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Lab Guide

Team Development:
Beyond Update Sets

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Default Login / Password:

admin / Knowledge15

itil / Knowledge15

employee / Knowledge15

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Lab Goal

This lab explains how to set up and work with Team Development

- Set up your ServiceNow instances for Team Development
- Get to know the Team Dashboard
- Understand Local Changes

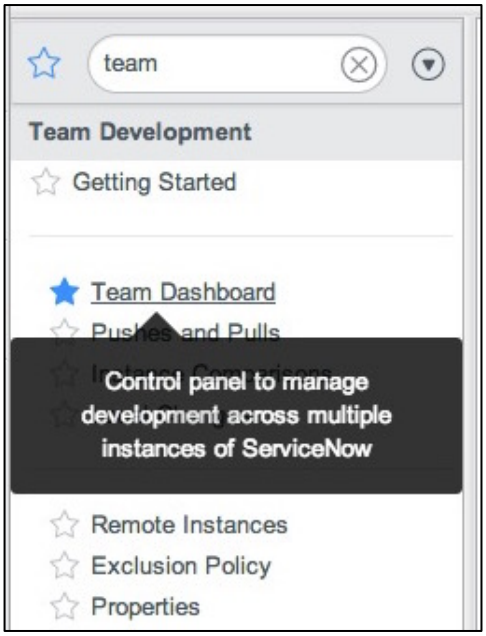
Lab 1
Setup and the Basics

Access Your Instances

You will be provided two instances to use for this lab.

1. Identify which instance is your child development instance and which is your parent instance. Log on to your **child** development instance using the admin credentials.

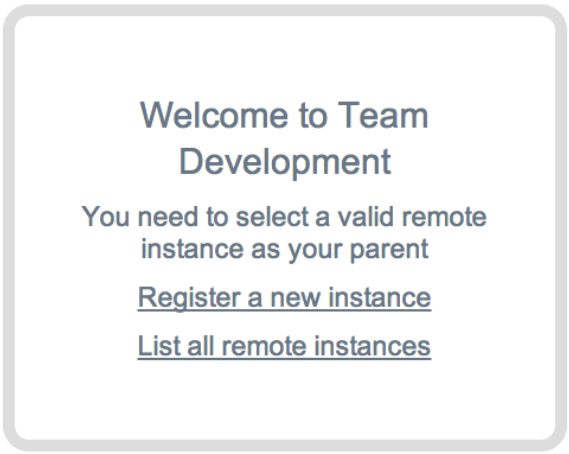
2. Navigate to **Team Development > Team Dashboard**.



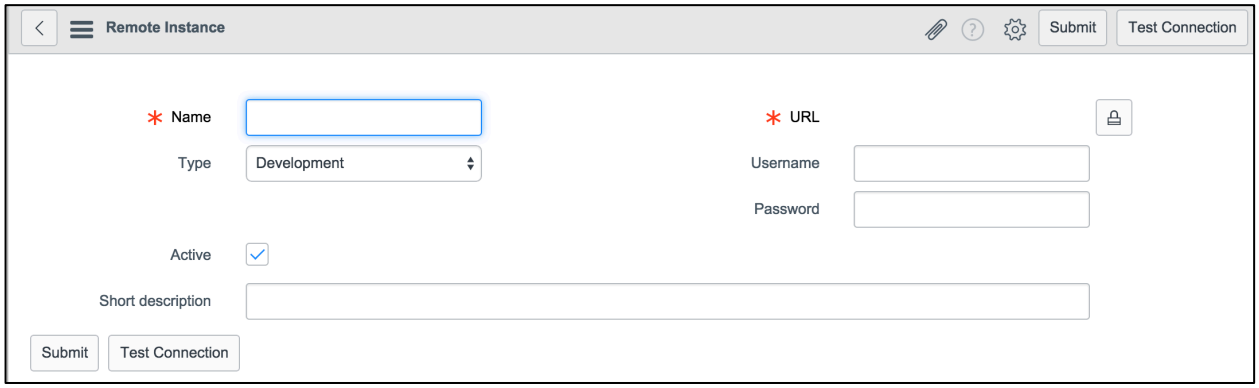
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Register Your Parent Instance

1. Click the **Register a new instance** link.

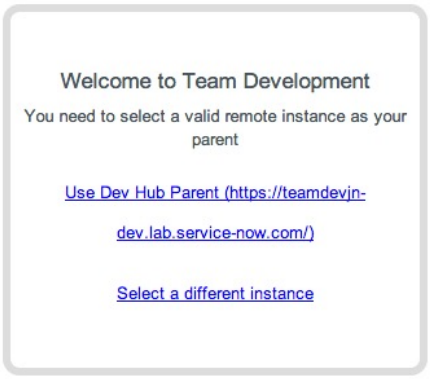


2. Enter the **parent** instance values provided when you received your lab instances, URL, and credentials. Specify the name as "Dev Hub". Click the **Test Connection** to confirm a successful connection with your parent instance. Click the **Submit** button.



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3. The instance is now registered. Click **Use Dev Hub (https://<yourparentinstance>.lab.service-now.com)** to select it as the parent.



4. The child instance compares itself with the parent and produces a list of Local Changes. This Reconcile process takes longer if there are more versions your parent instance. In this lab, you have almost no existing versions; the process completes quickly.



Local Changes are tracked relative to the current parent instance. If you switch parent instances, the new parent may already have your local changes. Thus a reconciliation process is needed whenever you select or switch parents.

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Customize Your Dev Hub (Parent) Instance

It is important to know on which instance you are working. Use System Properties and CSS to make that clear.

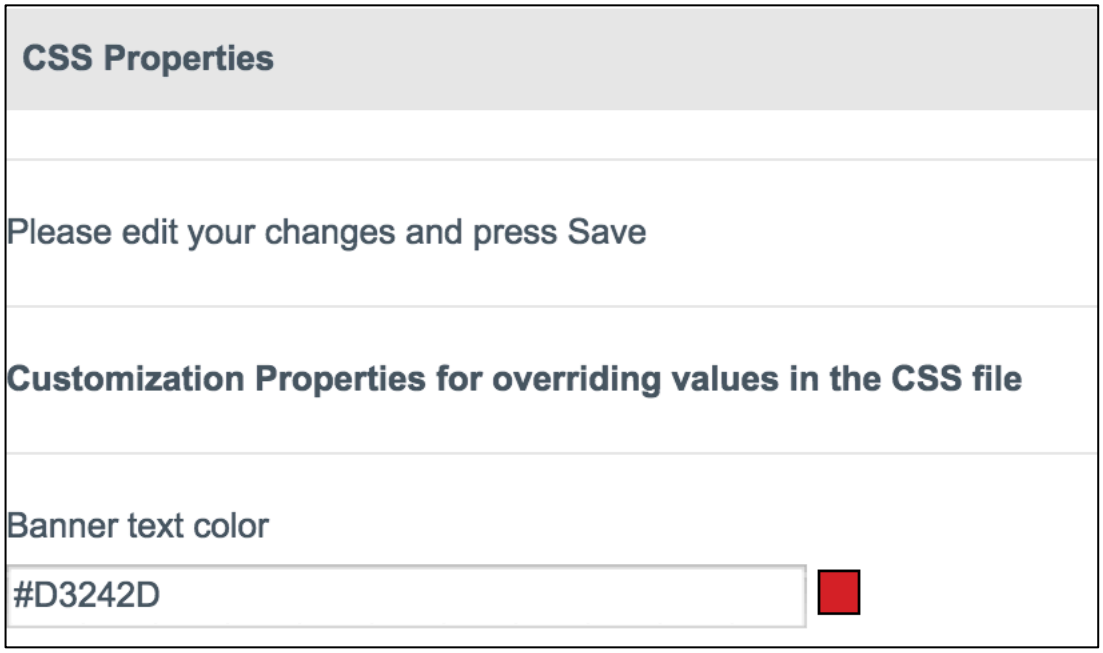
1. Log on to your **parent** instance.
2. Navigate to **My Company**.
3. Change banner text to **Dev Hub Parent:**



4. Select the **Update** button to save the change.
5. Navigate to **System Properties > CSS**.

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6. Change **Banner text color** to **#D3242D** (the bright red used by ServiceNow).



7. Click **Save**, then refresh your browser window to see your changes reflected in the banner.



Customize your Child Instance

Repeat the steps above on your child instance, using the title **Dev Hub Child** and the color **#339933**.

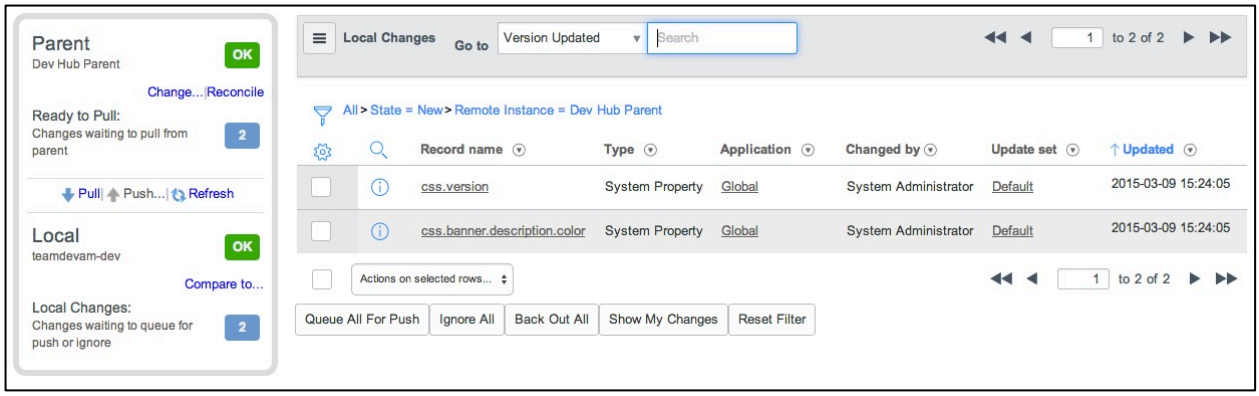
1. Log on to your **child** instance.
2. Navigate to **My Company**.
3. Change **Banner text** to the title **Dev Hub Child**, and click **Update**.
4. Navigate to **System Properties > CSS**.
5. Change **Banner text color** to **#339933**, click **Save,** and refresh your browser once more.

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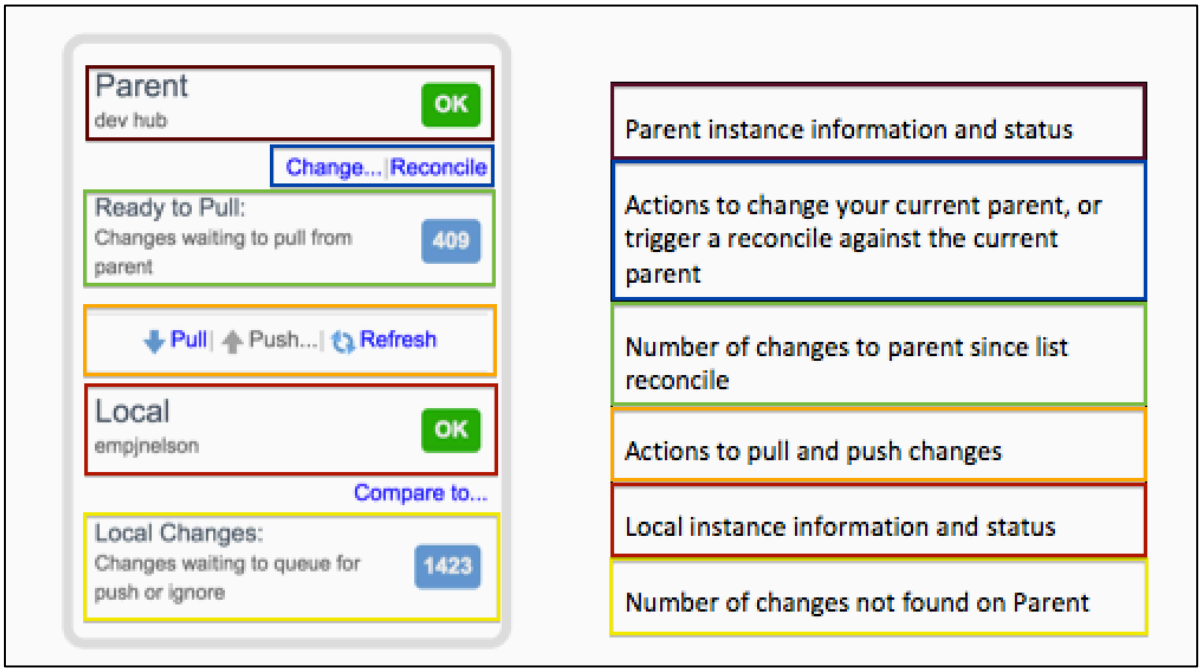
Understand Your Changes (Child Instance)

The changes made on your parent instance and your child instance affects the Team Dashboard. This lab section explores the Dashboard changes.

1. On your child instance, navigate to **Team Development > Team Dashboard**.



2. Now under **Local** Changes, you see the system property changes you just made. You also see in the left-side control panel some interesting controls and notifications.



As a result of your System Properties customizations on both the child and the parent instances, we see both local changes and remote changes are ready to pull.

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Lab Success Verification

- ✓ You should now have your instances configured with your Dev Hub parent and are now ready to start developing in parallel.
- ✓ You have a few changes ready to pull from your parent to your child and a few local changes available to push from your child to your parent.
- ✓ You understand the basic features and controls of the Team Dashboard and are ready to do some actual work!

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Lab Goal

This lab explains how to **back out** changes you do not wish to keep.

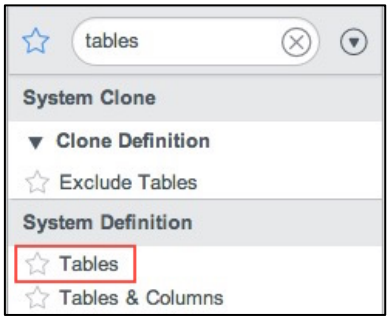
Lab 2
Back Out Unwanted Changes

Create a Field (Child Instance)

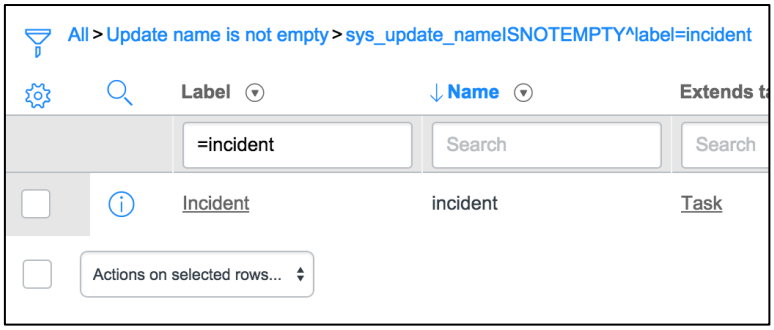
In this example, add a new True/False field to the Incident form to identify showstopper incidents.

Note: *You will be purposely be making a mistake here.*

1. On your **child** instance, navigate to **System Definition > Tables**.

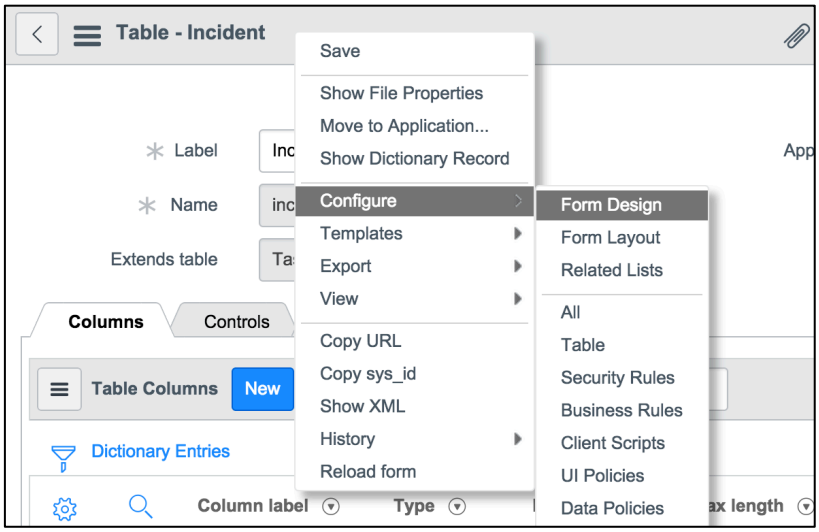


2. Locate the **Incident** table in the list by filtering by label. Open the Incident table form by clicking its name.

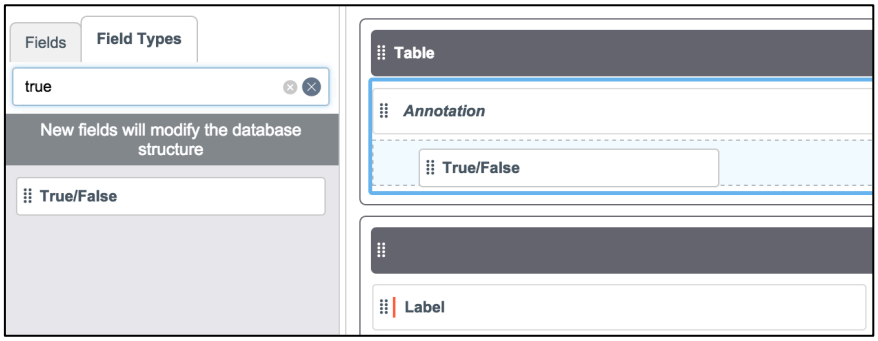


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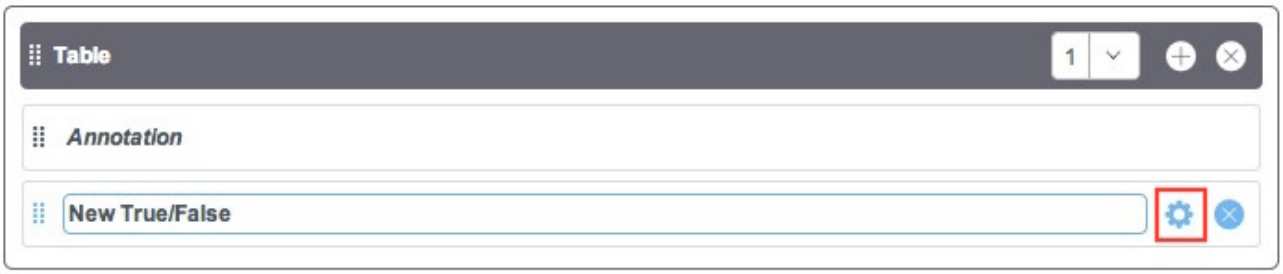
3. On the table form, right-click the header and select **Configure > Form Design**.



4. Under **Field Types**, enter **true** and drag and drop a **True/False** field under the **Annotation** field



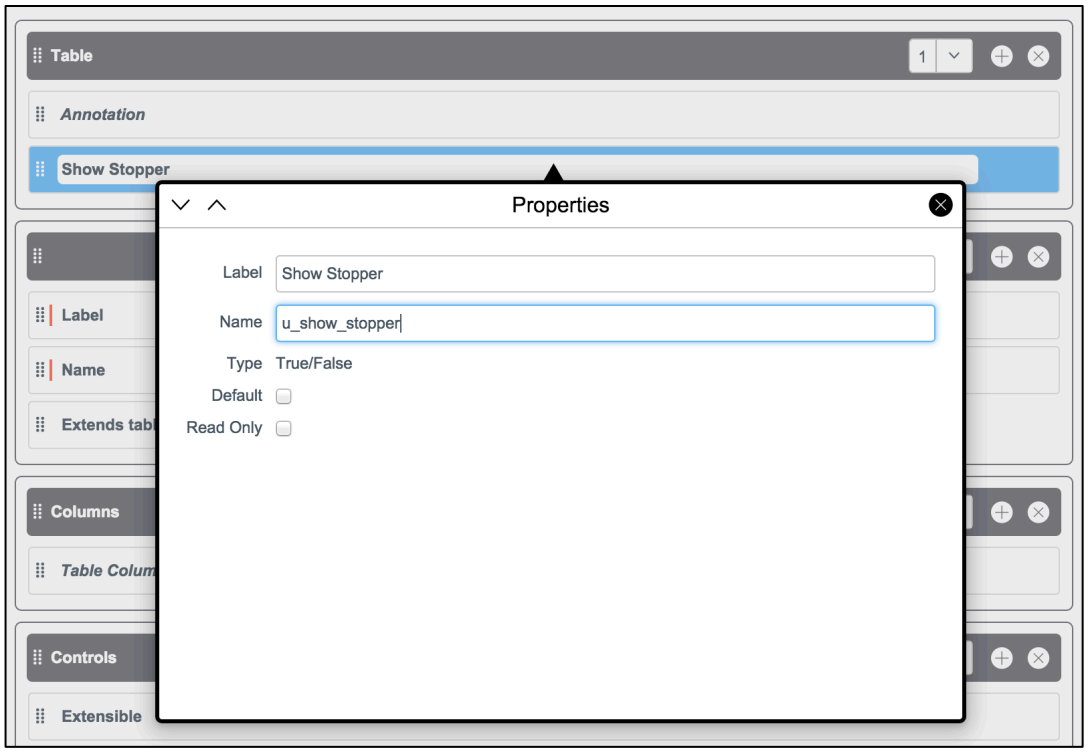
5. Click the **Cog Wheel** to personalize the new True/False field.



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6. Edit the True/False field with the following:

   Label: **Show Stopper**
   Name: **u_show_stopper**

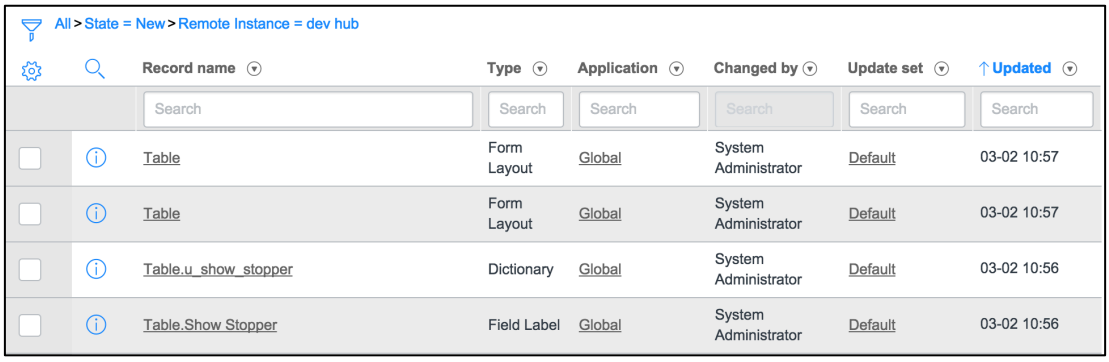


7. Close the properties dialog by clicking the X in the upper right corner and then click Save.

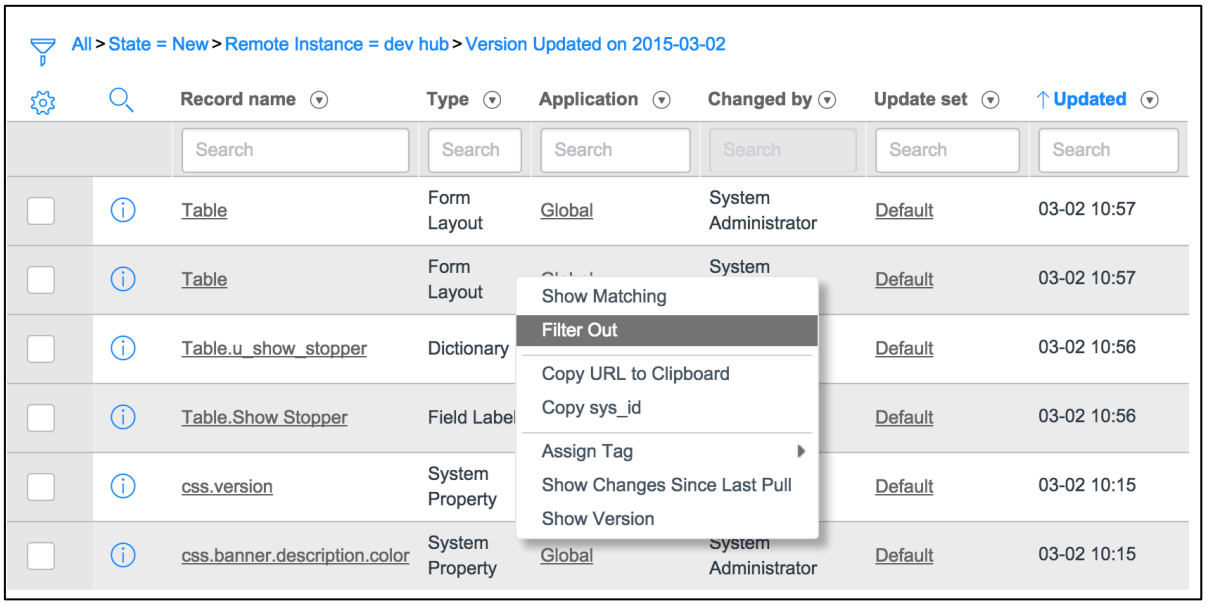
8. At this point, you realize that instead of customizing the Incident table you've customized the system dictionary – whoops! Continue with the remaining steps in the lab to undo this mistake.

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9. Navigate to **Team Development > Team Dashboard**. Find the changes just made in the **Local Changes** list.



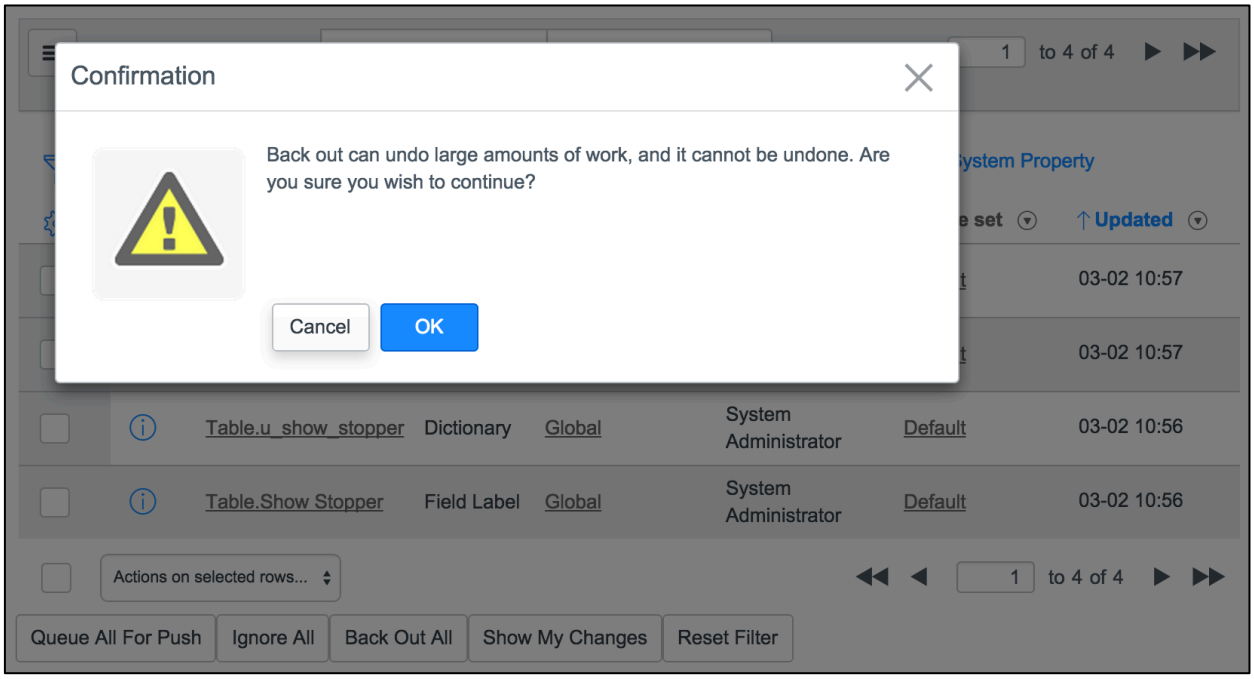
10. If there are more changes than needed, sort the list by clicking the **Updated** column to display most recent updates first. Then right-click the cell that has a **Type** of **System Property** and select **Filter Out**. (Or filter out changes you wish to keep by other criteria.)



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11. When the local change list shows only those changes you wish to back out, click **Back Out All**.

    Warning: Back Out All will back out all changes displayed in list view regardless of whether they are "checked" or not. Confirm list is only displaying changes you want to back out. When prompted to confirm, double-check that you have indeed filtered for the changes you wish to back out. This cannot be undone. When ready, click **OK** on the Confirmation dialog**.**



12. Navigate to **System Definition > Tables**.

13. Right-click the list header and select **Configure > List Layout**. Verify that the **Show stopper** field accidentally added to table is no longer present.

Back Out Change does more than just revert versions. It determines the last version pulled from or pushed to your parent instance, if any, and revert to that. Or, if no such version can be found, the record and its version history are completely erased.

Lab Success Verification

✓ You learned how to back out one or more local changes.

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Lab Goal

Lab 3
Pulling Changes

This lab explains how to work with changes and resolve change issues. In the lab, you complete the following actions:

- Learn how to **pull** changes from your parent
- **Resolve collisions** when other people change the same files
- **Ignore** local changes that you never want to push upstream.
- **Create** an application you can develop in parallel

Pull Changes from your Dev Hub (Child Instance)

Before getting started on your application, we will pull changes from your parent and resolve any collisions we find.

1. From **child** instance navigate to **Team Development > Team Dashboard**.

2. In the Team Dashboard control panel, click the **Pull** action. The standard progress worker dialog appear to report the pull status.



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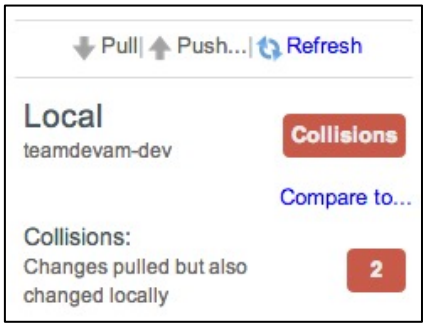
3. When the progress worker finishes, you should see a message, explaining that while the pull itself was successful, you encountered some anomalies. Your message should contain wording similar to the example (numbers will vary based on the actual changes you have made on the instance).

> *Pulled 10 versions of 8 files from parent but loaded 0 changes. The remaining changes were not loaded for the following reasons: 8 were private properties, 2 were collisions. Please resolve any collisions before continuing.*

This message means:

- Ten new versions were detected on your parent since the last time you pulled or reconciled. Those modifications were made to distinct files, which means the same record was modified multiple times, and you pulled both the current and the historical versions.
- Of all ten versions, none were actually loaded. (**Loaded** means the change was actually committed to the target table in the local instance.)
- Of the remaining, two versions resulted in collisions. This makes sense, since you modified the same two system properties on both child and parent instances. These are not loaded unless you decide to do so while resolving each collision (which we will do later).
- The remaining three were all new historical versions, inserted locally but not loaded. Only current versions can be loaded. History versions are pulled and stored purely for historical reasons.

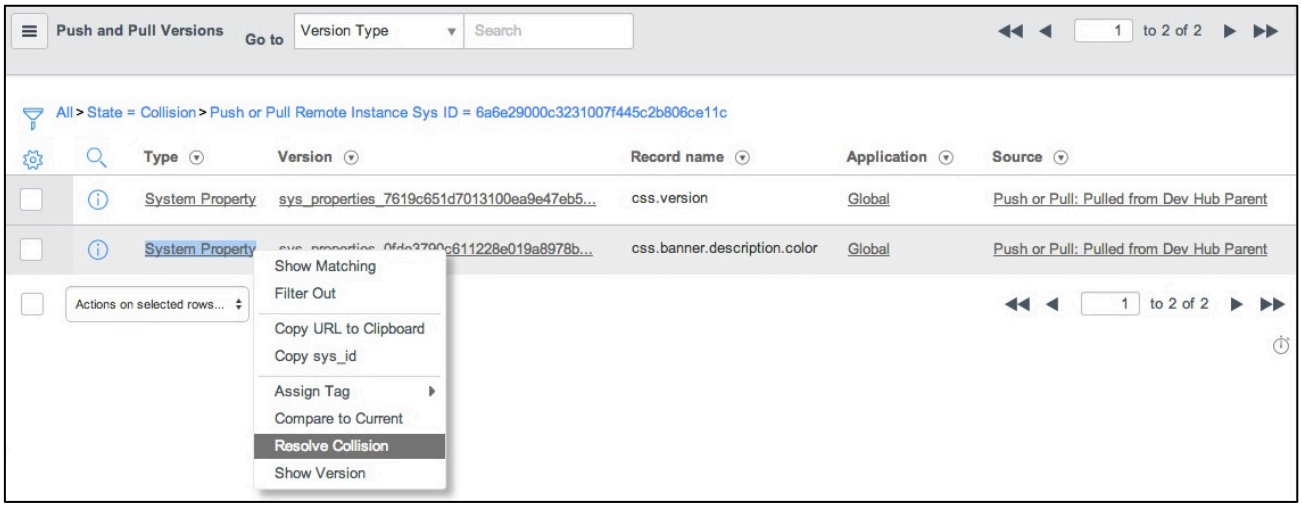
4. Click the **Team Dashboard** related link to return to the dashboard. Your control panel now shows the collisions to resolve.



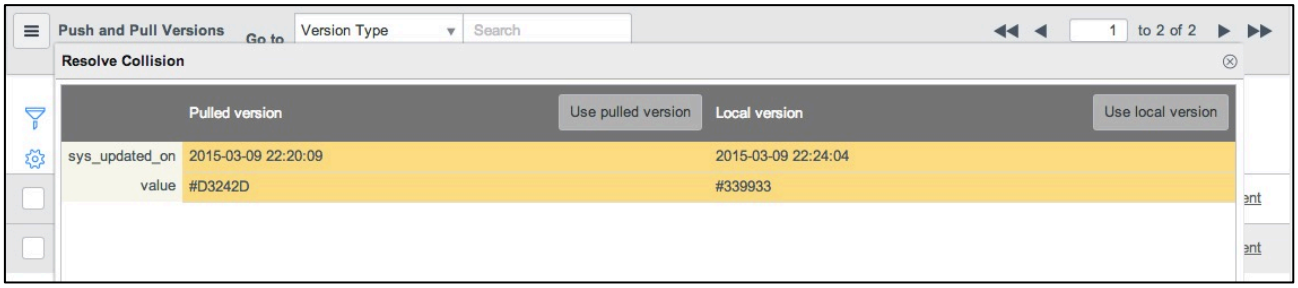
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5. The red **Collisions** box is a link. Click it to navigate to the list of colliding versions.

6. Right-click on one of the versions and select **Resolve Collision**



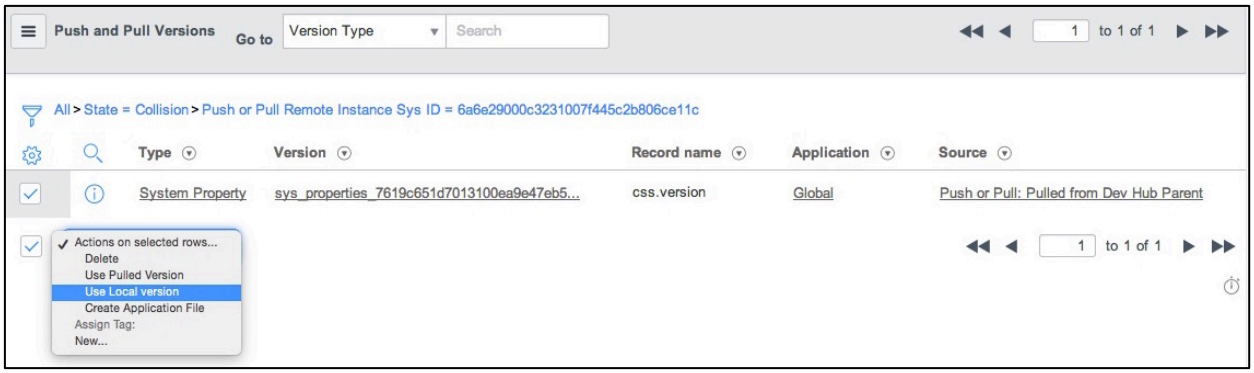
7. In the comparison popup window both versions appear: the pulled version from the parent, and the local version. In order to resolve this collision, click either the **Use pulled version** or the **Use local version** buttons.



Since these are the system properties you customized to uniquely identify your local instance, you want to keep the local changes. Since you do not want the child instance to look like the parent, click **Use local version**.

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8. There should be one remaining collision on the list. Since you already know what you want to do with it, without looking at them. In this case, you can use the choice list actions to resolve the collision without launching the comparison dialog. Select all rows and click **Use local version** from the list action menu.

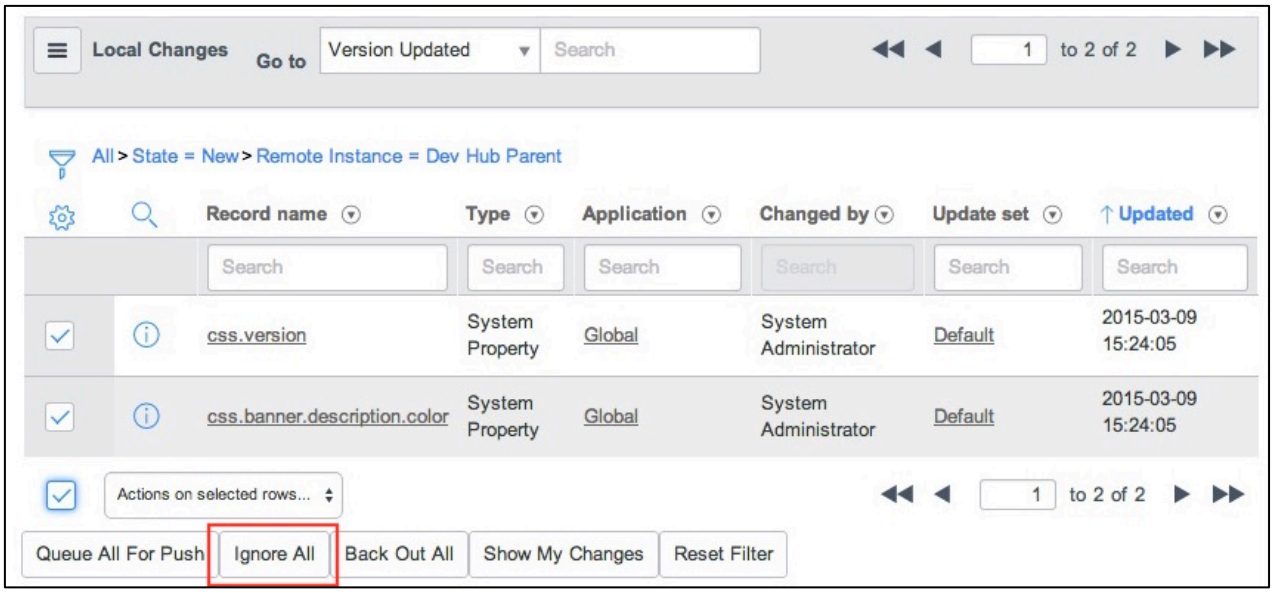


9. Navigate to **Team Development > Team Dashboard**, and look at the list of local changes.

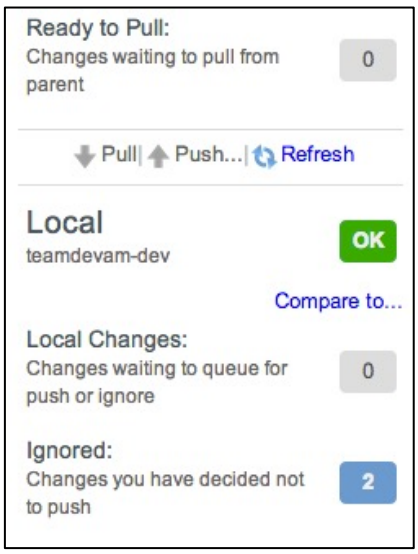
   You see the same two properties here because you chose to keep your local versions. However, not only do you *not* want to load these properties *from* your parent, you also do not want to ever *push* these properties *to* your parent. You also, however, do not want these appearing in your Local Changes list. In this case, choose to *ignore them*.

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10. Right click on 'Sytem Property' and select Show Matching so that the two system properties (**css.banner.description.color** and **css.version**) are the only items in the list and click the 'Ignore All' button (although the screen shot shows the items checked, the buttons act on what shown in the list, regardless of whether they are checked or not).



11. Once the page reloads, you should now see the control panel appears with no incoming changes, no local changes, no collisions, and three ignored changes.



Ignored changes are not lost. If you ignore a change, it is moved to the Ignored state and appears in the Ignored tab in your dashboard.

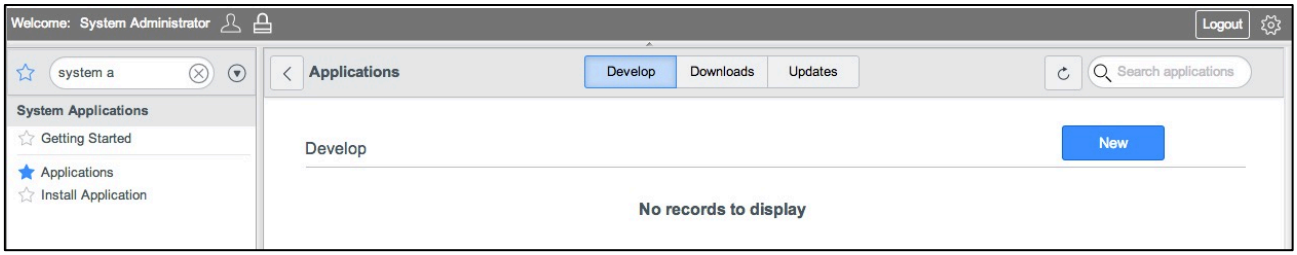
If you change your mind, find the change in the Ignored list and click **Do Not Ignore** from the list action menu.

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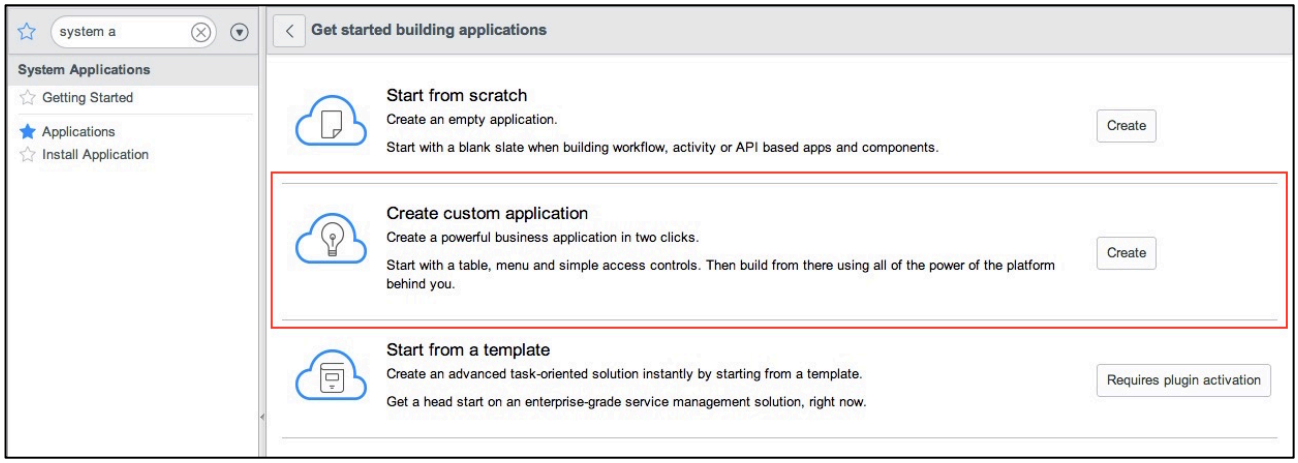
Create a New Application in your Dev Hub (Parent Instance)

In this exercise, you will create a new application in the parent instance (DEV HUB) and then pull it down into your child instances.

1. Log on to your **parent** instance (DEBV HUB PARENT) with admin credentials.
2. On your Dev Hub **parent** instance, navigate to **System Applications > Applications**.
3. Click **new**.

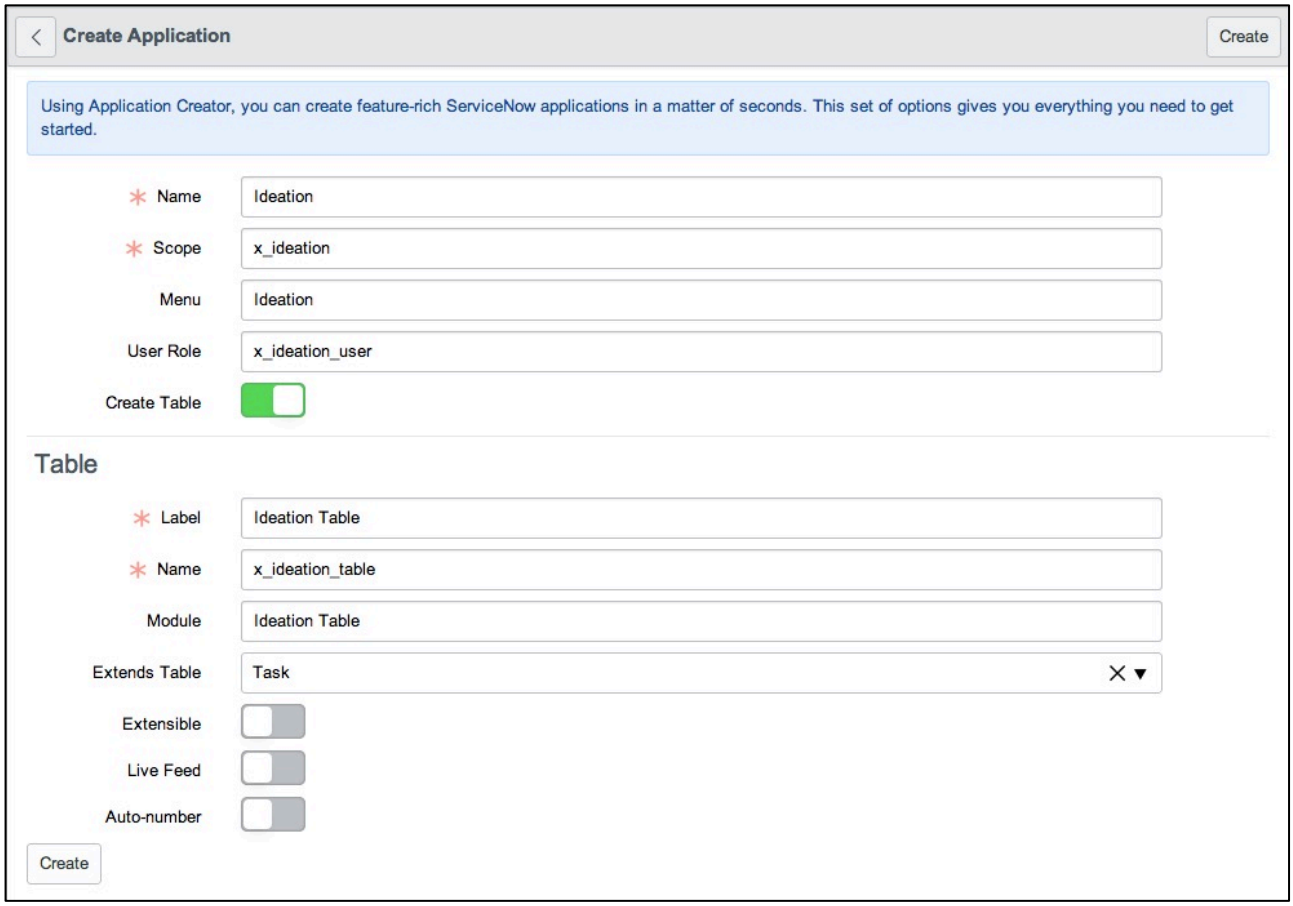


4. Select **Create custom application**



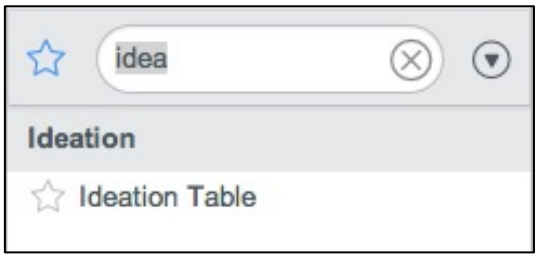
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5. Create an application called **Ideation** with a table Included that **Extends Table Task**.



6. Click **Create** to save the application.

7. Find the new application table in the navigator by typing **Idea**.



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Adding or changing files upstream has historically been frowned upon. If you make a change in production, for example, it is very important to make the same change in all of your sub-production instances as well. This is relatively expensive and error-prone if done manually or by creating an update set in production to be distributed elsewhere.

With Team Development, adding or changing files upstream is simple. Any change made upstream, such as creating the **Ideation** application, can be pulled to downstream instances with a single click as you will see below.

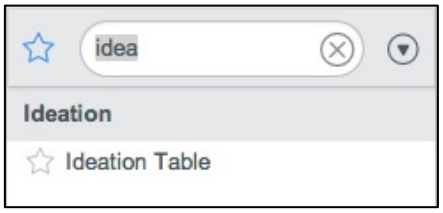
Pull your Application into your Child Instances (Child Instance)

Now that the application is available in your Dev Hub Child, you can pull it into your child instance.

1. On your own **child** instance, navigate to **Team Development > Team Dashboard**.
2. Click **Pull** in the dashboard control panel.

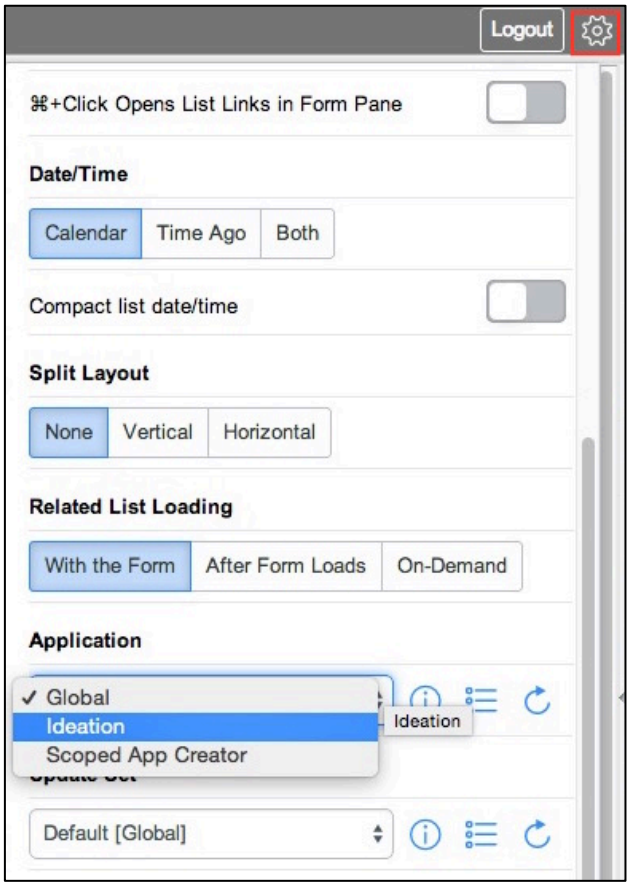


3. When finished, click the **Close** button to return from the progress worker results screen. There should be no further changes waiting to pull.
4. Navigate to **Ideation > Ideation Table** to see the application table pulled to your child instance.



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5. In the banner system menu, scroll to the bottom and select **Ideation** in the **Application** picker. This ensures all files you add going forward will be associated with your Ideation application.



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Lab Success Verification

- ✓ You learned how to **pull changes** made on your parent instance to your child instance with a single click.
- ✓ You understand how **collisions** occur and how to resolve them.
- ✓ You learned how and when to **ignore** local changes and how to prevent them from being pushed up to the parent.
- ✓ Your Ideation application, originally created on your parent Dev Hub is pulled, loaded, and functional on the child instance.

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Lab Goal

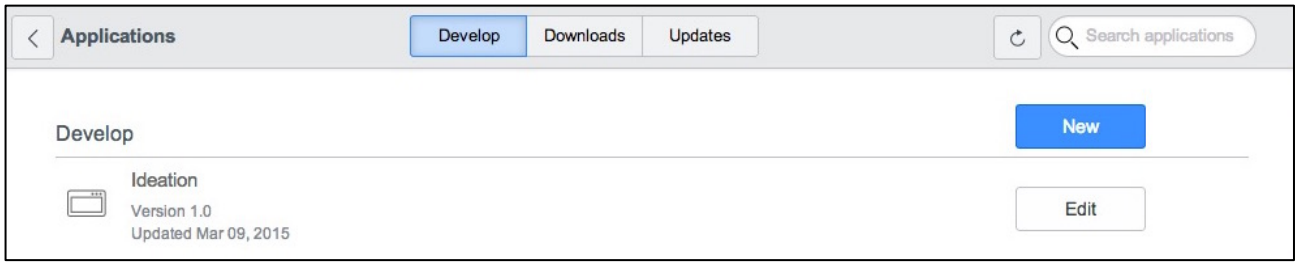
This lab explains how to make a few changes to an application in parallel on child instances and learn how to **push** them to the parent.

Lab 4
Pushing Changes

Learn How to Push Local Changes (Child Instance)

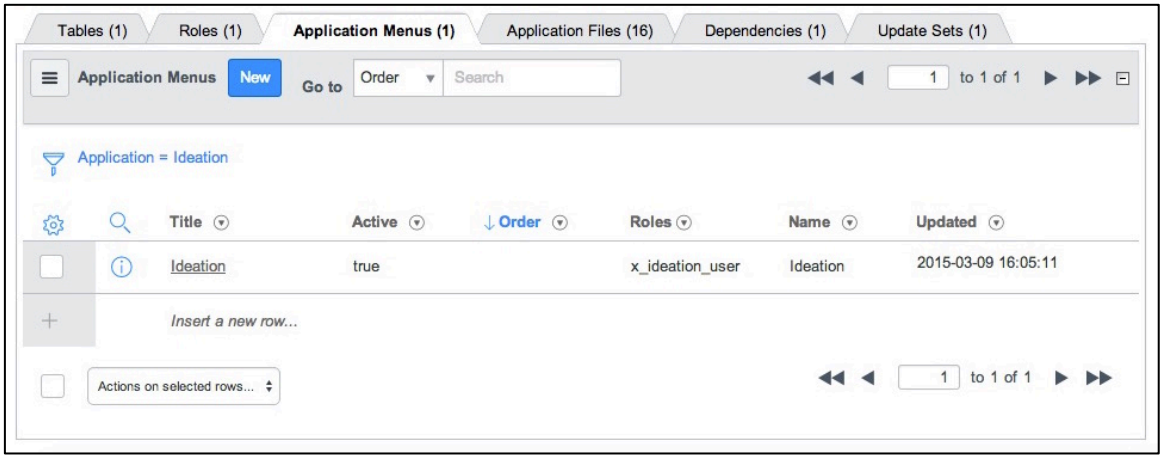
Read through the steps here to learn how to push changes then follow these steps.

1. Navigate to System **System Applications > Applications**.
2. Open **Ideation** application by clicking **Edit**.

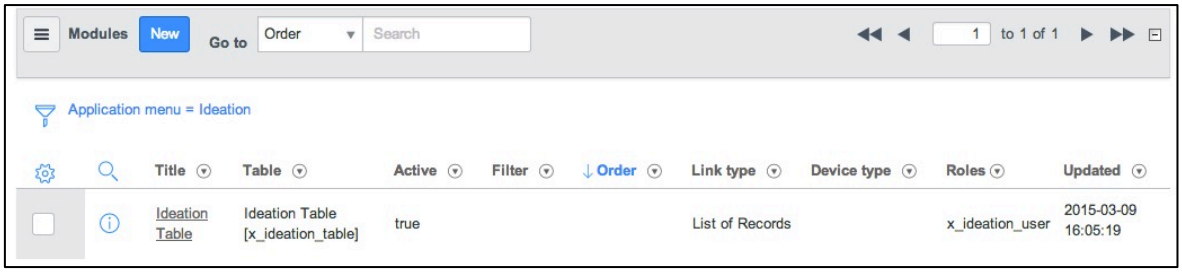


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3. Navigate to the ‘Application Menu’ tab/section and click into the Application Menu item with the Title ‘Ideation’ (The screenshot below shows a tabbed form. By default your instance will show an un-tabbed form. The names shown in the tabs will appear as sections in your form).

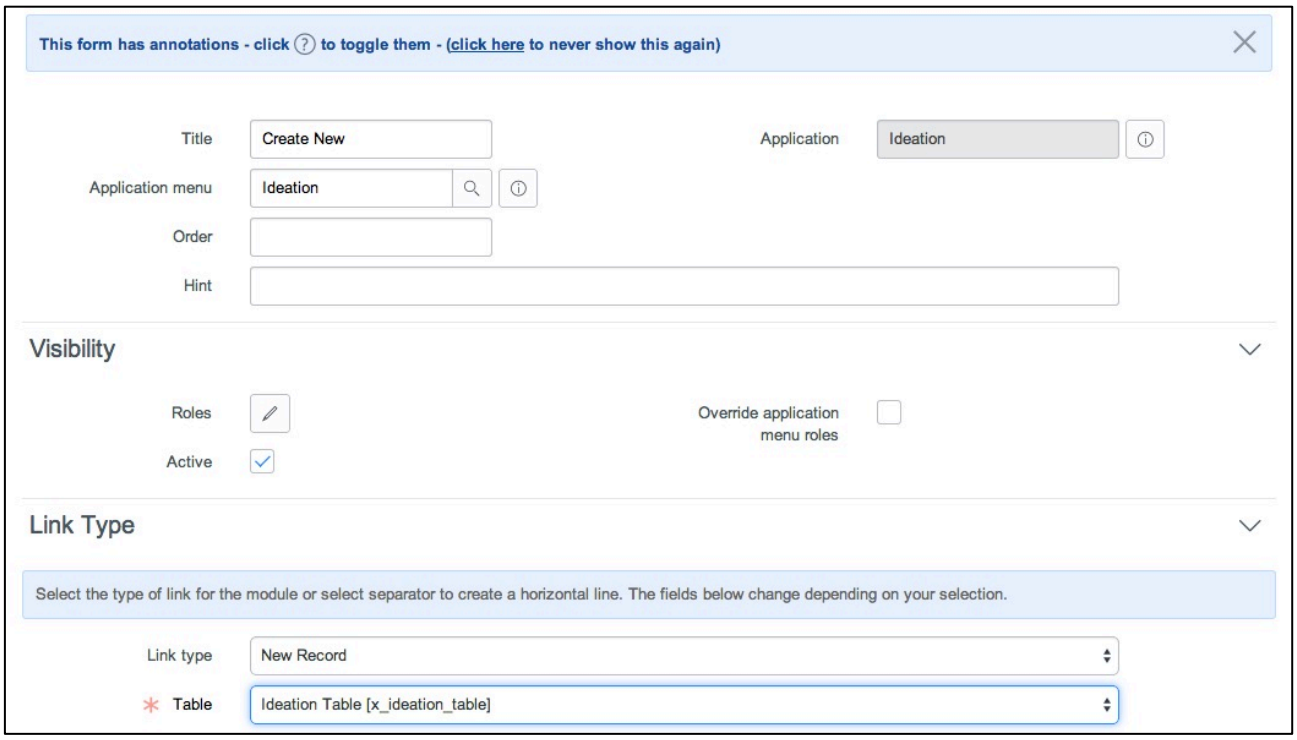


4. Add a module by clicking **New**.



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5. Enter the values shown in the example.

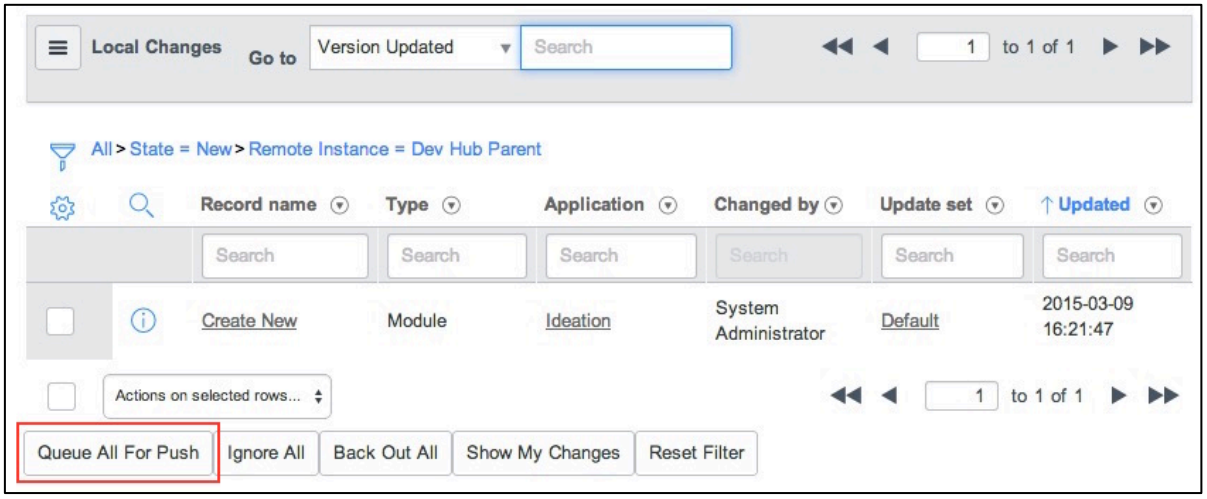


6. Click **Submit** to save the module.

7. Navigate to **Team Development > Team Dashboard**.

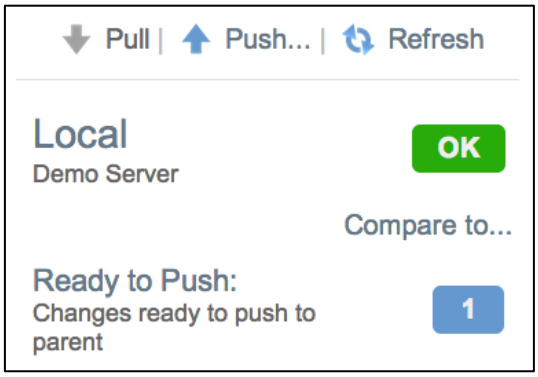
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8. The **Local Changes** list contains the changes just made, and possibly others. Right-click just over the "Create New" record name and select Show Matching so that only that record is shown in the list. Click **Queue All for Push**.



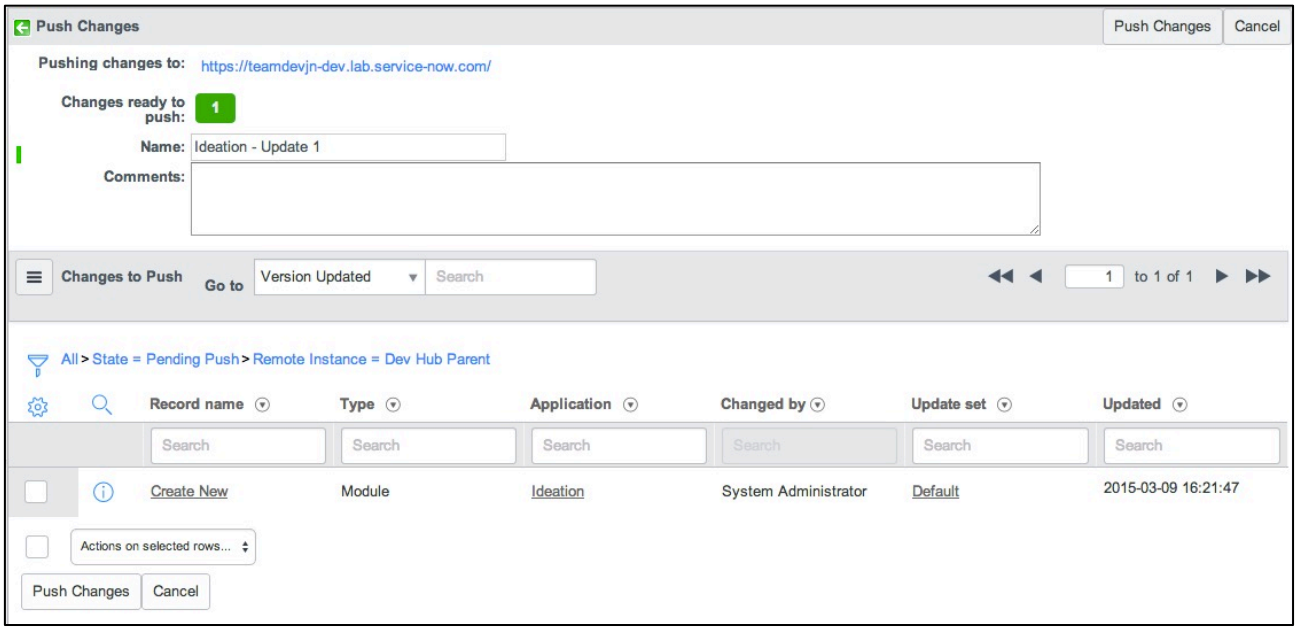
The Local Changes list has a few buttons that operate on large sets of changes: **Queue All For Push**, **Ignore All**, and **Back Out All**. These "**All**" actions operate against all records that match the current filter in the local changes list. If the filter matches more records than fit on one page of results, clicking these actions operates against all of them. To perform these actions on only a few records in the list, select the check box and use the **List Menu** action to perform these.

9. Now there is at least one change queued for push. The **Push (blue up arrow [↑])** action is enabled on the dashboard control panel. Click **Push** to proceed.

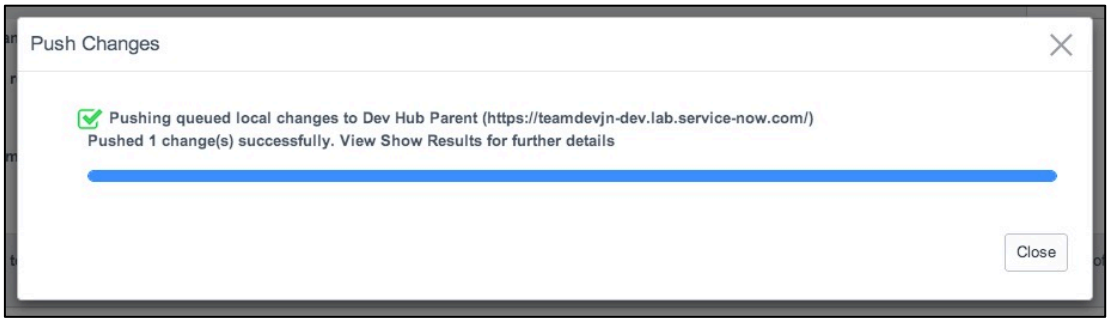


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10. On the **Push** screen, enter this name to identify the change set: **Ideation - Update 1**.

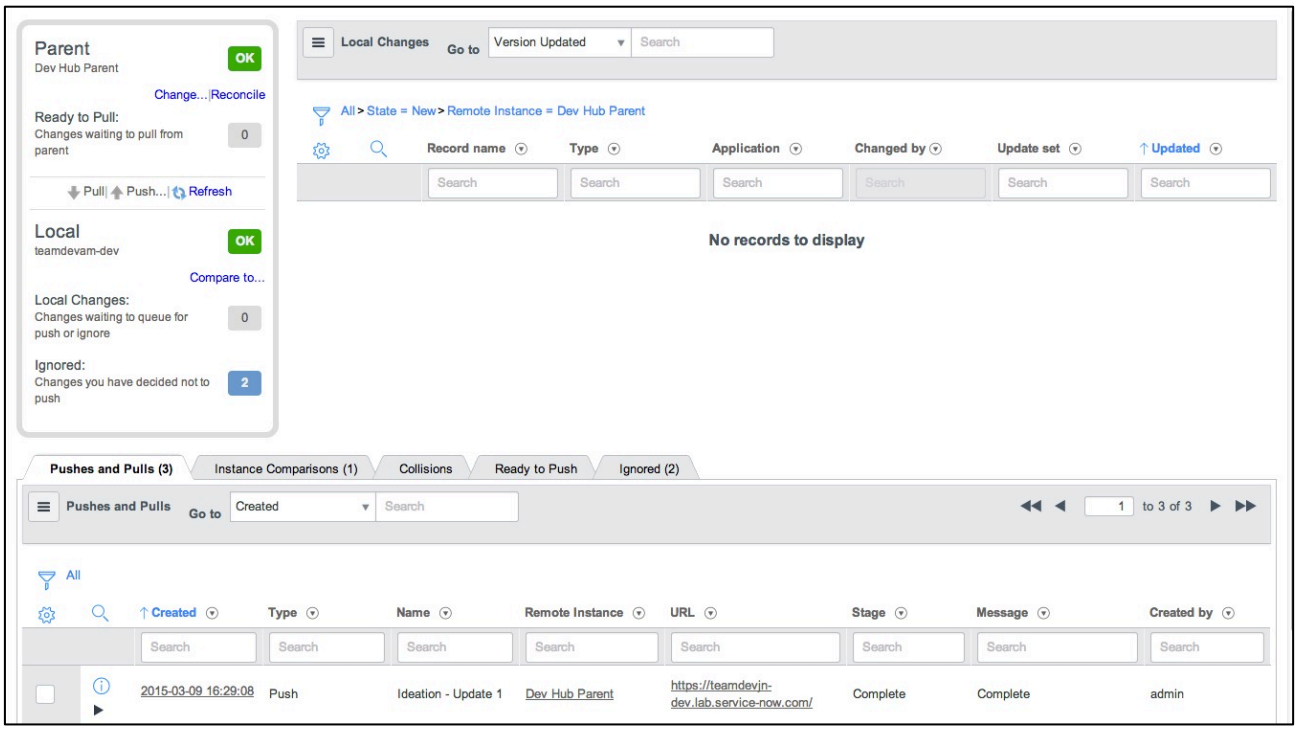


11. Click **Push Changes**. When the progress worker screen shows complete, click **Close** to check the final status of the push in the **Team Dashboard**.



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12. Check the **Pushes and Pulls** related list to see the individual states and possible log messages.



13. Log onto your Parent Dev Hub instance and confirm that the new 'Create New' module appears under the 'Ideation' application. You may need to refresh your navigator (left-click on drop-down arrow next to the navigation text area and select Refresh Navigator).

Lab Success Verification

- ✓ You learned how to track local changes and **queue them for a push**.
- ✓ You know how to **push changes** you have queued on your child instance with a single click.
- ✓ Your Ideation application is up to date and live across your parent and child instances.

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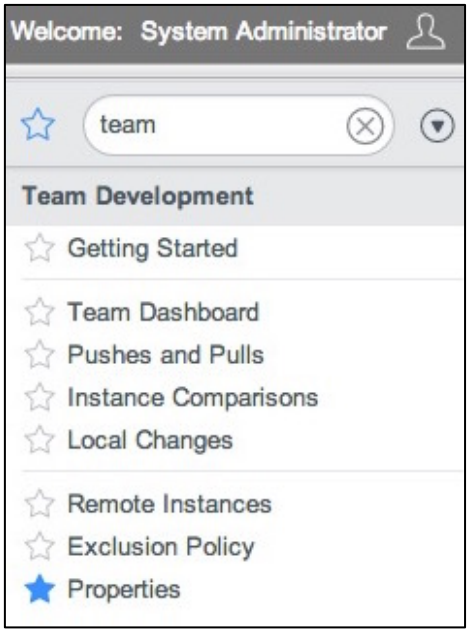
Lab Goal

To add more protection from promoting unwanted changes it is possible to enable an approval workflow on your parent to support reviewing, approving and rejecting any push.

Lab 5
Code Review

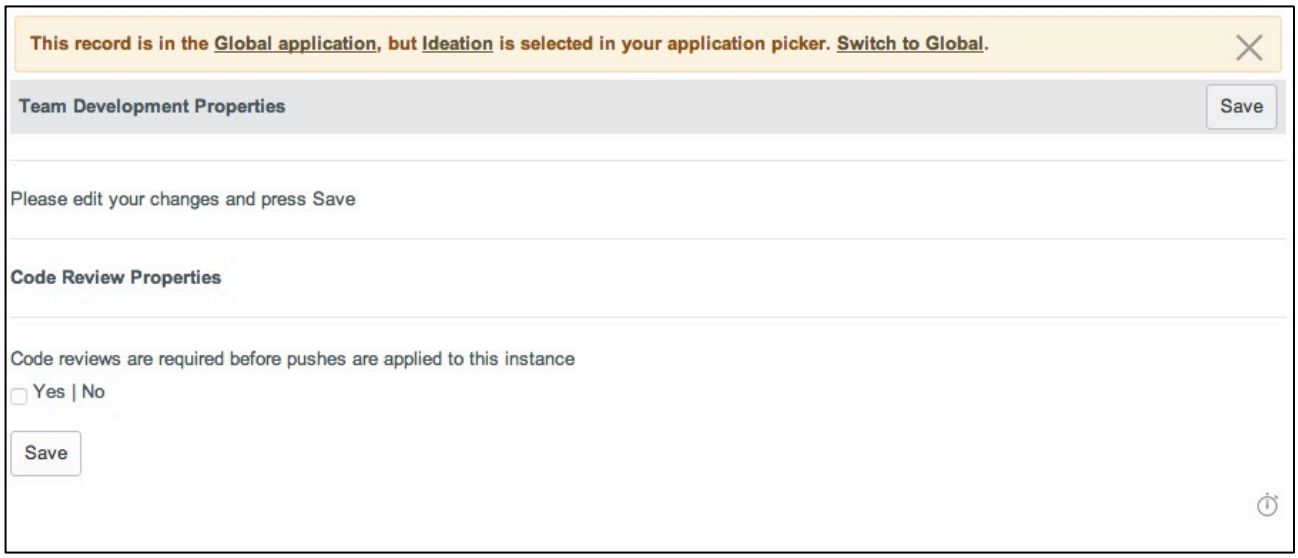
Enable Code Review on Parent (Parent Instance)

1. Log on to your **parent** Dev Hub instance.
2. Navigate to **Team Development > Properties**.

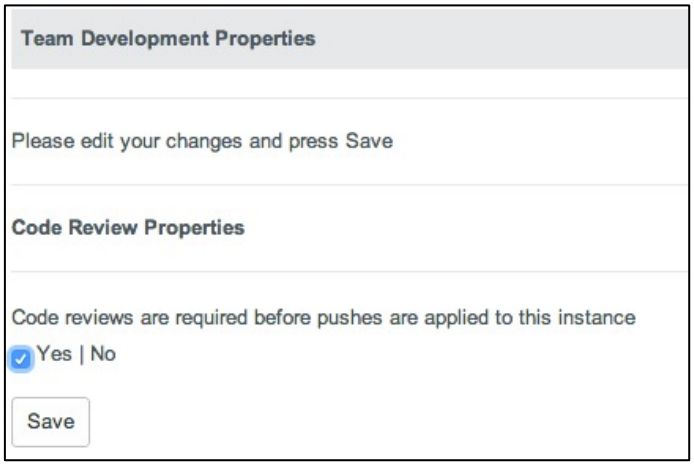


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3. Note: The **Parent** instance is still in the *Ideation* Scope. This causes records in the *Global* Scope to be read-only. Select **Switch to Global** in order to edit this property.



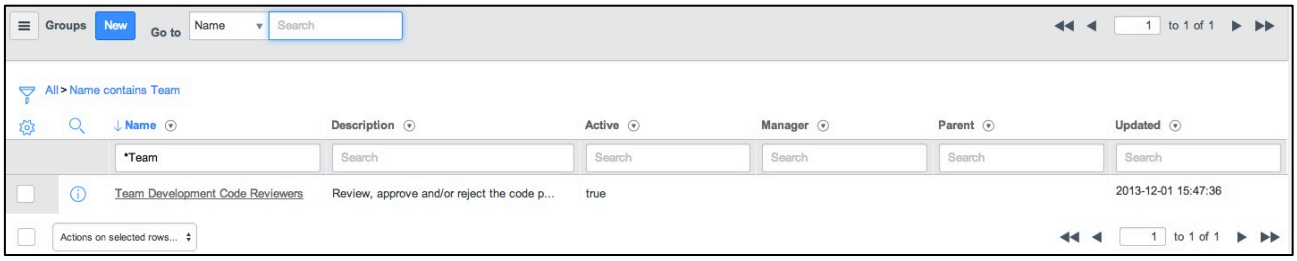
4. Check the box to enable Code Review on this parent instance, and click **Save**. This ensures that any push made to this parent is staged pending approval.



5. Navigate to **User Administration > Groups**.

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6. Locate **the Team Development Code Reviewers** group by name and click to open it.



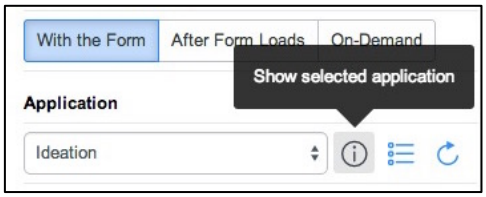
7. Add the User David Loo to the group by clicking 'Edit…' next to the 'Group Members' label, and double-clicking on his name so it appears on the right-hand-side, then clicking Save. The default code review workflow relies on this group to distribute approval requests for and notify the approvers. (System Administrator is added by default.)

Add Dictionary Override for State (Child Instance)

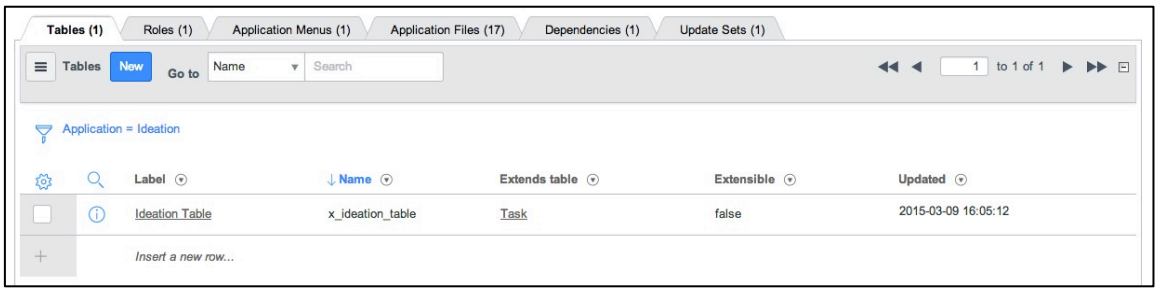
The final task is to add an override to Task **State** field.

1. Log on to your **child** instance with admin credentials.

2. Navigate to the Ideation application form using the application picker, ensuring that the **Ideation** application is selected.

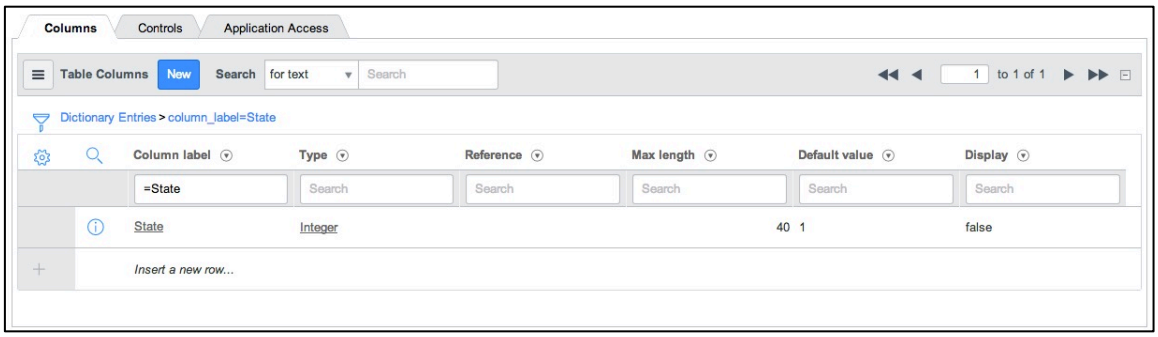


3. In the related **Tables** list, click the **Ideation table** to open it.



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4. In the **Table Columns** list, filter for and open the **State** column.



Note: You will see the following message:

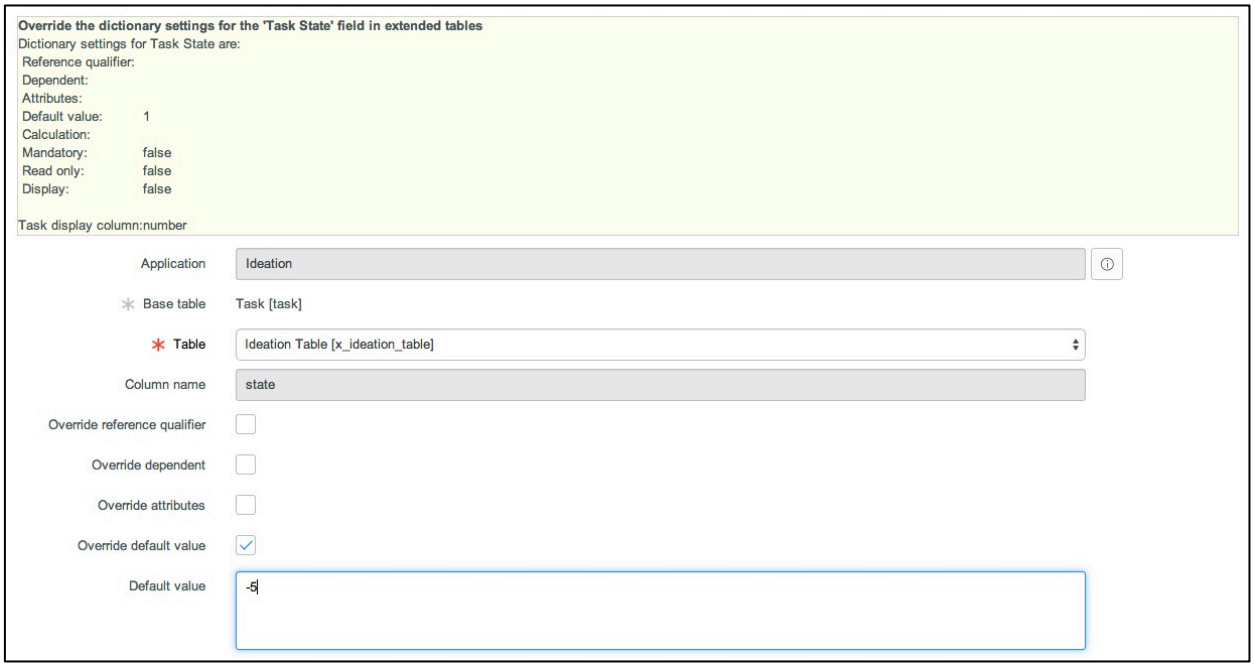


You may be inclined to switch to Global. **DO NOT**. You want this dictionary override contained in your application scope.

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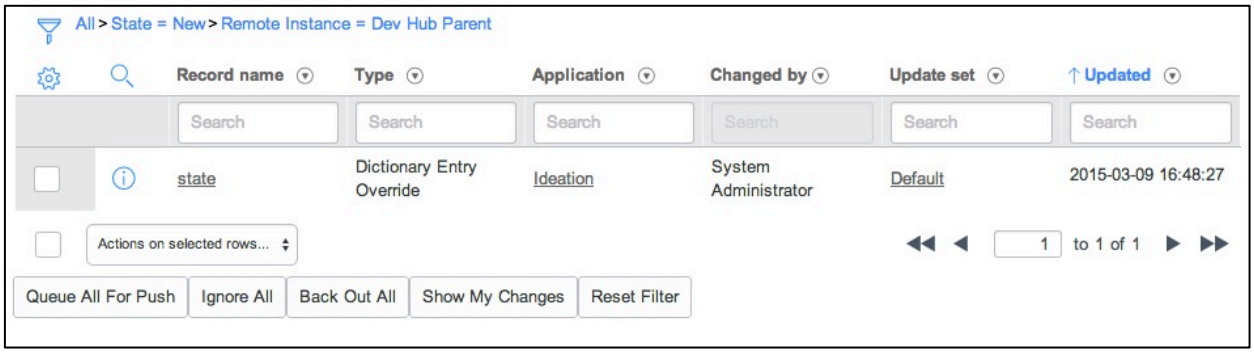
5. In the related **Dictionary Overrides** list, click **New** and enter the values below. This ensures that new Idea records default their state to **Pending** [-5] instead of **Open**.

   Table: **Ideation Table [x_ideation_table]**
   Override default value: ☑
   Default value: **-5**



6. Click **Submit**.

7. Push the changes as described in Lab 4, Steps 8-12.



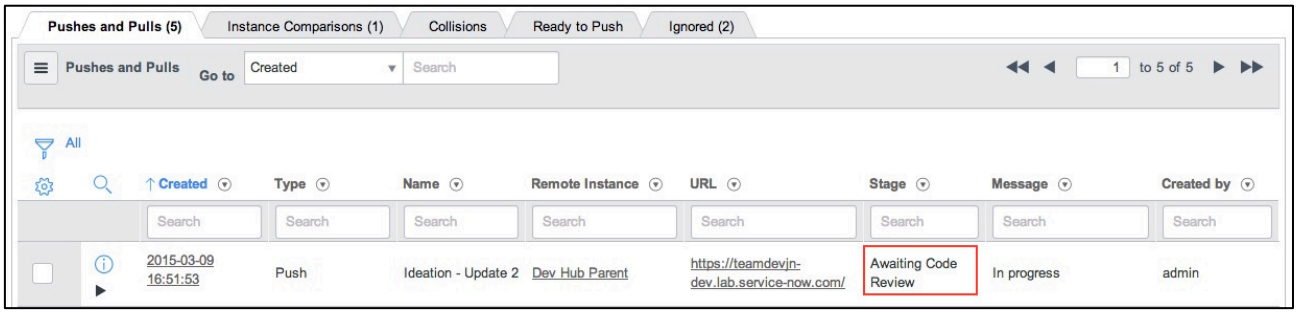
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8. With code review enabled on the parent, the progress worker status message will be slightly different:



The pushed changes are now staged on the parent and are not committed until someone approves them.

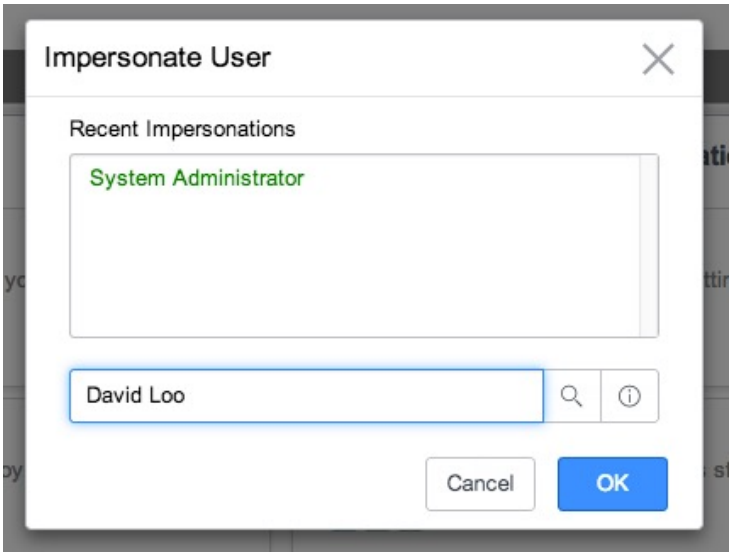
9. Click **Close** to return to the **Team Dashboard** and click the **Pushes and Pulls** tab. The push history is listed with the stage *Awaiting Code Review*.



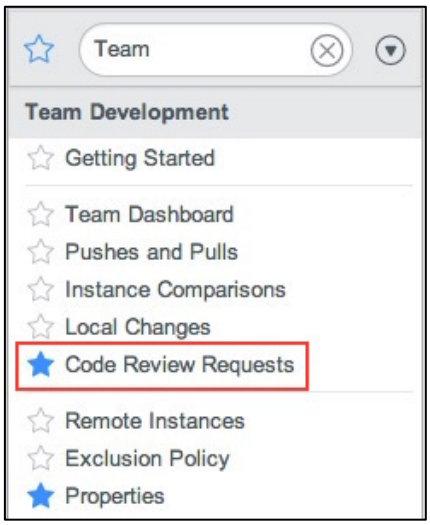
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Review and Approve the Push (Parent Instance)

1. Log on to your **parent** Dev Hub instance with admin credentials.
2. Impersonate User **David Loo**.

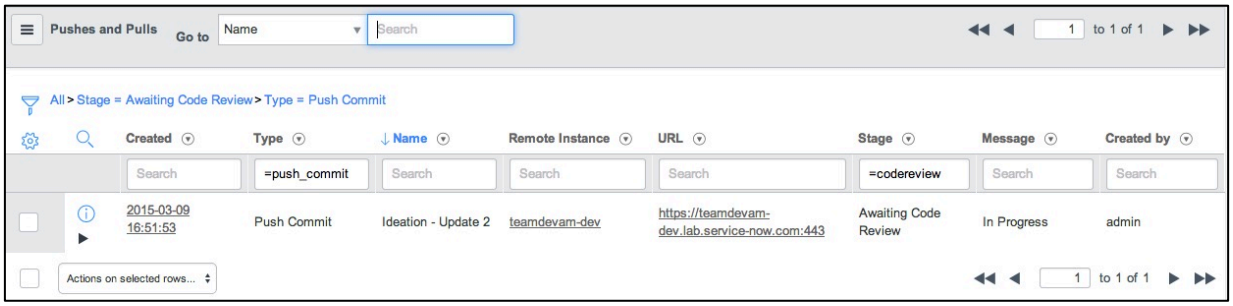


3. Navigate to **Team Development > Code Review Requests**.



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4. Open the push history record awaiting code review.

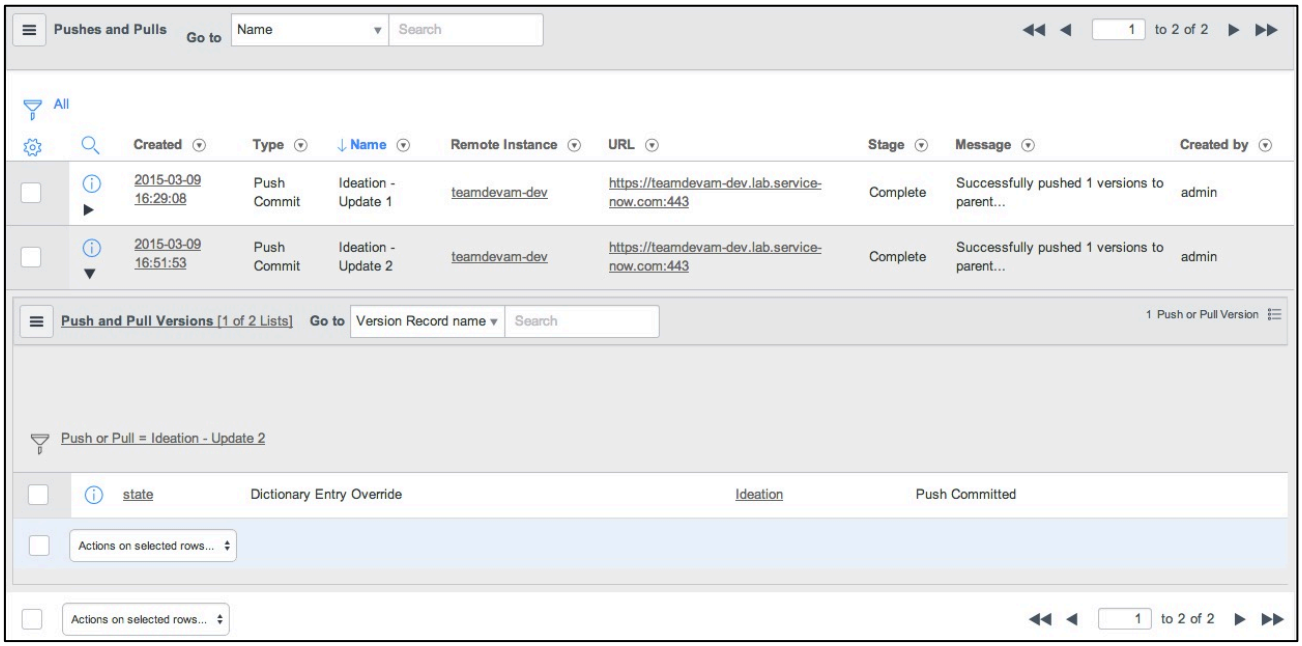


5. Review the related changes as needed and click **Approve**. Enter an encouraging comment in the approval dialog and again click **Approve**.



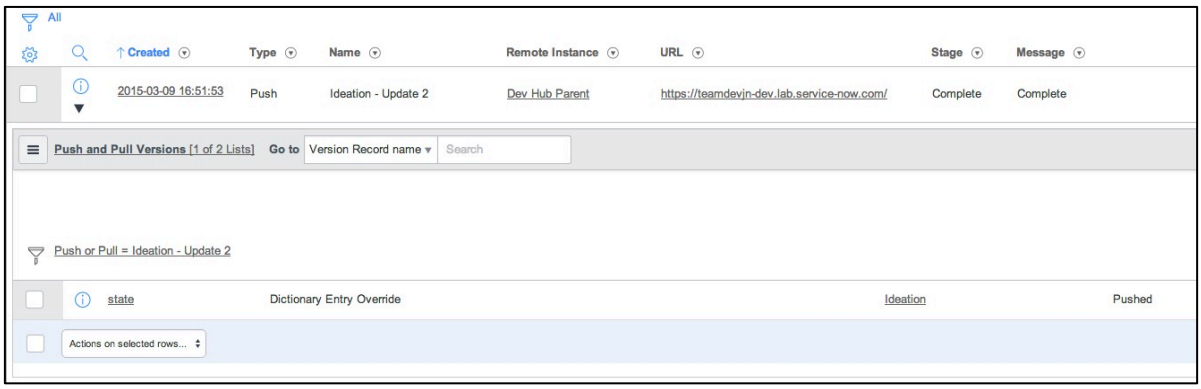
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6. Within **parent** instance, navigate to **Team Development > Pushes and Pulls** and locate the approved push by name or created date. Confirm that the stage is now **Complete**.



7. Navigate to the **Ideation** Application and click **Create New**. Confirm that the **State** field is now set to Pending by default.

8. Log back on to your **child** instance from where you pushed the changes. Navigate to **Team Development > Pushes and Pulls** and locate the approved push by name or created date. Confirm that the stage is also now listed as **Complete**, and thus synchronized with the parent.



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9. Open the record and view the Reviews related list to see any comments from the review process.



Lab Success Verification

- ✓ You configured your parent instance to enforce approval before committing a change set using Code Review.
- ✓ You implemented a change, pushed it to your parent and approved it before it was committed to the instance.

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Lab Goal

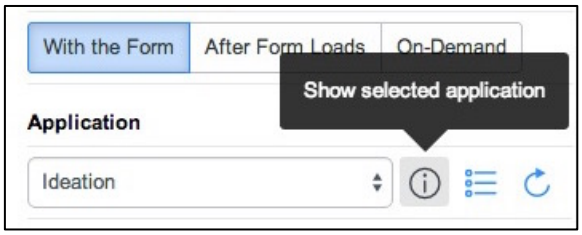
Team Development operates apart from Update Sets, but integrates with them in some useful ways. This lab covers how you can use local update sets to organize your local changes, and explains how update sets are generated during a push.

Lab 6 Update Sets in Team Dev

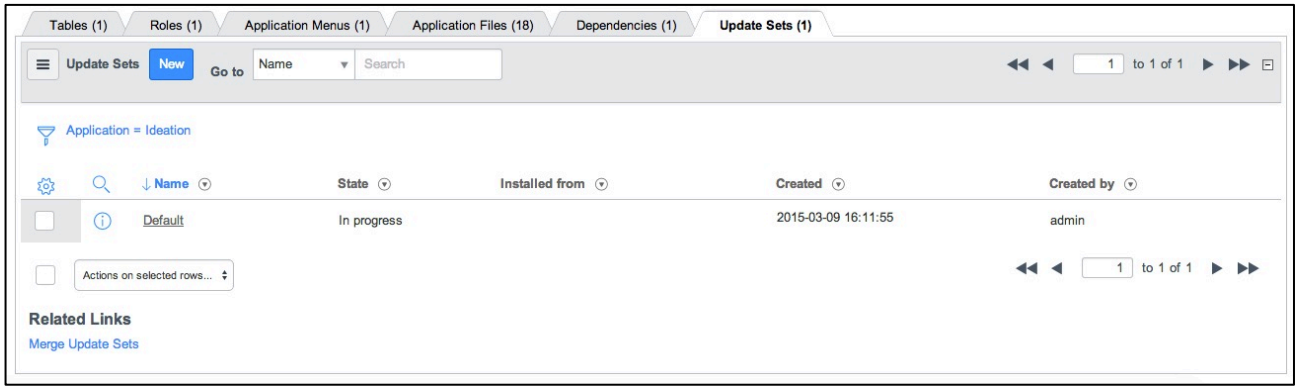
Create a Local Update Set (Child instance)

1. Log on to your **child** instance with admin credentials.

2. Navigate to the Ideation application form using the application picker, ensuring that the **Ideation** application is selected.



3. Click the related list **Update Sets**. Click **New**.



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4. Enter the name **Ideation Patch 1**, and click **Submit and Make Current.**

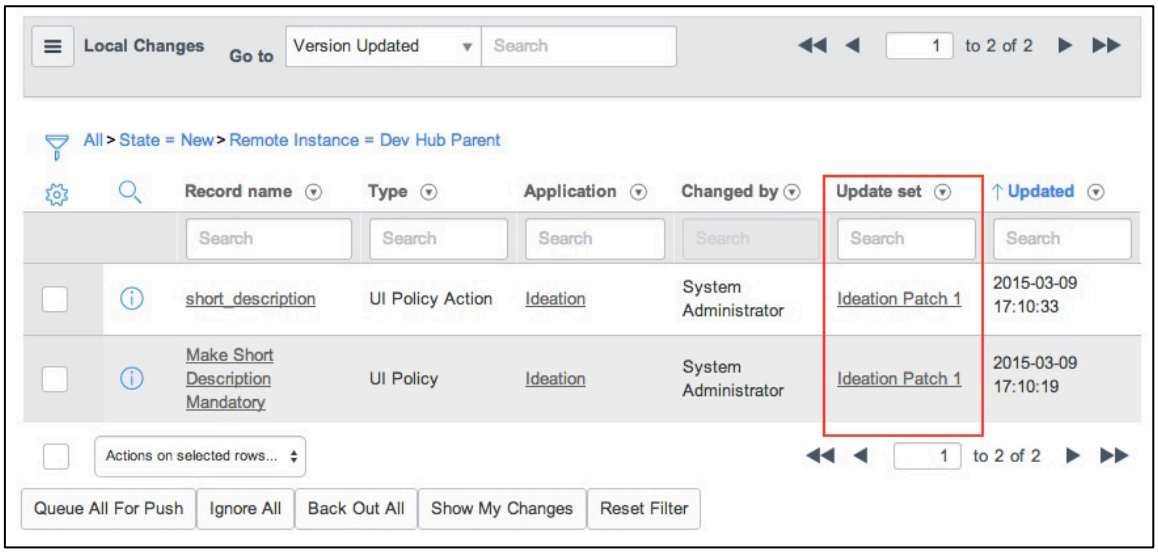


5. Now, make a change or addition to the application. Some ideas:

Add a UI Policy to make the field Short Description mandatory.
Add a UI Action on your Idea form called ***Submit Another Idea*** *that opens a new Idea form.*

If you are not familiar with either of these customizations you can do the following: Create a new Ideation Module by following Lab 4 Instructions 1 through 6 but in Step 5, specify the Title as 'Another Create New' instead of 'Create New'.

6. When finished with the changes, navigate to **Team Development > Team Dashboard** and look at the **Local Changes** list.



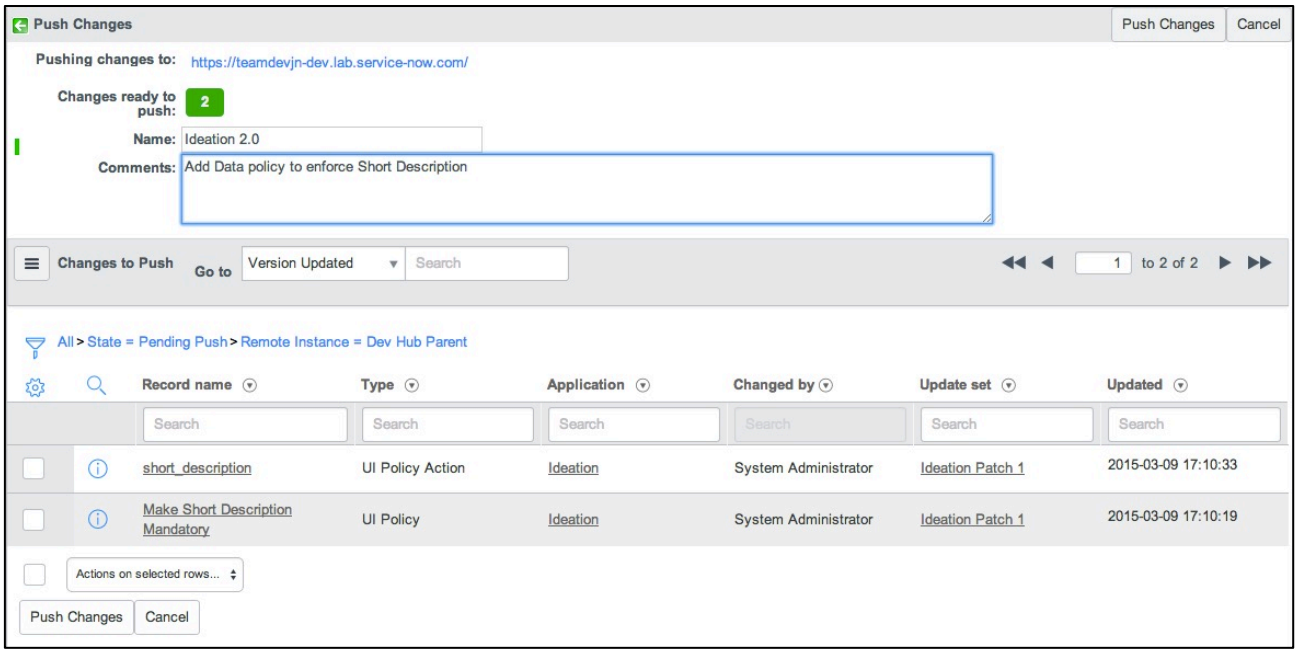
The column **Update set** displays the update set this local change is associated with. This is a standard reference field that you can use to sort and filter the list.

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7. Right-click one of the cells in the **Update set** column referencing the update set, and select **Show Matching**. This ensures that only those updates associated with that update set are listed.

8. **Click Queue All For Push**.

9. **Click Push** in the dashboard control panel. Enter the name **Ideation 2.0** with a comment related to the change you made.

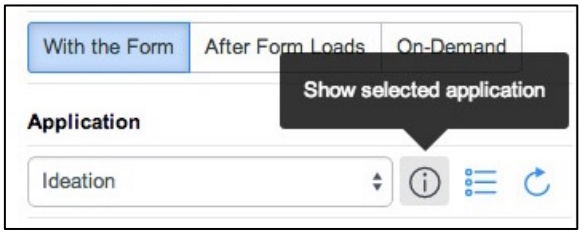


10. Click **Push Changes**.

Approve Change and Merge Update Sets (Parent Instance)

1. Log on to your **parent** Dev Hub instance with admin credentials.

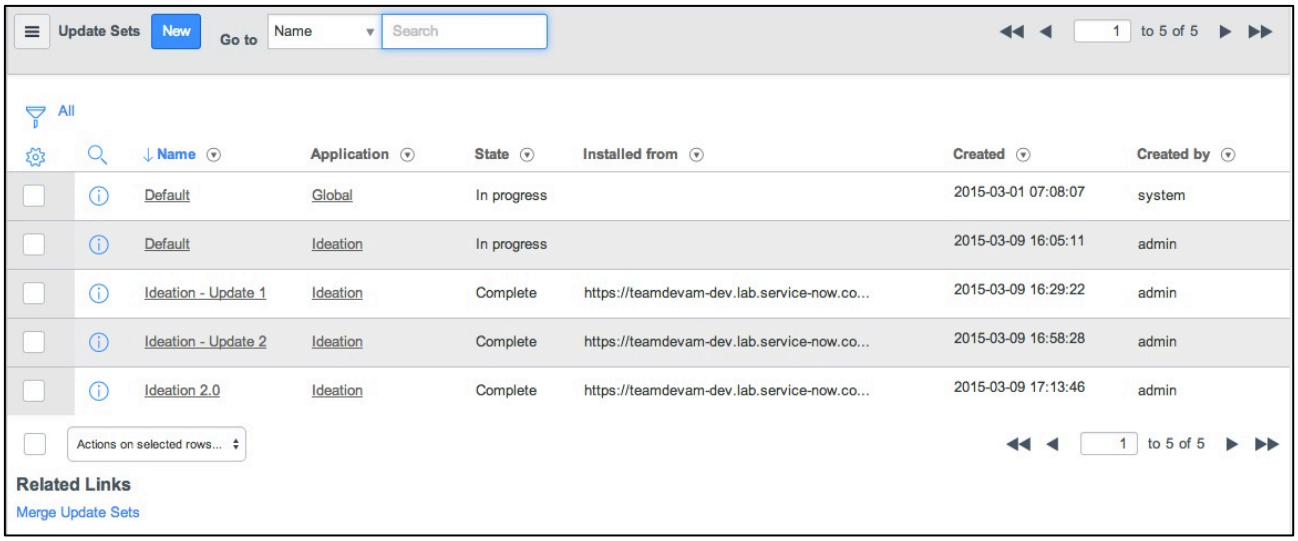
2. Confirm that you are in the Ideation Application.



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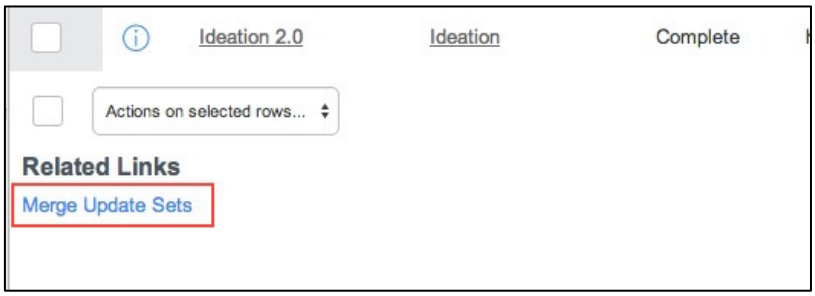
3. Navigate to **Team Development > Code Review Requests** and approve the pending push, as shown above.

4. Navigate to **System Update Sets > Local Update Sets**. Here you see one update set for each push you have made to your parent in this lab.



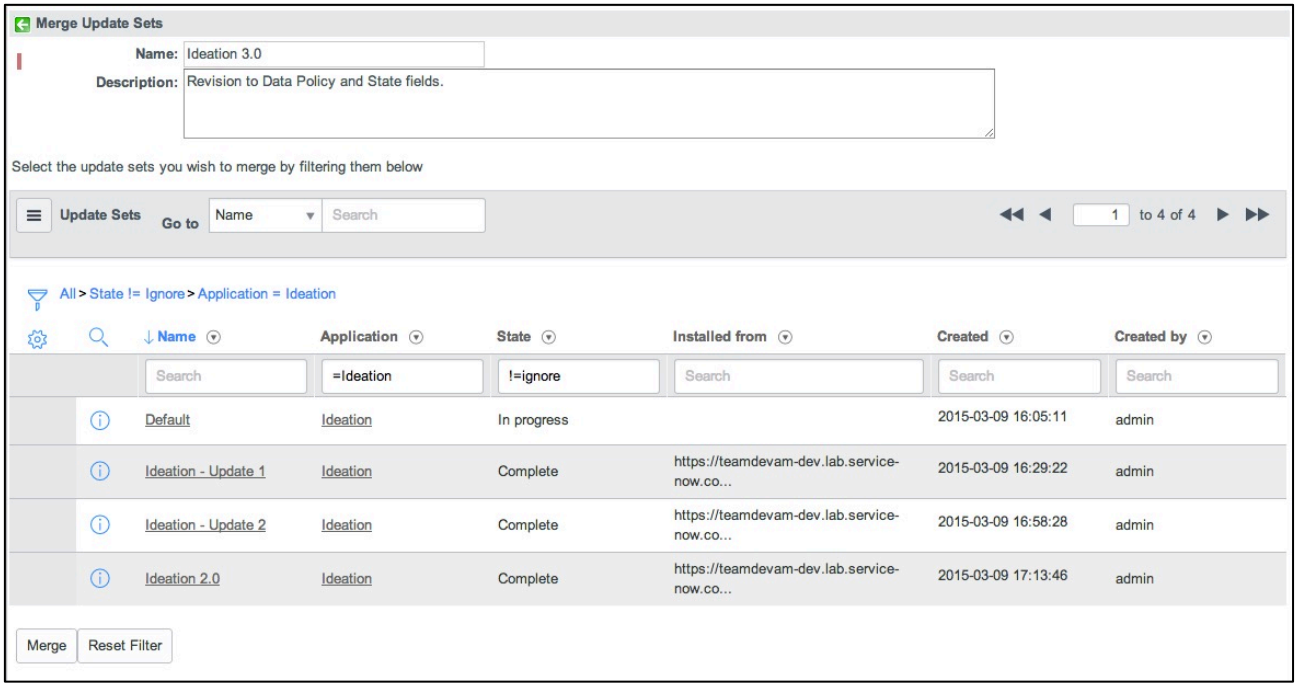
Always use **well-structured names** for your pushes, just as you should when creating update sets. The name coupled with good comments help anyone looking at either Push and Pull History or Update Set records understand what you were thinking at the time. You also have a much better chance that your change set will be approved.

5. At this point you no longer want to track such small change sets; you want to consolidate them into larger set. Click **Merge Update Sets**.



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6. Enter a suitable **Name** and **Description** for the new update set, and filter the **Update Sets** list to only include update set records where **Application = Ideation**.
   Note*: You can only merge update sets that have the same Scope.*



7. Click **Merge**. When prompted to confirm, click **OK**. The new update set **Ideation 3.0** now contains all of the updates from the original update sets.

8. The original update sets should now be marked with **State** as **Ignore** and be empty.

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Lab Success Verification

- ✓ You used a local update set to keep your changes to the application organized.
- ✓ You learned that the system creates a completed update set on the parent instance for every change set pushed and committed; and you understand the importance of using good naming conventions when creating update sets and pushing changes in Team Development.
- ✓ You merged the completed update sets from all of your pushes made to your Ideation application into a single new update set. This allows you to consolidate related changes into one larger set that is easier to track and migrate.

We Thank You For Playing

Those are the key components of Team Development in ServiceNow. We are building on these foundations and are striving to simplify the complicated world of code and customization management on our platform in the cloud.

We hope you enjoyed your time here, hope you learned more than you forgot, and hope you feel free to ask questions of any of us today or throughout the conference. Enjoy and cheers!

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