knowledge15
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Lab Guide

Technical Best Practices 201

Avoid Pitfalls

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Default Login / Password:

admin / Knowledge15

itil / Knowledge15

employee / Knowledge15

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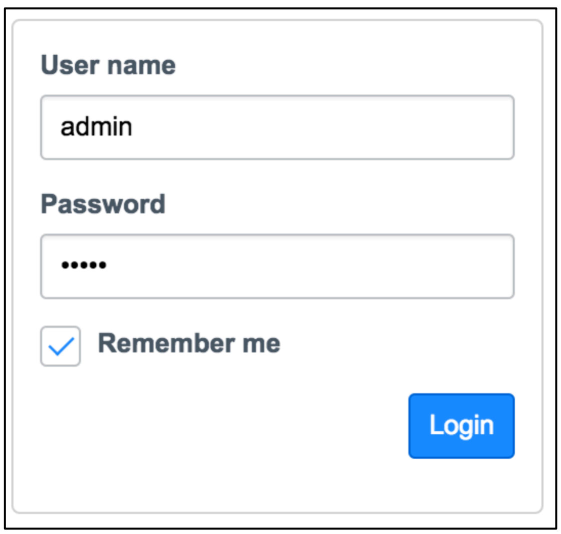
Lab Goal

Lab 1.1
Review Business Rules

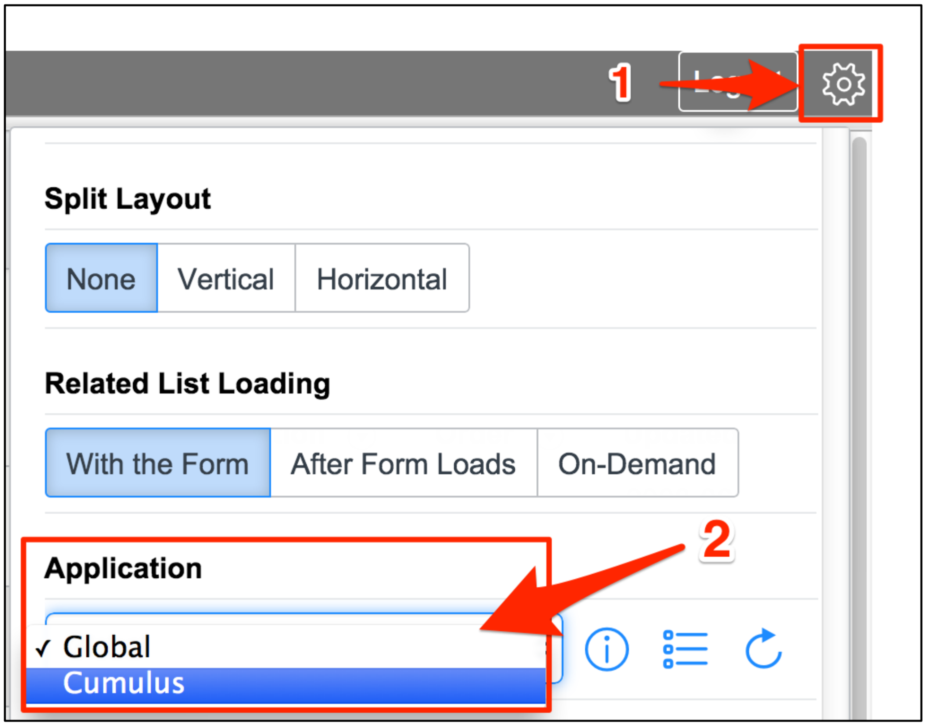
This lab explains how to review the business rules your colleagues have done to look for bad practices and correct them, using best practices.

Log in to Your Instance

1. Log in to the instance URL on the cover page using the provided **admin** credentials.



2. Use the gear icon on the upper right near the Logout button (1), and select the **Cumulus** application (2).

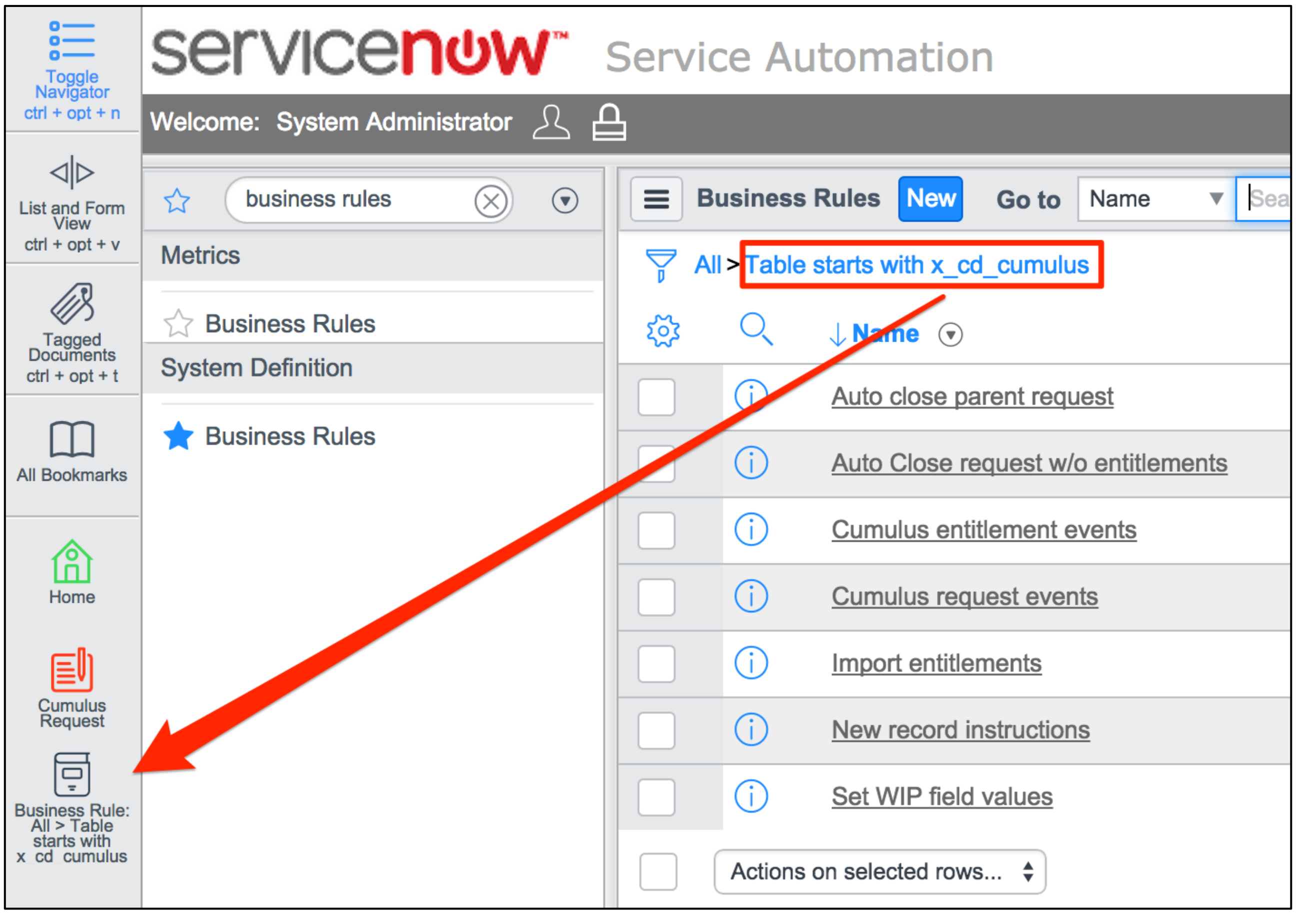


Add Business Rules to the Edge

1. Navigate to **System Definition > Business Rules**.

2. Filter the list of rules using the list filter where **Table | starts | with x_cd_cumulus**.

3. Click and drag the breadcrumb that reads **Table starts with x_cd_cumulus** (shown below) to the left edge for easy reference.



Review and Update First Business Rule

1. Open the business rule **Auto Close request w/o entitlements**.

2. Review the entire business rule and note any best practices that can be applied to this business rule.

3. Change the **When** field from **after** to **before**.

4. Remove or comment out the line:

```
current.update();
```

5. Add the following text to the **Description** field:

   Close this record automatically if there are no entitlement changes generated.

6. Click **Update**.

Review and Update Second Business Rule

1. Open the business rule **New record instructions**.

2. Review the script and note any best practices that can be applied to this business rule.

3. Add the following text to the **Description** field:

   Present a friendly instructional message for a new record with changes in Awaiting Justification mode.

4. Select and cut the following text from the "if" statement and paste it in to the **Condition** field.

```
new CumulusUtils().showMassApprovalButton(current) && current.sys_mod_count == 0
```

5. Delete the "if" statement from the script.

6. Select and copy the text assigned to the "msg" variable (everything between the single quotes) and paste it in to your favorite text editor.

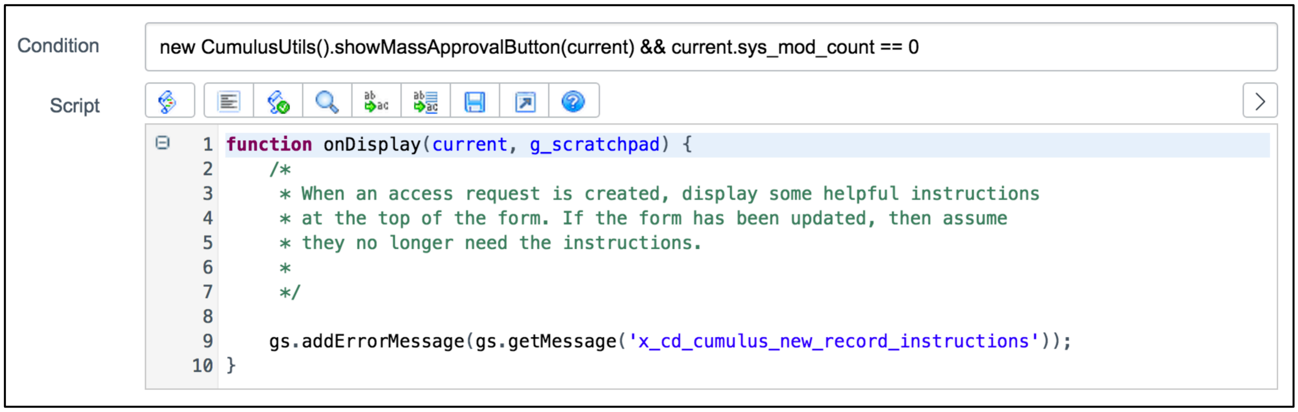
7. Delete the "var msg" statement.

8. Update the "gs.addErrorMessage()" statement to the following.

```
gs.addErrorMessage(gs.getMessage('x_cd_cumulus_new_record_instructions'));
```

9. In the script field toolbar, click the **Format Code** icon (shown below):

10. Confirm that your business rule condition and script now appear as in the following image:



11. Click **Update**.

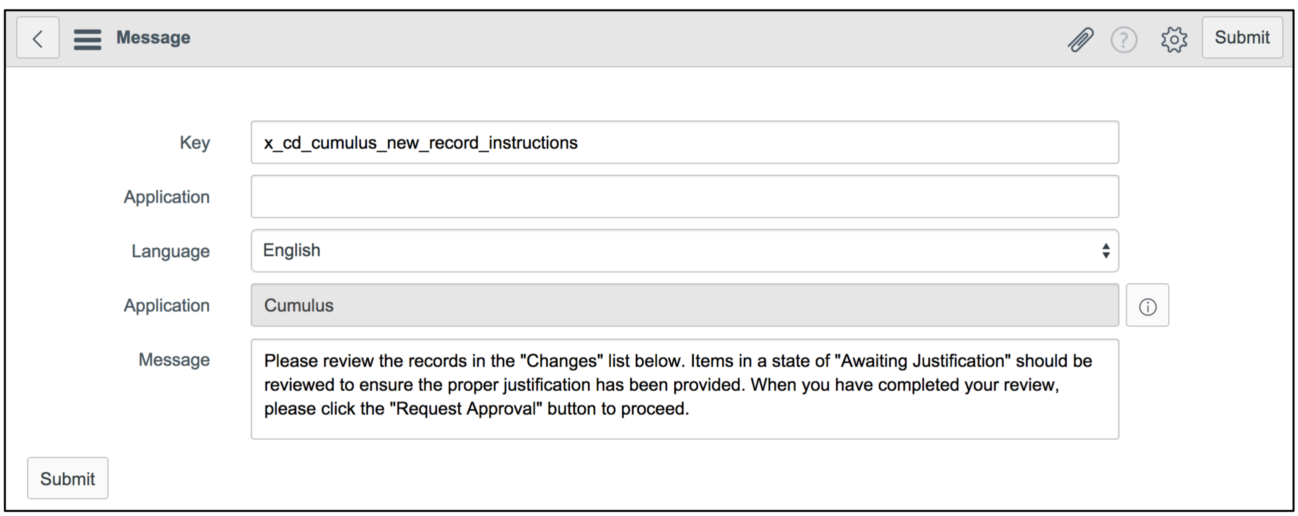
12. Navigate to **System UI > Messages**.

13. Click **New**.

14. In the **key** field, enter **x_cd_cumulus_new_record_instructions**.

15. Paste the text from the **msg** field that you saved in your text editor into the **Message** field.

16. Confirm that your record looks like the following image.



17. Click **Submit**.

Review and Update Third Business Rule

1. Open the business rule **Cumulus request events**.

2. Review the script and note any best practices that can be applied to this business rule.

3. Explain why the “if” statement in the script should not be moved to the **Condition** field in this case.

4. In the script field toolbar click the **Format Code** icon (shown below):

5. Click **Update**.

Verification

1. Navigate to **Cumulus > Create New**.

2. Fill out the form with the following answers:

   Who is the recipient of this request? **Abel Tuter**
   Choose a user to model this request after: **Barbara Hindley**
   Do you want to ADD this access to the requester or REPLACE their current access? **Add**
   When is this request due? **2015-06-10**
   Provide justification for requiring this access change: **Demo**

3. Click **Submit**.

4. Confirm that the following message is displayed at the top of the form:

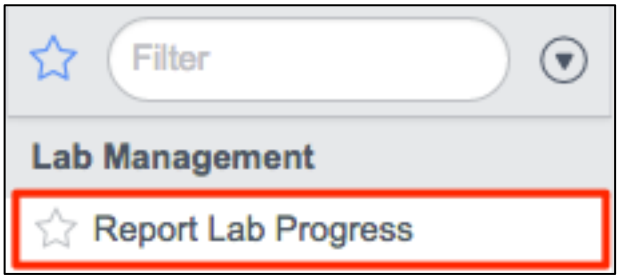
> **Please review the records in the "Changes" list below. Items in a state of "Awaiting Justification" should be reviewed to ensure the proper justification has been provided. When you have completed your review, please click the "Request Approval" button to proceed.**

Notes

If you finish early, examine the other business rules in the list for potential best practices opportunities.

Progress Report

1. Navigate to **Lab Management > Report Lab Progress**.



2. Click **I am done!**

Lab Goal

This lab explains how to convert a Global Business rule to a Script Include.

Lab 1.2 Global Business Rules

Copy/Deactivate a Global Business Rule

1. Navigate to **System Definition > Business Rules**.
2. Locate and open the **CumulusUserFilter** business rule.
3. Set the **Active** field to **false** (unchecked).
4. Select and copy the entire contents of the **Script** field.
5. Click **Update**.

Create a Script Include

1. Navigate to **System Definition > Script Includes**.
2. Click **New**.
3. In the **Name** field, enter **CumulusUserFilter**.
4. In the **Description** field, enter:

   Advanced reference qualifier for the Cumulus request user fields.
5. Delete the entire contents of the **Script** field.
6. Paste the contents of the global business rule (in your copy buffer) to the **Script** field.

   Your script field should look like the following:

```
function CumulusUserFilter() {

  return 'active=true';
}
```

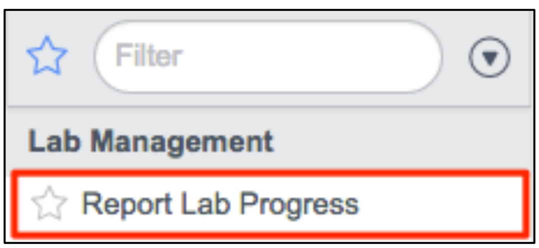
7. Click **Submit**.

Lab Success Verification

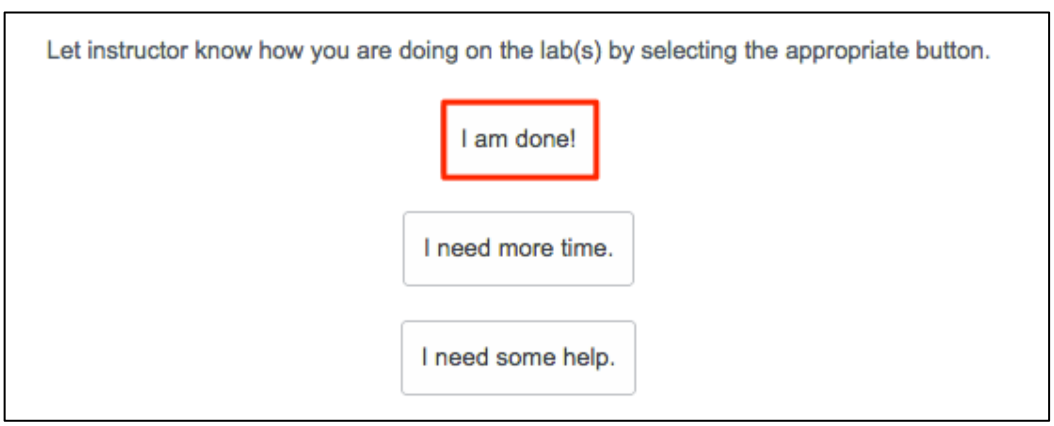
1. Navigate to **User Administration > Users**.
2. Locate and open the record for **annie.approver**.
3. Deselect the **Active** field.
4. Click **Update**.
5. Navigate to **Cumulus > Create New**.
6. In the field **Who is the recipient of this request?** Try entering the name "**Annie Approver**."
7. If her name fails to appear, and other names do (as you type characters starting with "A") the conversion of a global business rule to Script Include was successful. Since her account is inactive and Script Include displays only active accounts.

Progress Report

1. Navigate to **Lab Management > Report Lab Progress**.



2. Click **I am done!**



Lab Goal

This lab explains how to convert a synchronous call to **g_form.getReference()** to an asynchronous **GlideAjax** call to improve performance.

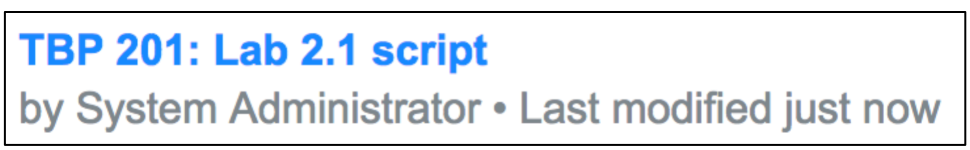
Lab 2.1
Convert getReference to GlideAjax

Download the Script

1. Navigate to **Self-Service > Knowledge**.

2. Click the **Knowledge** knowledge base.

3. Click the article **TBP 201: Lab 2.1 script** .



4. In the Attachment section, click the **manager-ajax.txt** link to download the file to your local computer. Note the location where the file was saved (typically your Downloads folder).

Verify the Assigned to Mgr field Updates

1. Navigate to **Cumulus > Entitlements > Open**.

2. Open the record **ENT0000004**.

3. Change the **Assigned to** field from **David Loo** to **Beth Anglin**.

4. Did you receive a message like the following image?

getReference for assigned_to not allowed: missing callback function as parameter

The reason for this message is that the script was written before Fuji and therefore uses a synchronous call. This is much slower than an asynchronous call. This lab exercise solves two problems at one time by changing the call from synchronous call to asynchronous and by changing from the less efficient **getReference** call to a **GlideAjax call.ing** call.

Review the Script Include

1. Navigate to **System Definition > Script Includes**. Your browser may ask you to confirm that you have unsaved changes on this page. Select "**Leave this page**" (or similar option).

2. Open the record named **CumulusAjax**.

3. What parameters does the **getManager** function expect from the client script?
   Hint: Look for calls to gs.getParameter().
   Notes:

4. Explain the purpose of the following statement.
   Hint: What type of field is our new **Assigned to mgr** field on the **Entitlement** table?

```
answer = usr.manager + ':' + usr.manager.getDisplayValue();
```

Review and Update the Client Script

1. Navigate to **System Definition > Client Scripts**.

2. Locate and open the record **Get Assigned To Manager**.

3. Review the script and note below any best practices that can be applied to this client script.
   Notes:

4. Remove the following lines in the script field.

```
var at = g_form.getReference('assigned_to');
if (at)
  g_form.setValue('assigned_to_mgr', at.manager);
```

5. Open the **manager-ajax.txt** file you downloaded in step **4** with your favorite text editor.

6. Copy and paste the contents of that script (below) in to the script field at line **13**:

```
var ga = new GlideAjax('CumulusAjax');

ga.addParam('sysparm_name', 'getManager');
ga.addParam('sysparm_user_id', g_form.getValue('assigned_to'));
ga.getXML(parseManager);

function parseManager(response) {

  var answer = response.responseXML.documentElement.getAttribute("answer");
  var token = answer.split(':');

  g_form.setValue('assigned_to_mgr', token[0], token[1]);
}
```

7. In the script field toolbar click the **Format Code** icon (shown below):

8. Click **Update**.

Lab Success Verification

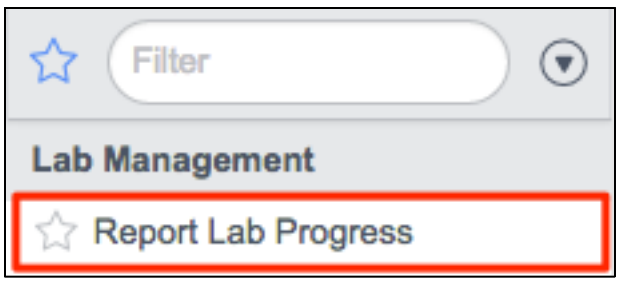
1. Navigate to **Cumulus > Entitlements > Open**.

2. Open the record **ENT0000004**.

3. Confirm that the client script still works with the new **GlideAjax** code by changing the **Assigned to** field to Beth Anglin (do not save or update the form). If the **Assigned to Mgr** field says Jerrod Bennett, then your GlideAjax solution is working perfectly.

Progress Report

1. Navigate to **Lab Management > Report Lab Progress**.



2. Click **I am done!**

Lab Goal

This lab demonstrates the use of a display business rule to set up the **g_scratchpad** object and client script to use the contents of the same **g_scratchpad**.

Lab 2.2
Use
g_scratchpad

Inspect the Client Script

1. Navigate to **System Definition > Client Scripts**.
2. Locate the **Justification Attention** record and drag it to the left edge for quick reference later.
3. Open the **Justification Attention** record.
4. Review the script and note any best practices that can be applied to this client script.

Create the Business Rule

1. Navigate to **System Definition > Business Rules**.

2. Click **New**.

3. Create a new record with the following information:

   Name: **Entitlement g_scratchpad**
   Table: **Entitlement [x_cd_cumulus_entitlement]**
   Order: **100**
   Active: **true** (checked)
   Advanced: **true** (checked)
   When: **display**
   Description: **Populate the g_scratchpad for the state and approval values**
   Condition: (blank)
   Script:

```
function onDisplay(current, g_scratchpad) {
   g_scratchpad.approval = current.getValue('approval');
   g_scratchpad.state    = current.getValue('state');
}
```

4. Click **Submit**.

Update the Client Script

1. Open the **Justification Attention** client script using the icon on the left edge.

2. Remove or comment out the following two lines:

```
var stateVal =
document.getElementById('sys_readonly.x_cd_cumulus_entitlement.state').value;
var approVal =
document.getElementById('sys_readonly.x_cd_cumulus_entitlement.approval').value;
```

3. Add the following two lines at line 3 (note the spelling of ‘approVal’ variable):

```
var stateVal = g_scratchpad.state;
var approVal = g_scratchpad.approval;
```

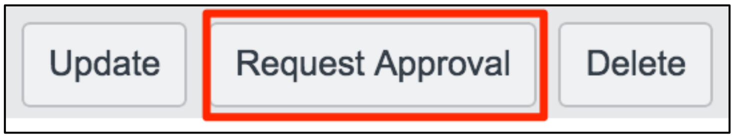
4. In the **Messages** field, enter the following text:

```
x_cd_cumulus_additional_justification
```

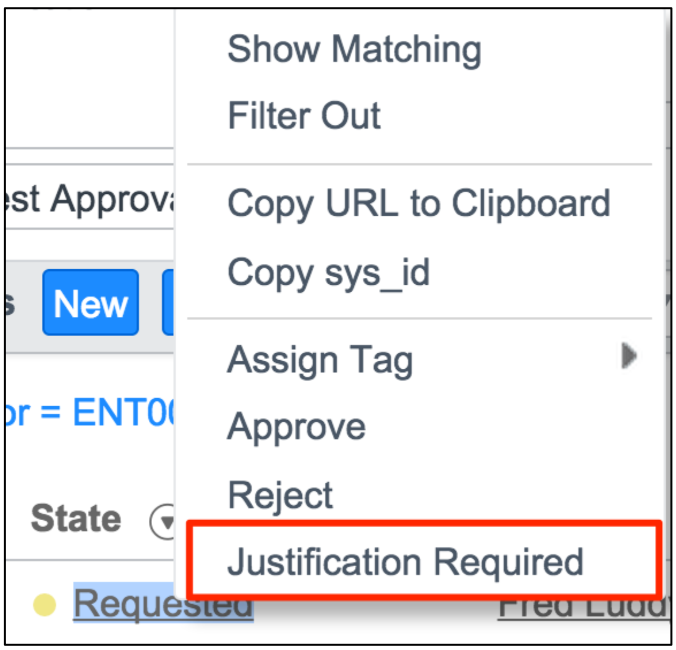
5. Click **Update**.

Lab Success Verification

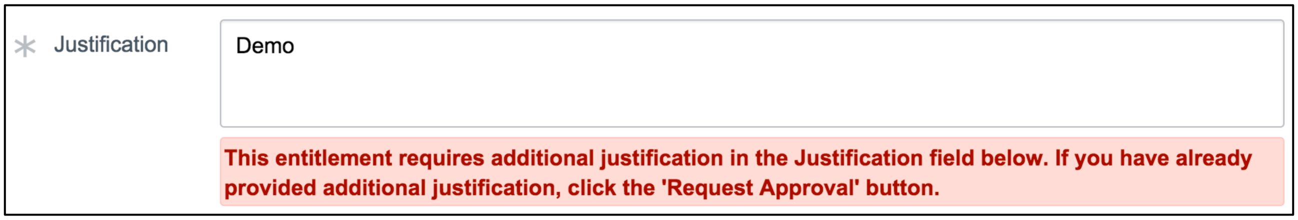
1. Navigate to **Cumulus > Entitlements> Open**.
2. Open record number **ENT0001004**.
3. Click the button **Request Approval**.



4. Scroll to the **Approvers** related list.
5. Right-click next to the word “**Requested**” in the **State** column and click **Justification Required**.



6. When the form refreshes, confirm that the alert appears and the **Justification** field is highlighted on the **Entitlement** form.

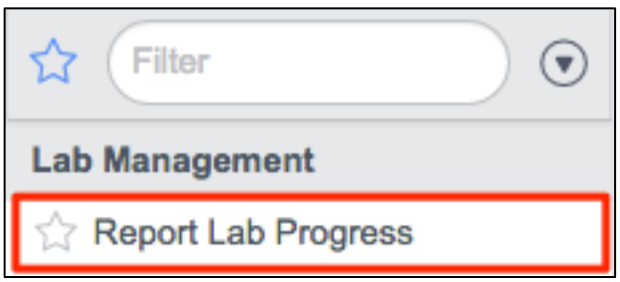


Notes

If you finish early, review other client scripts (and catalog client scripts) that use tables **x_cd_cumulus_request** and **x_cd_cumulus_entitlement** for best practices opportunities.

Progress Report

1. Navigate to **Lab Management > Report Lab Progress**.



2. Click **I am done!**

Lab Goal

This lab explains how to create a property and use it in a script to replace a hard coded **sys_id**.

Lab 3.1
Hard coded sys_ids

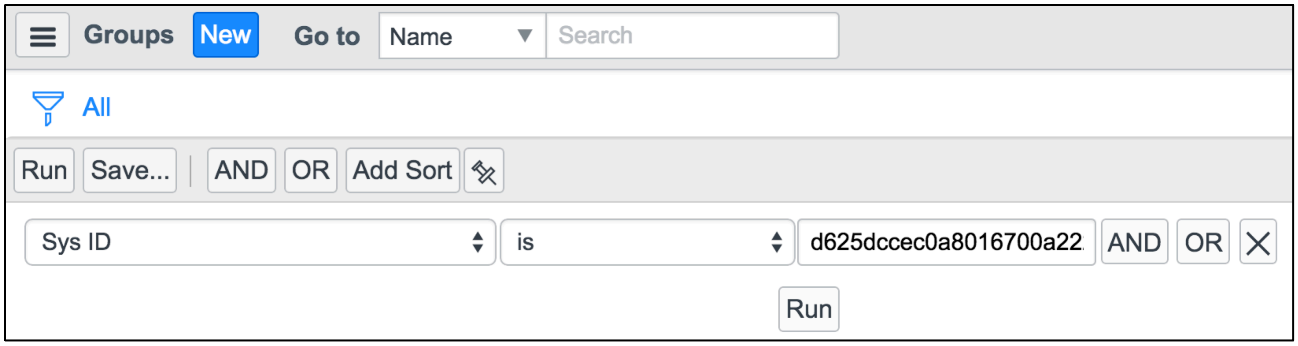
Review the Business Rule

1. Click the **Business Rules** list icon that you placed on the left edge earlier.
2. Locate the **Set WIP field values** business rule and drag it to the left edgefor easier reference later.
3. Open the **Set WIP field values** business rule.
4. Review the script and note any best practices that can be applied to this business rule.
   Notes:
5. Select and copy the sys_id value (**d625dccec0a8016700a222a0f7900d06**).

Identify the Group

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

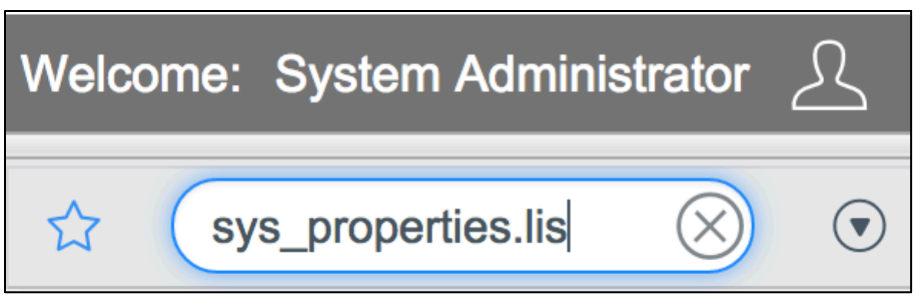
2. Use the list filter to find the group that matches the sys_id in the script (image below).
   Ex: **Sys ID | is | d625dccec0a8016700a222a0f7900d06** (click **Run**).



3. What is the name of the group?

Create a Property

1. In the navigation menu filter, type **sys_properties.list**.



2. Click **New**.

3. Enter the following information the form:

   Suffix: **default.assignment_group**
   Description: **Default assignment group for new entitlements when they reach 'Work in Progress' state**
   Type: **String**
   Value: **(enter the name you noted in step 8)**

4. Click **Submit**.

Update the Business Rule

1. Navigate back to the **Set WIP field values** business rule.

2. Change the following script statement:

```
current.assignment_group = 'd625dccec0a8016700a222a0f7900d06';
```

   To the following:

```
current.assignment_group.setDisplayValue(gs.getProperty('x_cd_cumulus.defau
lt.assignment_group'));
```

3. Comment out the line containing **gs.addInfoMessage();.**

```
// gs.addInfoMessage('>>>DEBUG: BR: Set WIP field values: updating ' +
current.number);
```

4. Click **Update**.

Lab Success Verification

1. Navigate to **Cumulus > Entitlements > Open**.

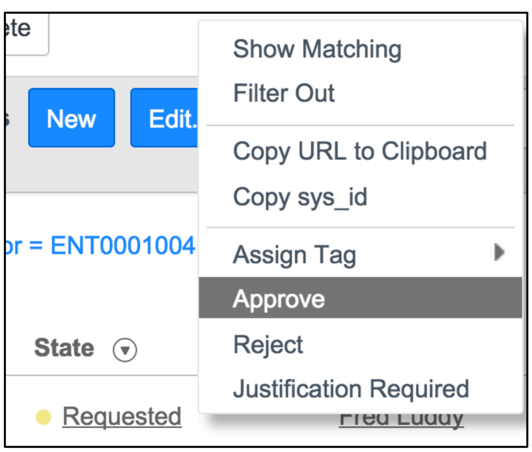
2. Open record **ENT0001005**.

3. Click the button **Request Approval.**

4. Scroll to the **Approvers** related list.

5. Right-click next to the word "**Requested**" and click **Approve**.

6. Confirm that the Entitlement is now in **Work in Progress** state.

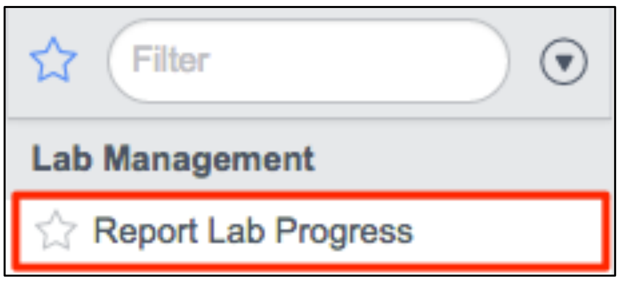


7. Confirm that the Assignment Group is set to **Service Desk**.

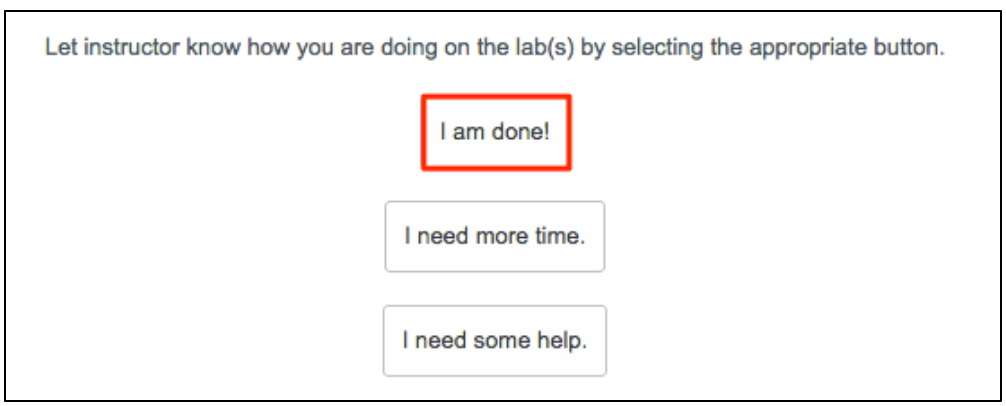
8. If it did not, check that the property name used in the business rule **exactly** matches the one you created in the **sys_properties** list.

Progress Report

1. Navigate to **Lab Management > Report Lab Progress**.



2. Click **I am done!**



Lab Goal

This lab explains how to improve scalability by replacing a call to **getRowCount()** with **GlideAggregate**.

Lab 4.1
Row
Counting

Review and Update the Script Include

1. Navigate to **System Definition > Script Includes**.
2. Locate and open the **CumulusUtils** script include.
3. Locate the function **countActiveEntitlements** (line 309).
4. Review the script and note any best practices that can be applied to this function.
   Notes:

5. Modify the function to the following sample. Comments at the end of the lines are for your direction and do not need to be entered.

```
countActiveEntitlements : function(requestId) {

    var entGr = new GlideAggregate(this.entitlementTable); // Update
    var count = -1;                                        // New

    // Count how many records are still active
    entGr.addAggregate(‘COUNT’);                           // New
    entGr.addQuery('request', requestId);
    entGr.addQuery('active', true);
    entGr.query();

    if (entGr.next())                                      // New
        count = entGr.getAggregate(‘COUNT’);               // New
//    var count = entGr.getRowCount();                     // Comment or
remove

    return count;

    },
```

6. Click **Update**.

Lab Success Verification

1. Navigate to **Cumulus > Create New**.

2. Fill in the form with the following values:

   Who is this the recipient of this request? **Caitlin Reiniger**
   Choose a user to model this request after: **Damion Matkin**
   Do you want to ADD this access to the requester or REPLACE their current access? **Add**
   When is this request due? **2015-05-04**
   Provide justification for requiring this access change: **Damion is on a special project**.

3. Click **Submit**.

4. In the request that appears, click the **Request Approval** button.

5. In the related list, open the first entitlement record.

6. Scroll to the **Approvers** related list.

7. Right-click next to the **Requested** state and choose **Approve**.

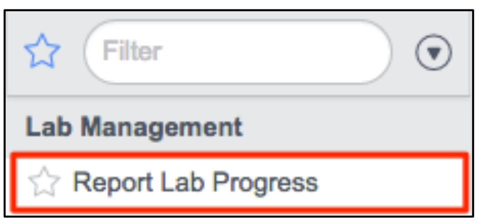
8. Click **Mark Complete**.

9. The screen returns to the parent request (REQ0001002). Repeat steps 4-8 for the second entitlement record.

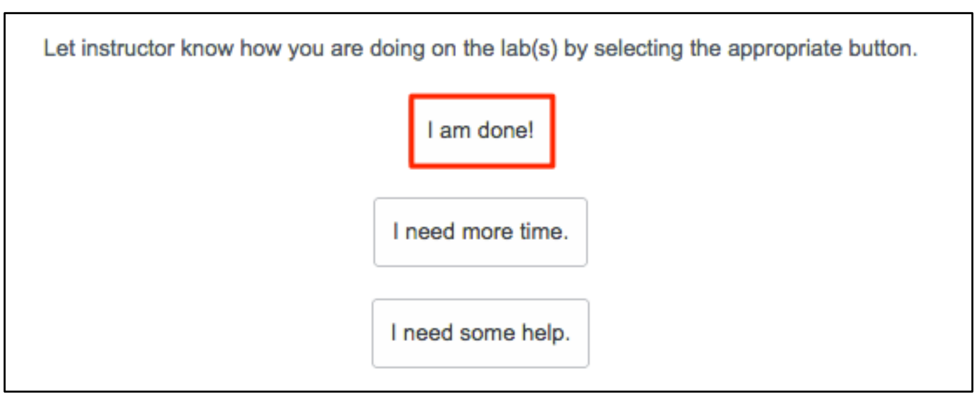
10. Confirm that you received the following message:

Progress Report

1. Navigate to **Lab Management > Report Lab Progress**.



2. Click **I am done!**



Additional Resources

http://wiki.servicenow.com/index.php?title=Business_Rules_Best_Practices

http://wiki.servicenow.com/index.php?title=Business_Rules_Best_Practices#Use_Script_Includes_Instead_of_Global_Business_Rules

http://wiki.servicenow.com/index.php?title=Client_Script_Best_Practices#Example:_Asynchronous_GlideAjax

http://wiki.servicenow.com/index.php?title=Client_Script_Best_Practices#Example:_g_scratchpad

http://wiki.servicenow.com/index.php?title=Coding_Best_Practices#Do_Not_Use_Hard-Coded_Values