# SL1 PowerFlow Platform Release Notes

Version 2.1.1

# Overview

The SL1 PowerFlow platform version 2.1.1 addressed a number of issues with updates to the **iservicecontrol** utility, along with an update to PowerFlow to ensure the Synchronization PowerPacks install correctly.

**WARNING:** If you made any customizations to default applications or steps that shipped with previous versions of PowerFlow, you will need to make those customizations compatible with Python 3.6 or later *before* upgrading to version 2.0.0 or later from version 1.8.x of PowerFlow.

**WARNING:** If you made any modifications to the nginx configuration or to other service configuration files outside of the **docker-compose.yml** file, you will need to modify those custom configurations before upgrading, or contact ScienceLogic Support to prevent the loss of those modifications.

**NOTE:** After the 2.1.0 release of the Integration Service platform, the *Integration Service* was rebranded as *SL1 PowerFlow*, which will be available in SL1 Standard subscriptions. Also, the *Automation Builder* was rebranded as the *SL1 PowerFlow builder*, which will be available in SL1 Premium subscriptions.

This document describes:

- *The issues addressed in version 2.1.1*
- *The features included in version 2.1.1*
- *The known issues in version 2.1.1*
- *System requirements for this version*
- *Installing the PowerFlow Platform*
- *Upgrading to this version of the PowerFlow Platform*

# Issues Addressed in Version 2.1.1

The following addressed issues are included in PowerFlow version 2.1.1:

- Addressed an issue where the **iservicecontrol autocluster** action failed if the password contained special characters like the "@" symbol. Please note that the isadmin (host) password needs to be escaped using single quotes in the **iservicecontrol** command, such as `'user:password'`. For example:

```
iservicecontrol --host 10.10.10.100 'isadmin:testing@is' --host 10.10.10.102
'isadmin:testing@is' --host 10.10.10.105 'isadmin:testing@is' autocluster
```

> **NOTE:** The **iservicecontrol** command-line utility is also called **pfctl**. You can use either "iservicecontrol" or "pfctl" in commands, but "iservicecontrol" will eventually be deprecated in favor of "pfctl".

- Addressed an issue where the **ispasswd** script failed and did not update the couchbase and pypiserver services password when you used the script to change the Linux Host OS SSH password for a PowerFlow server.
- Updated the **is_gui** container to deploy only one replica per node, which lets the PowerFlow user interface scale up more effectively.
- Addressed an issue where steprunners were not prioritizing the virtual environment for module load, and were instead being queried from the database, increasing overhead on the database. You will notice a reasonable increase in processing speed and less impact on the database with this update, as long as the content being run belongs to a Synchronization PowerPack.

# Issues Addressed in Version 2.1.0

The following addressed issues were included in PowerFlow version 2.1.1:

- Addressed an issue where Synchronization PowerPacks did not display properly on the **SyncPacks** page of the PowerFlow user interface, version 2.0.2, after an upgrade from version 1.8.x of PowerFlow. For more information, see the "Updating Cluster Settings when Upgrading from 1.8.x to 2.0.0 or Later" topic in the *Installing and Configuring* chapter of the ***SL1PowerFlow*** manual. (Support Case 92275, JIRA ID: EM-36537)
- Addressed an issue that occurred when trying to activate or install *ServiceNow CMDB* Synchronization PowerPack when using a proxy server. The "Configuring a Proxy Server" topic in the *Installing and Configuring* chapter ofthe ***SL1PowerFlow*** manual was updated to with the correct environment settings for a proxy server. (Support Case 84891, JIRA ID: EM-35737)
- Addressed an issue with container versions in the command-line utility called **iservicecontrol**. This utility automates the deployment of PowerFlow in a cluster.
- Addressed an issue where the Jinja2 template lookup fails if a step name contains spaces. The spaces will now be replaced by underscores, such as "Test Step" is updated to "Test_Step".

- Addressed an issue where a "OneToOne" parameter type was defined in a step, but the PowerFlow user interface rendered and saved the data as a "OneToMany" parameter. As a result, the saved value was saved as a dictionary of lists instead of a flat dictionary.
- Error messages were improved when a Synchronization PowerPack failed to be activated or installed.
- Addressed an issue where a pop-up message in the PowerFlow user interface was hidden behind a dialog box.
- Addressed an issue where the PowerFlow user interface retained an old error message about a Synchronization PowerPack not installing even if the Synchronization PowerPack was successfully installed.
- Addressed an issue with how the **customer_ci_relation_overrides** application variable was saved in the "Sync Devices from SL1 to ServiceNow" application. In previous version, you had to edit the code in the JSON Configuration editor if you wanted to add data to the **customer_ci_relation_overrides** application variable.
- Addressed an issue where a Synchronization PowerPack upgrade un-aligned any configuration objects that had been previously aligned with PowerFlow applications.

## Issues Addressed in Version 2.0.3

The following addressed issues were included in PowerFlow version 2.0.3:

- Addressed an issue where some special characters, such as the "!", were not supported in the password for the PowerFlow root user.
- Addressed an issue when Redis timeout or connection errors occurred, the Scheduler would retry for as many times as configured in the "SCHEDULER_TIMEOUT_RETRIES" environment variable (the default value is 3). If the connection is not made after the specified number of retries, the Scheduler would save the tasks that were not executed and restart, and then the Scheduler would execute those pending tasks.
- Addressed an issue where an offline deployment of a Synchronization PowerPack failed because of missing dependencies. The release notes for the Synchronization PowerPacks were updated with steps for uploading the required external files for the missing dependencies.
- Addressed an issue where schedules for applications that were created in the PowerFlow user interface at times did not persist, leading to missing job runs.
- Addressed an issue where the **is_upgrade_to_v2.sh** script did not locate the 2.0.1 or 2.0.2 RPMs. The script was updated to find any RPM in the packages directory of the ISO.
- Addressed an issue where installing a Synchronization PowerPack took much longer than expected to finish when the host system is not connected to the Internet.
- In the PowerFlow user interface, you can no longer run another installation of the same Synchronization PowerPack while the installation for that Synchronization PowerPack is already in progress. The options on the **Actions** menu are now grayed out while the initial installation is in progress.

## Issues Addressed in Version 2.0.2

The following addressed issues were included in PowerFlow version 2.0.2:

- Addressed an issue with container versions in the command-line utility called **iservicecontrol**. This utility automates the deployment of PowerFlow in a cluster.
- Addressed an issue with how the **customer_ci_relation_overrides** application variable was saved in the "Sync Devices from SL1 to ServiceNow" application. In previous version, you had to edit the code in the JSON Configuration editor if you wanted to add data to the **customer_ci_relation_overrides** application variable.
- Addressed an issue where a Synchronization PowerPack upgrade un-aligned any configuration objects that had been previously aligned with PowerFlow applications.

## Issues Addressed in Version 2.0.1

The following addressed issues were included in PowerFlow version 2.0.1:

- Enabled new optimization settings that improve the performance of large-scale clusters by default. (Case: 00071230)
    - The following environment settings were added to the **docker-compose.yml** file for all workers by default in PowerFlow hotfix 2.1.1:
      `additional_worker_args: "--without-mingle --without-gossip --max-tasks-per-child 1"`
    - In addition to the default optimization settings above, you can further reduce system overhead by setting the `--without-heartbeat` environment variable in `additional_worker_args`. Please note that this setting will reduce the memory and CPU utilization of the system, but it will come at the cost of preventing the Flower service from getting an accurate depiction of current worker states.
    - If you want to disable these new configuration settings, set the environment variable `"disable_default_optimizations"` to `"True"` for all workers.

    > **NOTE:** Workers will continue to generate events for consumption from monitoring tools like Flower even with the new default configuration settings. In some extremely large clusters, you might want to completely disable eventing of workers completely, especially if Flower is not in use. To completely disable worker eventing, set the environment variable `"disable_events"` to `"True"`.

- Addressed an issue with the installation of the "C Foreign Function Interface" (CFFI) for Python that prevented offline users from upgrading the PowerFlow platform to version 2.0.0. (Case: 00074045)

## Issues Addressed in Version 2.0.0

The following addressed issues were included in PowerFlow version 2.0.0:

- Addressed an issue where Docker containers were not able to write logs and PowerFlow stopped working because the **/root** and **/var/log** directories were at 100%.
- The Debug logging for the PowerFlow Scheduler now provides additional information, including the PowerFlow application name being triggered, the parameters used by that application, and the schedule entry that started the run.
- Addressed an issue where the **sl1_user** value was case-sensitive when it should have been lowercase only.
- Addressed an issue where selecting *none* from the ***Configuration*** dropdown on the **Configuration** pane did not clear the selected configuration object from an application. Also, if you did not select a configuration object when editing fields on the **Configuration** pane, the previously set configuration object will remain aligned (if there was a previously set configuration object).
- Addressed an issue where scheduled applications were not properly honoring the ***loglevel*** application parameter.
- Addressed an issue where default values for some variables on the **Configuration** pane for an application were displayed as the actual values.
- Used hovertext to address an issue where long variable names on the **Configuration** pane were being truncated.
- Addressed an issue in the user interface with the "Sync Devices from SL1 to ServiceNow" application, where any values in the ***customer_ci_relation_overrides*** field were not saved or applied.
- Addressed an issue where the "PowerFlow Backup" and the "PowerFlow Restore" applications continued working in data-transfer mode after you set the ***data-only*** parameter to false.
- Removed a problematic index which could cause the indexer to end unexpectedly or cause high CPU usage because of abnormally large app_vars.
- Updated idx_logs_log_type_application_log with a critical fix to prevent the indexer from ending unexpectedly when it encountered abnormally large app_vars.
- Addressed an issue where special characters were not allowed in the display name for a configuration object.

# Features Included in Version 2.1.1

The PowerFlow platform version 2.1.1 includes the following features:

- An update to the **iservicecontrol upgrade** action lets you add local and remote paths for the ISO and RPM files instead of manually copying those files to the PowerFlow system that you want to upgrade.
- PowerFlow version 2.1.1 and later pin specific versions of pip and similar packages so that pypi will not automatically pull the latest package version. This update ensures that you can install the latest Synchronization PowerPacks on a PowerFlow system.

## Features Included in Version 2.1.0

This version included the following features:

- You can use the **PowerFlow builder** in the PowerFlow user interface to create complicated automations with logical branching, flow control, and data transformation features using drag-and-drop components.
    - From the **Steps Registry** pane, you can drag a **Condition** component onto an application workflow to create the option for branching flows, such as If-Else or If-Then-Else statements. The **Conditional Wizard** pane lets you modify the conditions that enable branching in the workflow.
    - From the **Steps Registry** pane, you can drag a **Transform** component onto an application workflow to pull data gathered by a previous step and modify or transform the data to fit into the next step.
- The *Flow Control* Synchronization PowerPack version 0.2.0 contains the "IfStep" step that enables logical branching. This Synchronization PowerPack is included in this release of PowerFlow.
- The "Jinja Template Data Render" step was added to *Base Steps* Synchronization PowerPack version 1.1.2 and later, which is included in this release of PowerFlow.
- Additional updates to the PowerFlow user interface include the following:
    - The **Steps Registry** pane on the **Application** detail page was updated to include new search and filtering tools to help you find the steps you need. Also, you can view the available steps by the Synchronization PowerPack to which the steps belong.
    - The **Step** pane at the bottom of the **Application** detail page contains a **Step Log** tab for log data for a selected step and a **Step Data** tab that displays the JSON data that was generated by the most recent run of the selected step.
    - You can now view log data for a step on the **Step Log** tab while the **Configuration** pane for that step is open.
    - When an application is in Edit mode, you can open a pop-up menu by right-clicking on a step, a **Condition** icon, or a **Transform** icon. The menu contains options for deleting the item or editing the item.
    - A new **Rotate** icon on the **Application** detail page that lets you turn the workflow 90 degrees to the right.
    - On the **Applications** page, if you want to view applications from only one Synchronization PowerPack or some of the Synchronization PowerPacks, click the Filter icon ( ) and select the Synchronization PowerPacks that have the applications you want to view from the **Filter by SyncPack** drop-down. You can also search for a Synchronization PowerPack. To go back to seeing applications from all Packs, click **Clear selected items**.
- The **iservicecontrol** command-line utility included in PowerFlow contains automatic cluster **healthcheck** and **autoheal** actions that will verify the configuration of your cluster or single node.
    - The **healthcheck** action in the **iservicecontrol** command-line utility for PowerFlow clusters will check the Docker version for each cluster to ensure that the Docker version is the same in all the hosts.
    - You can use key-based authentication instead of username and password authentication for the **iservicecontrol** command-line utility.
- More logging options were added for gui, api, and rabbitmq services. The logs from a service are available in the **/var/log/iservices** directory on which the service is running. For more information, see the "Viewing Logs in PowerFlow" chapter of the ***SL1PowerFlow Platform*** manual.
- For known failure conditions, a more user-friendly error message appears in place of the more complex stack trace error message from previous versions of the PowerFlow platform.

## Features Included in Version 2.0.3

This version did not contain any new features.

## Features Included in Version 2.0.2

This version did not contain any new features.

## Features Included in Version 2.0.1

This version did not contain any new features.

## Features Included in Version 2.0.0

This version included the following features:

- The PowerFlow user interface was updated to match the SL1 user interface, with the navigation tabs now located on the left-hand side of the window. The tabs provide access to the following pages: **Dashboard**, **SyncPacks**, **Applications**, **Configurations**, and **Reports**. Also, a number of text buttons were replaced with icon buttons, and the user interface was updated to display human-readable names and labels without underscores. For more information, see the ***SL1PowerFlow Platform*** manual.
- The **About** page (username > About) of the PowerFlow user interface includes the version numbers for the API Package, the Common Package, and the GUI, along with information about the license used by PowerFlow.
- In the new **Notification Center** pane (username > Notifications) you can view a log of all previous notifications that appeared on the PowerFlow system. From the **Notification Center** pane, you can click links that appear in notifications and go to that run of an application.
- Security for PowerFlow was enhanced. If a user does not enter a password after a certain amount of time, the SSH session with the PowerFlow server times out. Also, SSH sessions will time out after a certain amount of time, unless overridden by user.
- You can apply the new **log_rollover** environment variable to steprunner services to control the number of log file backups that are present when logging to files. The default setting for this variable is five backups.
- While the **SyncPacks**, **Applications**, **Configurations**, **Reports**, and **Admin Panel** pages are loading, a dark green, horizontal line appears at the top of the page until the loading is complete.
- The new **Dashboard** page in the PowerFlow user interface displays a list of the active, processed, failed, succeeded, and retried tasks on that PowerFlow instance. This page is now the initial landing page after you log in, and it is the default page when navigating to the instance.
- The **Dashboard** page includes interactive graphs that display task status, worker status, and application status.
- The new **SyncPacks** page in the PowerFlow user interface lets you import and install Synchronization PowerPacks. By default, the **SyncPacks** page displays all activated SyncPacks. You can click the Show All SyncPacks toggle at the top of the **SyncPacks** page to view all versions of all available SyncPacks.
- If you click the name of a SyncPack on the **SyncPacks** page, you can view more information about the SyncPack package and its contents, include the applications, configurations, and steps included in that SyncPack.

- You can access the logs related to SyncPack installation and activation by clicking the icon in the **Activation** column for that SyncPack on the **SyncPacks** page.
- SyncPack developers can create new SyncPacks that contain a custom set of applications, configuration objects, and steps. Developers can then export and share that SyncPack with other PowerFlow users. For more information, see the***SL1 PowerFlow for Developers*** manual.
- SyncPack developers can define step parameters as constants and use those parameters in multiple applications and steps.
- All ServiceNow-specific content, including applications, steps, and configuration objects, were moved from the PowerFlow platform and into separate ServiceNow SyncPacks.
- The existing base steps from previous versions of PowerFlow were added to the *ServiceNow Base Steps*Synchronization PowerPack. This Synchronization PowerPack is added to the **SyncPacks** page when you install or upgrade to PowerFlow version 2.1.1.
- The ***SL1PowerFlow Developers Guide*** version 2.0.0 was updated with new information about creating content for the PowerFlow, including creating SyncPacks, applications, and steps; editing the components in a SyncPack, and adding custom libraries to a SyncPack.
- On the **Applications** page, you can create new applications and new steps for applications. You can also edit and delete existing applications, and you can edit and delete the code for existing steps.
- The **SyncPack** column on the **Applications** page lists the name of the SyncPack to which a specific application belongs, where relevant.
- You have the following options when running an application from an **Integration Application** page:
    - ***Run***. Executes the application normally, with a log level of 1. This is the default.
    - ***Debug Run***. Executes the application in Debug Mode with a log level of 10.
    - ***Custom Run***. Executes the application using a logging level that you specify, along with any customer parameters you want to use to test specific features in the application.
- The backup and restore applications were updated to enable the backup of SyncPack data. The "PowerFlow Backup" application includes two new fields on the **Configuration** pane: ***include_syncpacks*** and ***installed_only***. The "PowerFlow Backup" application includes two new fields: ***include_syncpacks*** and ***force_syncpack_upload***. Also, the "is-system-backup-configuration-example" configuration object was added to the System Utils SyncPack along with the update backup and restore applications.
- The ***SL1PowerFlow Developers Guide*** version 2.0.0 contains information about the ability to specify the queues where steps can execute when running an application.
- The **Steps Registry** pane on the **Applications** page was updated to show all steps available on the PowerFlow server. You can click the Actions button on a step in the registry to view more information about that step and to edit the step code.
- You can add mock data to a step in an application and click **Custom Run** to run test data for that step.
- To view a pop-up description of a field on the **Configuration** pane for an application, hover over the label name for that field.
- When you run an application and a warning occurs in the step logs for that application, the box around the step with the warning will be outlined in yellow to draw attention to it.
- The **Configurations** page includes an Actions button that lets you edit or delete a specific configuration object.

- When creating or editing a configuration object on the **Configurations** page, the name-value pairs in the Configuration Data section display in text fields by default instead of a block of JSON code. For more complex configuration objects, you can use the Toggle JSON Editor button to switch between text fields and JSON code for the configuration data.
- You can make copies of existing configuration objects to simplify deployment.
- You can view reports from the "PowerFlow System Diagnostics" application on the new **Reports** page.
- You can integrate PowerFlow version 2.1.1 with LDAP, Active Directory, SAML 2.0, and other authentication providers to support multiple users on the platform.
- On the new **Admin Panel** page, if you have the *Administrator* role, you can create one or more user groups to define the different roles for your users. Depending on their roles and permissions, users have access to certain features, or they are blocked from certain features. Roles include *Administrator*, *Develop*, *Configure*, *Execute*, and *View*, and these roles are defined in the ***SL1PowerFlow Platform*** manual.
- The new **/syncpacks** API endpoint lets you POST, GET, and DELETE SyncPack data, including installing SyncPacks. For more information, see the "API Endpoints" chapter in the ***SL1PowerFlow Platform*** manual.
- The new **/license** API endpoint lets you POST, GET, and DELETE licensing data.
- The new **/roles** and **/roles/owner** API endpoints lets you POST, GET, and DELETE roles assigned to users.
- If you want to make inbound requests to PowerFlow from an external system where customizing the POST payload is not possible, you can pass in parameters as part of an API request.
- The process for upgrading to version 2.0.0 of PowerFlow includes a number of required steps. You can perform these upgrade steps manually, or you can run the **is_upgrade_to_2.0.0.sh** script to perform the upgrade steps automatically. An additional script is available for clustered environments. For more information, see the "Upgrading PowerFlow" topic in the "Installing and Configuring SL1PowerFlow" chapter in the ***SL1PowerFlow Platform*** manual.
- To access this release, you need to create and upload a license key to your PowerFlow instance. For more information, see the "Licensing the PowerFlow" topic in the "Installing and Configuring" chapter of the ***SL1PowerFlow*** manual.
- All common packages and Synchronization PowerPacksrun on Python 3.6. Python 2.7 is no longer supported.
- To support the new features on the **SyncPacks** page, a new Python Package Index (PyPI) service was added to the PowerFlow stack. When deploying PowerFlow in a cluster setup, and not using network-aware volumes, the PyPI server must be "pinned" to a specific node with constraints. Pinning the PyPI server to a single node ensures that its persistent volume containing the SyncPacks will always be available to PowerFlow.
- All Dex and lua-resty-oidc module configuration for PowerFlow authorization is included in the **isconfig.yml** file located at **/etc/iservices/**.
- Updated the **is_gui** image to deploy only one replica per node to let PowerFlow administrators scale the user interface for PowerFlow for multiple nodes.
- PowerFlow administrators can use a command-line utility called ***iservicecontrol*** that performs multiple administrator-level actions on either the node or the cluster. You can use this script to automate the configuration of a three-node cluster. For more information, see the "Configuring PowerFlow for High Availability" chapter of tthe ***SL1PowerFlow*** manuall.

- The ***SL1PowerFlow*** manual was updated to explain how multi-tenant deployments can use separate virtual hosts and users for each tenant. For more information, see the "Advanced RabbitMQ Administration and Maintenance" topic in the appendix.

# Known Issues

This release contains the following known issues:

- If your PowerFlow system uses self-signed certificates, you will need to manually accept the certificate before you can upload Synchronization PowerPacks. Go to **https://*<IP address of PowerFlow>*:3141/isadmin**, accept the certificate, and then log into PowerFlow. After you log in, you will be able to upload Synchronization PowerPacks.
- The *latest* tag does not exist after the initial ISO installation. This situation only affects users with custom services that point to the *latest* tag. To work around this issue, run the tag latest script manually after running the `./pull_start_iservices.sh` command:

  ```
  python /opt/iservices/scripts/system_updates/tag_latest.py
  /opt/iservices/scripts/docker-compose.yml
  ```

## Known Issues in Previous Versions

The following known issues first appeared in version 2.1.0, and they were addressed in version 2.1.1:

- If you are using a new (non-upgrade) ISO installation of Integration Service version 2.1.0, new Synchronization PowerPack installations might fail with the following error message: "pip._ internal.exceptions.DistributionNotFound: No matching distribution found for ipaascommon". These Synchronization PowerPack installation failures occur if your Integration Service instance is connected to the Internet, as the 2.1.0 version of the Integration Service is trying to connect to a faulty version of pip.
- If you use the **ispasswd** script to change the Linux Host OS SSH password for a PowerFlow server, the script will fail and will not update the couchbase and pypiserver services password.

The following known issue first appeared in version 2.0.1, and it was addressed in version 2.0.2:

- You must edit the code in the JSON Configuration editor if you want to add data to the **customer_ci_relation_overrides** application variable in the "Sync Devices from SL1 to ServiceNow" application. Click the Show JSON Configs button on the **Configuration** pane to access the JSON code.

# System Requirements

The PowerFlow platform does not have a specific minimum required version for SL1. However, certain PowerFlow Synchronization PowerPacks have minimum version dependencies. Please see the documentation for those Synchronization PowerPacks for more information on those dependencies.

**NOTE:** The default internal network used by PowerFlow services is **172.21.0.1/16**. Please ensure that this range does not conflict with any other IP addresses on your network. If needed, you can change this subnet in the **docker-compose.yml** file.

ScienceLogic highly recommends that you disable all firewall session-limiting policies. Firewalls will drop HTTPS requests, which results in data loss.

**NOTE:** The PowerFlow operating system is an Oracle Linux distribution, and all patches are provided within the standard Oracle Linux repositories. The patches are not provided by ScienceLogic.

**TIP:** For more information about system requirements for your PowerFlow environment, see the System Requirements page at the ScienceLogic Support site.

The following table lists the port access required by PowerFlow:

| Source IP | PowerFlow Destination | PowerFlow Source Port | Destination Port | Requirement |
|---|---|---|---|---|
| PowerFlow | SL1 API | Any | TCP 443 | SL1 API Access |
| SL1 Run Book Action | PowerFlow | Any | TCP 443 | Send SL1 data to PowerFlow |
| Devpi | PowerFlow | Any | TCP 3141 | Internal Python package repository for Synchronization PowerPacks; check for self-certification for PowerFlow |
| Dex Server | PowerFlow | Any | TCP 5556 | Enable authentication for PowerFlow |
| PowerFlow | SL1 Database | Any | TCP 7706 | SL1 Database Access |
| Docker Visualizer | PowerFlow | 8081 | n/a | Docker Visualizer (**http://** only) **NOTE**: Docker Visualizer is an optional dashboard that displays how PowerFlow containers are deployed throughout the cluster. Disabling this port will have no operational effect. |
| Couchbase Dashboard | PowerFlow | 8091 | n/a | Couchbase Dashboard (use your PowerFlow credentials) |
| RabbitMQ Dashboard | PowerFlow | 15672 | n/a | Rabbit MQ Dashboard (use *guest/guest*for credentials) |

# Installing PowerFlow 2.1.1

For detailed steps about installing PowerFlow, see the "Installing and Configuring PowerFlow" chapter in the ***SL1 PowerFlow Platform*** manual.

**WARNING:** If you are using the *ServiceNow CMDB* Synchronization PowerPack, PowerFlow 2.1.1 requires version 3.1.1 of that Synchronization PowerPack. You can download this Synchronization PowerPack from the Synchronization PowerPack Downloads page.

# Upgrading to PowerFlow 2.1.1

This topic explains at a high level how to upgrade to PowerFlow version 2.1.1. For the complete procedures for upgrading PowerFlow, see the "Upgrading PowerFlow" topic in the "Installing and Configuring SL1 PowerFlow" chapter in the ***SL1 PowerFlow Platform*** manual.

**WARNING:** If you made any customizations to default PowerFlow applications or steps that shipped with previous versions of PowerFlow, you will need to make those customizations compatible with Python 3.6 or later *before* upgrading to version 2.0.0 or later from version 1.8.x of PowerFlow.

**WARNING:** If you made any modifications to the nginx configuration or to other service configuration files outside of the **docker-compose.yml** file, you will need to modify those custom configurations before upgrading, or contact ScienceLogic Support to prevent the loss of those modifications.

**NOTE:** After upgrading to PowerFlow version 2.1.1, ensure that the PowerFlow platform is stable and that you do not wish to roll back to a previous version before you start installing or updating Synchronization PowerPacks. After you update the content on the PowerFlow platform, rolling back to a previous platform version requires restoring from a backup. After upgrading the platform to 2.1.1, the database version is updated to couchbase-community 6.0.2.x . You can roll back PowerFlow versions, but you should not roll back the database version.

## Upgrading to Version 2.1.1 from Version 2.0.x

To upgrade to PowerFlow version 2.1.1 from version 2.0.x:

1. Download the PowerFlow2.1.1 RPM and copy the RPM file to the PowerFlow system.
2. Either go to the console of PowerFlow or use SSH to access the server.
3. Log in as ***isadmin*** with the appropriate (root) password. You must be root to upgrade using the RPM file.

4. Type the following at the command line:

   ```
   rpm –Uvh full_path_of_rpm
   ```

   where:

   *full_path_of_rpm* is the name and path of the RPM file, such as **sl1-integration-services-1.x.x-1.x86_64**.

> **NOTE**: If you are running PowerFlow in a clustered environment, install the RPM on all nodes in the cluster before continuing with the remaining steps.

5. If the upgrade process recommends restarting Docker, run the following command:

   ```
   systemctl restart docker
   ```

6. After the RPM is installed, run the following Docker command:

   ```
   docker stack rm iservices
   ```

> **NOTE:** If you want to upgrade your services in place, without bringing them down, you may skip this step. Please note that skipping this step might take the services slightly longer to update.

7. Re-deploy the Docker stack to update the containers:

   ```
   docker stack deploy -c /opt/iservices/scripts/docker-compose.yml iservices
   ```

8. After you re-deploy the Docker stack, the services automatically update themselves. Wait a few minutes to ensure that all services are updated and running before using the system. You can use the visualizer at port 8080 to monitor the progress of the updates.
9. To view updates to each service and the service versions for services throughout the whole stack, type the following at the command line:

   ```
   docker service ls
   ```

   You will notice that each service now uses the new version of PowerFlow.

## Upgrading to Version 2.1.1 from Version 1.8.x

The process for upgrading to version 2.1.1 from version 1.8.***x*** of PowerFlow includes the following required steps:

1. Upgrade the host packages and Python 3.6 (previous versions of PowerFlow used Python 2.6).
2. Upgrade to Oracle 7.3 or later.
3. Upgrade to Docker version 18.09.2 or later.

> **NOTE:** PowerFlow version 2.0.0 or later requires the **docker-ce 18.09.2** or later version of Docker. The PowerFlow ISO installs the **docker-ce 19.03.5** version of Docker by default, but if you are upgrading to this version from the RPM, you must first upgrade Docker before you upgrade PowerFlow with the RPM.

4. Install the PowerFlow upgrade RPM.
5. Update the PowerFlow system from Basic Authentication to OAuth 2.0.
6. Set up licensing for PowerFlow. After installation, you must license your PowerFlow system to enable all of the features. For more information, see the "Managing Licenses for PowerFlow" chapter in the ***SL1 PowerFlow Platform*** manual.

> **NOTE:** If you are not deploying PowerFlow on a production or pre-production environment, you can skip the licensing process.

Please note that upgrading to version 2.1.1 from 1.8.x *will* involve some downtime of PowerFlow.

You can perform the upgrade steps manually, or you can run the **is_upgrade_to_v2.sh** script to perform the upgrade steps automatically. The script upgrades PowerFlow from 1.8.x to 2.1.1.

To locate the upgrade script:

1. Go to the ScienceLogic Support site at https://support.sciencelogic.com/s/.
2. Click the **Product Downloads** tab and select *PowerFlow*. The **PowerFlow Release** page appears.
3. Click the "PowerFlow 2.0" link. The **PowerFlow 2.0 Release Version** page appears.
4. In the **Release Files** section, click the "1.8.X to 2.x.x Upgrade" link for the script. A **Release File** page appears.
5. Click **Download File** at the bottom of the **Release File** page. The **is_upgrade_to_v2.sh** script is in the **is_upgrade_tools.zip** file.

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