show component process" icon, and select a component process in the drop-down list. The Component Process Designer for that component process appears.
- New component process: From the Applications Designer, click the "Add component process" icon to a component, set the parameters in the Component Process Details dialog box, and click **OK**. The Component Process Designer for the component process appears.

This example shows how to design a new process and run the War file.

- If the application succeeds, ElectricFlow starts the server.
- If the application fails, ElectricFlow sends an email to the administrator.

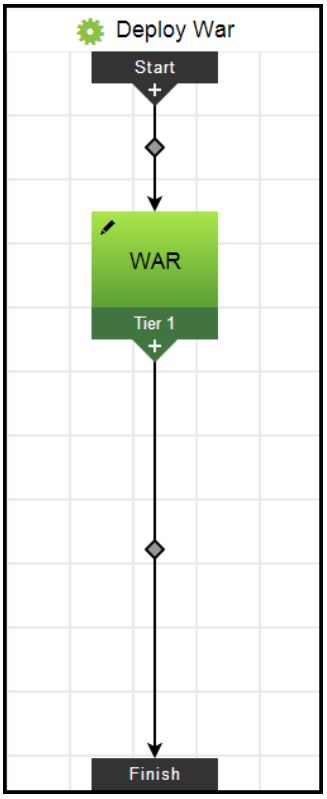
Beginning in the Application Process or Component Process Designer:

1. Click the icon below "Define this Step."

   The process step dialog box appears.

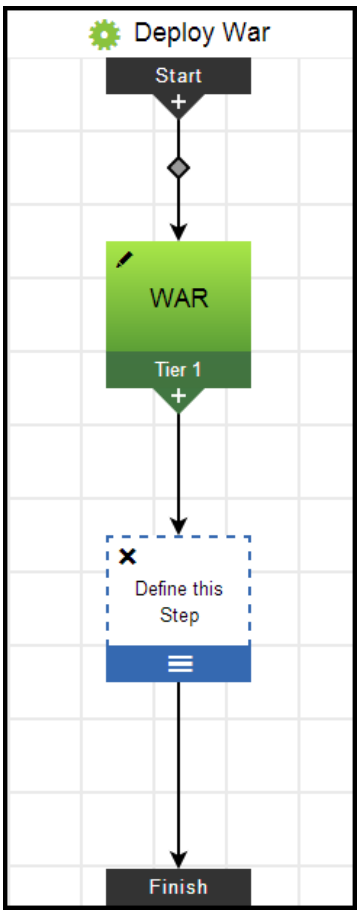
2. Configure the step.

   The first step is now configured.

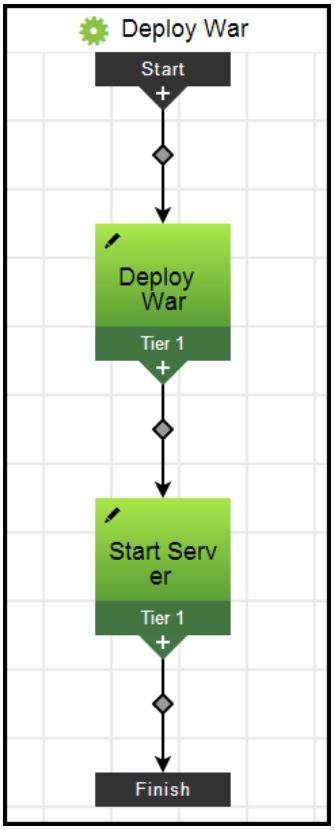


3. To add a step below the first step, click the plus sign (+) below the tier name in the first step.

   A new undefined step appears below the first step.

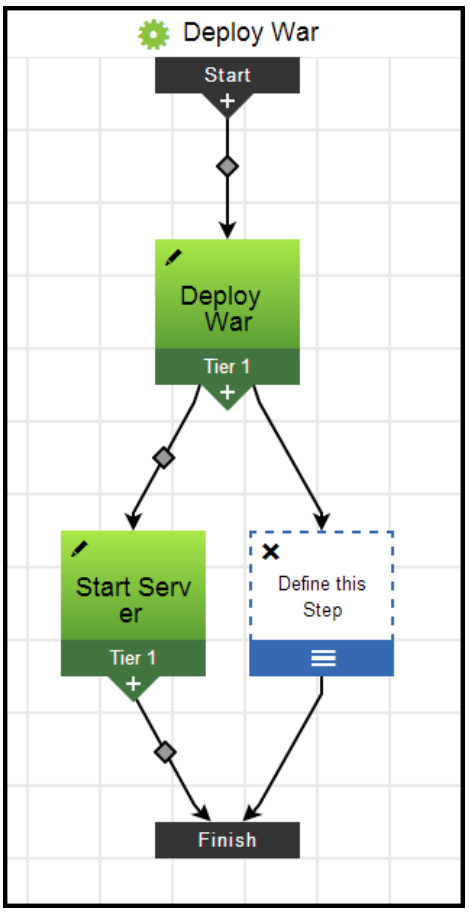


4. Define the new step.

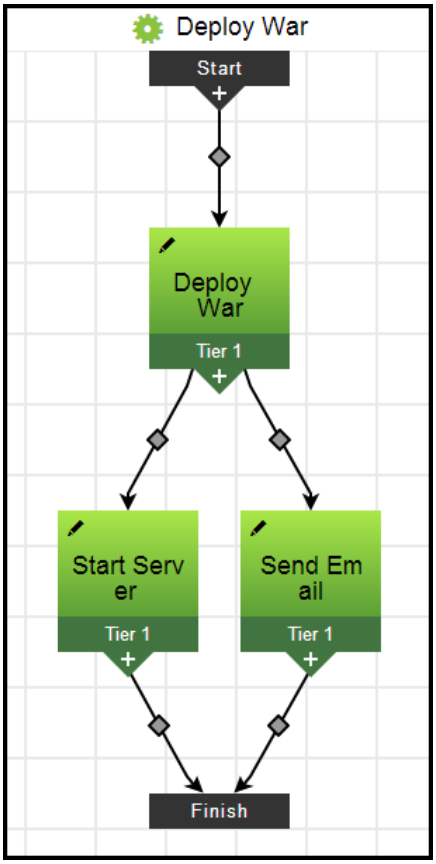


5. To add a step that will be parallel to the second step, click the plus sign in the first step.

   A new undefined step appears below the first step and parallel to the second step.

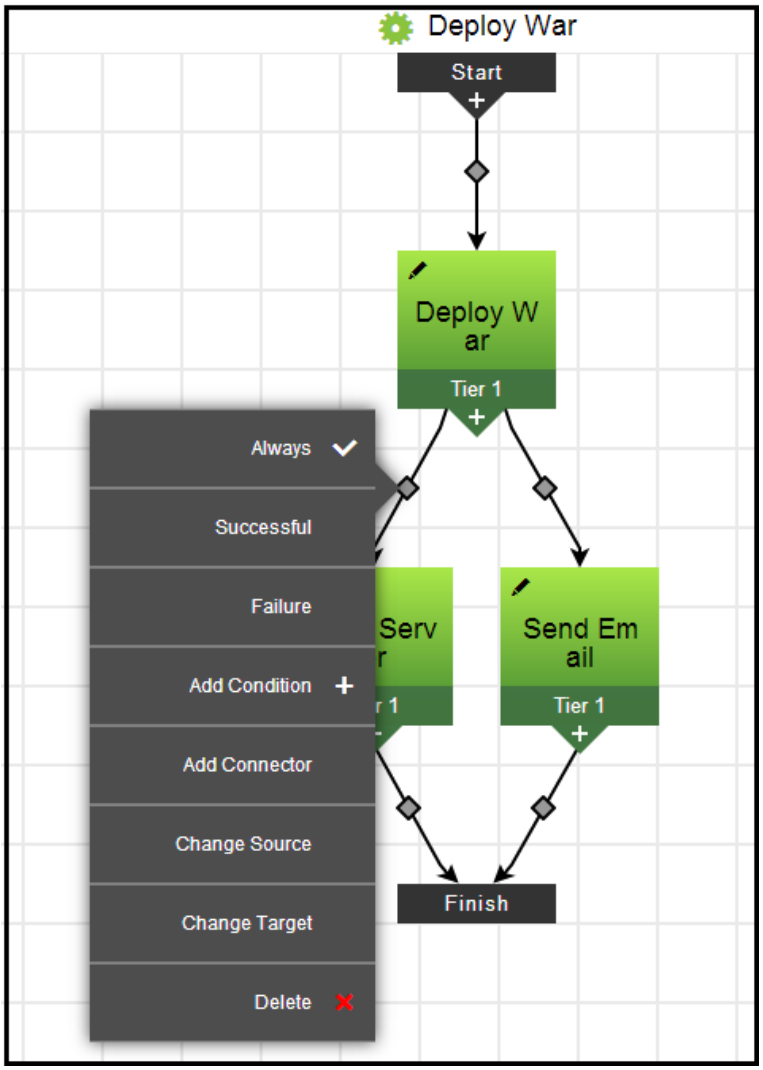


6. Define the third step.



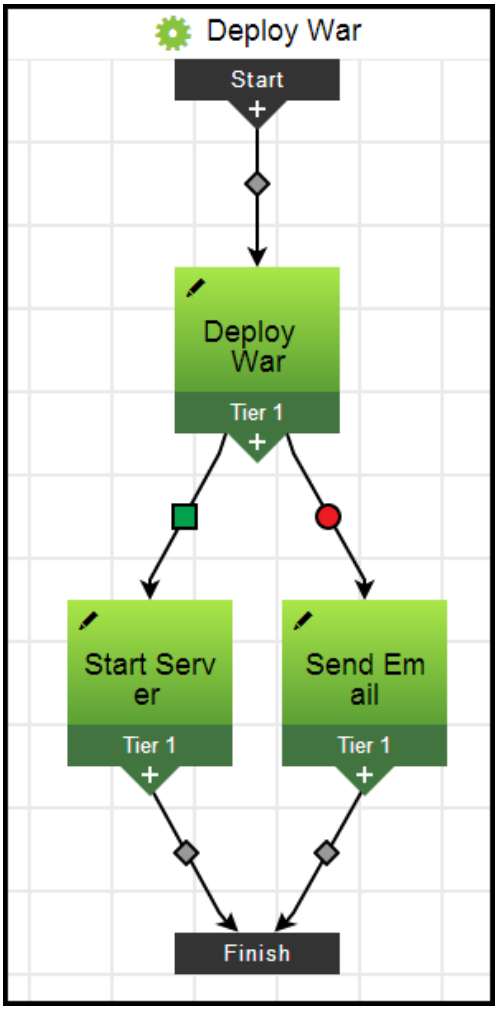
7. To configure the branching condition between the "Deploy War" step and the "Start Server" step, click the connector between them.

   The branching conditions menu opens.



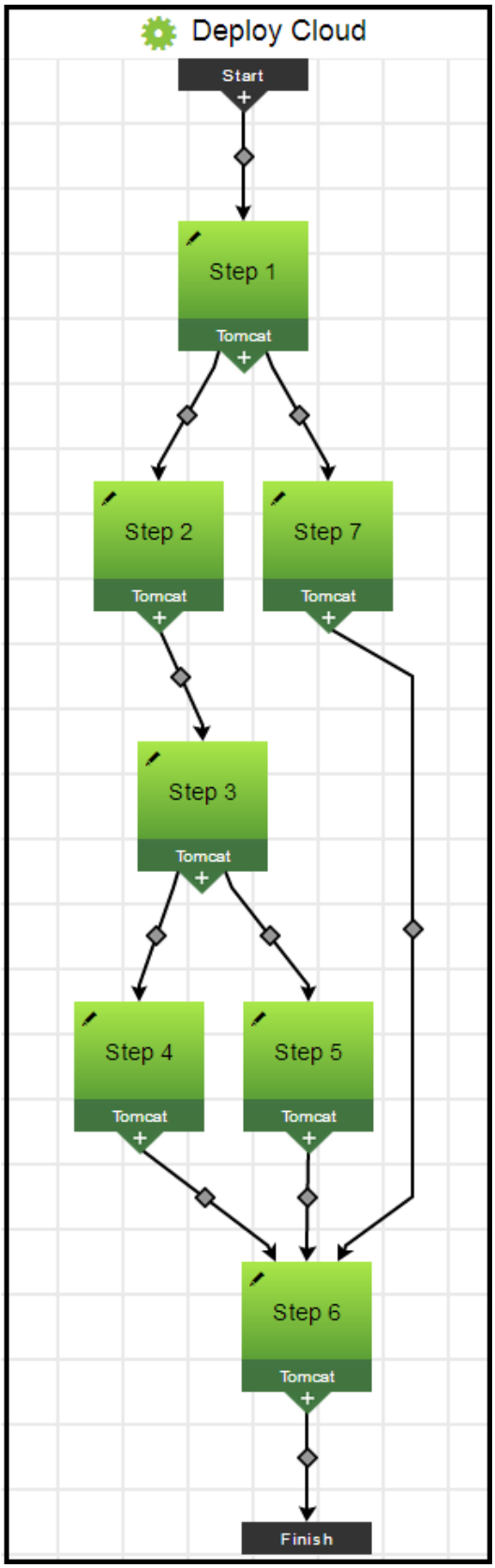
   For the "Start Server" step, select **Successful**.

8. To configure the branching condition between the "Deploy War" step and the "Send Email" step, click the connector between them, and select **Failure** in the branching conditions menu.



Process Branching Example: Deleting Steps

This example shows how a process changes when you delete process steps.


Deploy Cloud
Start
Step 1
Tomcat
Step 2
Tomcat
Step 7
Tomcat
Step 3
Tomcat
Step 4
Tomcat
Step 5
Tomcat
Step 6
Tomcat
Finish

Deleting Step 3

To delete Step 3:

1. Click the pencil icon on Step 3.

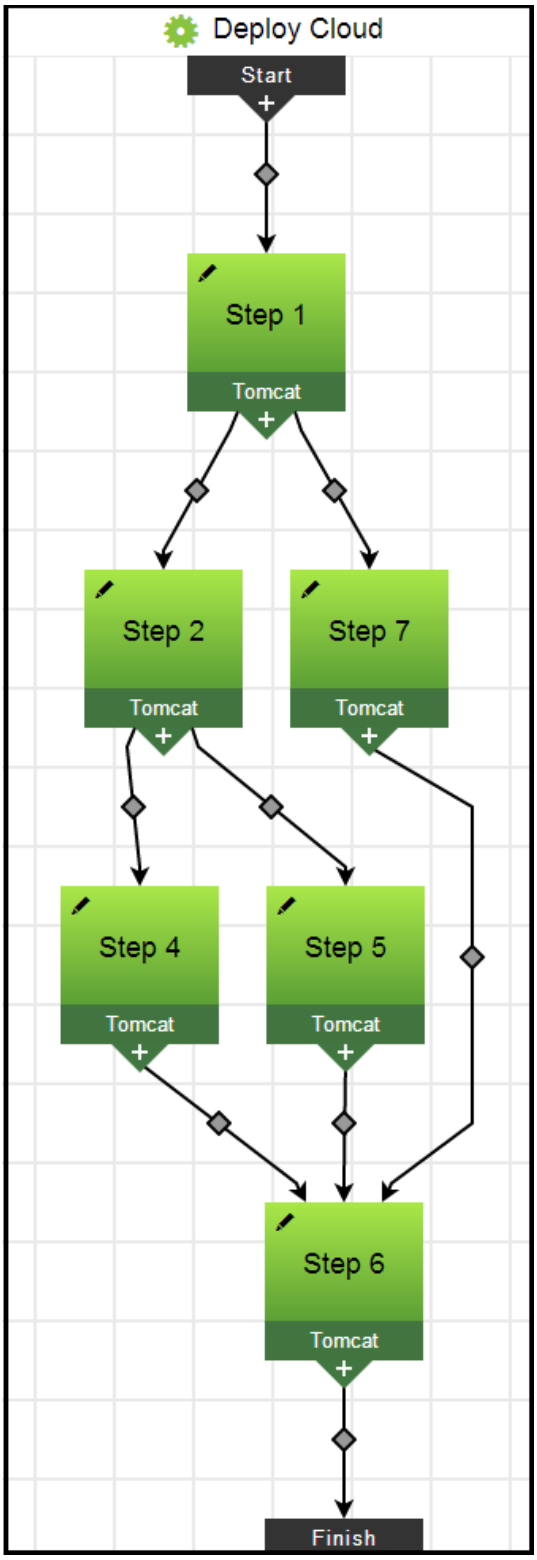
   The step details menu appears.

2. Click **Delete**.

   The Step Deletion dialog box appears.

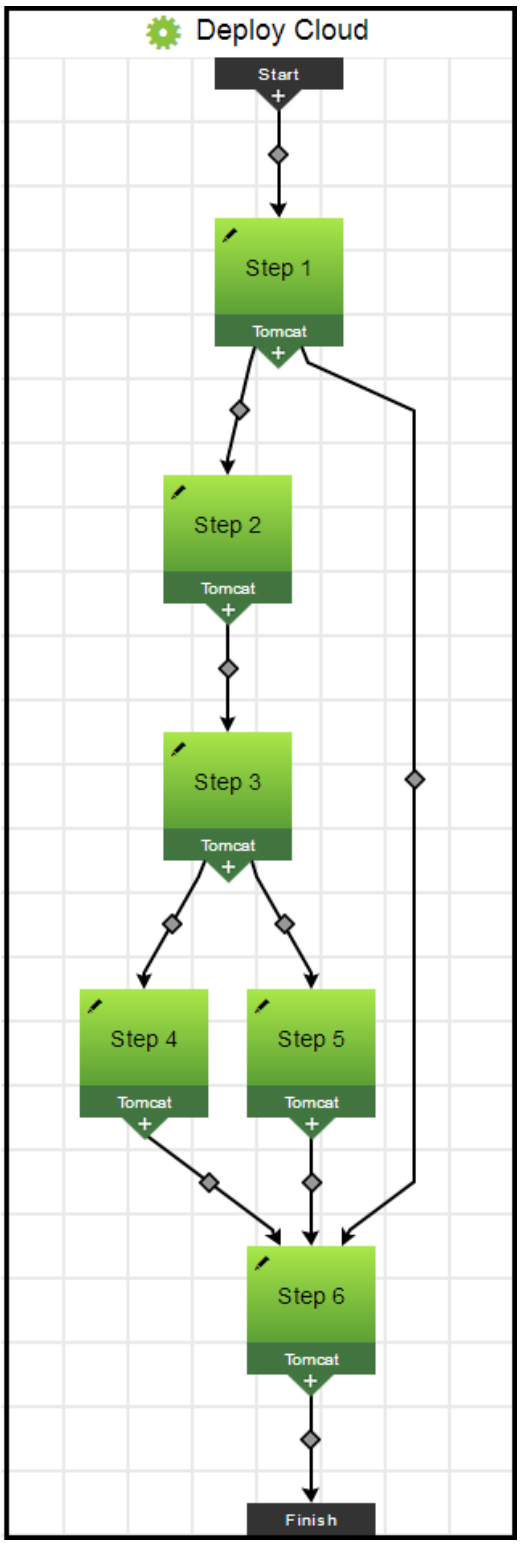
3. Click **OK** to delete the step.

When you delete Step 3, Step 2 becomes the source for Step 4 and Step 5.


Deploy Cloud
Start
Step 1
Tomcat
Step 2
Tomcat
Step 7
Tomcat
Step 4
Tomcat
Step 5
Tomcat
Step 6
Tomcat
Finish

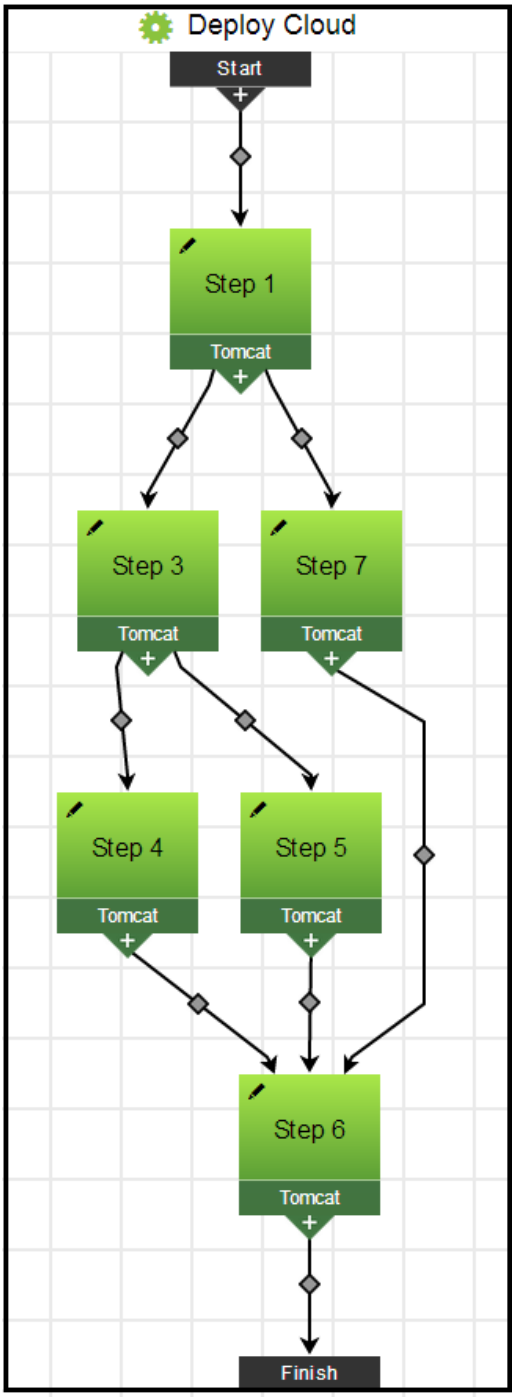
Deleting Step 7

Step 1 becomes the source for Step 6.



Deleting Step 2

Step 1 becomes the source for Step 3.



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ElectricFlow Tutorials

This section has tutorials to help you use ElectricFlow features in your applications.

- Running Applications with Deploy Options

Running Applications with Deploy Options

Starting in ElectricFlow 5.2, when running an application, you can do a full or partial deploy and you can run the application on a schedule.

This tutorial describes how to run an application by adding a new artifact and selecting artifact versions to run (partial deploy and smart deploy).

Before You Begin

We recommend designing an application as described in the following list and then running it.

- The application has one application process consisting one or more steps to retrieve an artifact.
- The application has two application tiers, and each tier has two components.
- The application has five artifacts, and each artifact has two versions.
  - For four of the artifacts, an artifact is retrieved as part of an application or component process.
  - The fifth artifact is the new artifact that will be added to the application.
- Each component has a component process with one or more steps to retrieve an artifact from a repository.
- The environment has two tiers, and each tier has two resources.
- There are at least two tier maps.

Tutorial

To run the application you add a new artifact and select the specific version of an existing artifact:

1. In the application, add the fifth artifact to an application process step that retrieves the artifact.
2. Go to the Applications List, click on the "Run process" icon, and select **New Run**.

   The wizard where you set the parameter to run the application opens.
3. Select the application process and environment, and enable smart deploy.
4. Click **Full run** to open the dialog box with the list of objects in the application.
5. Select the new artifact.
6. For the existing artifact, find it in the list and select the artifact version that you want to use.
7. Click **OK** to return to the wizard.
8. Click **OK** to run the application.
9. See the results in the Environment Inventory and the Application Inventory.

Related information:

- Designing and Running Applications
- Running Applications
- Viewing Results and Troubleshooting
- Inventory Tracking
- ElectricFlow Icons