knowledge14
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Lab Guide

Reporting 301:

Database Views, Metrics and Custom Charts

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Lab instance: https://<<name>>.lab.service-now.com

Login / Passwords:

admin / Knowledge14

itil / Knowledge14

employee / Knowledge14

Lab Goal

The IT manager has come to you to for some headline numbers. 'How many incidents do we have today? And how many incidents did we close last month, and how are we doing today?'

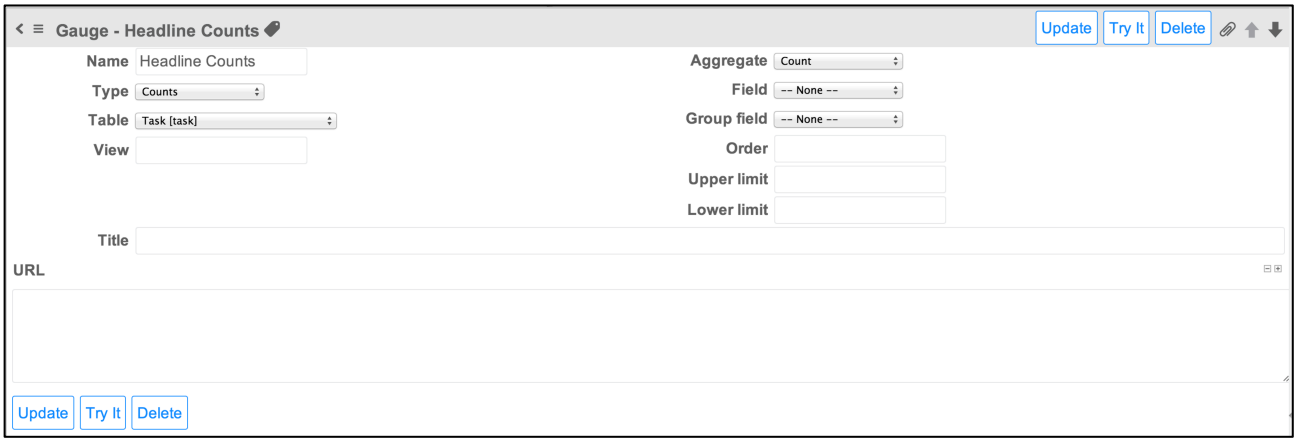
Whilst you know how to get those numbers really quick using lists, you have decided to make things better, and put the answers on a homepage for future reference.

Lab 1
Doing the numbers

Steps

1. Navigate to **System UI > Gauges**.
2. Click **New** and fill in the following information:

   Name: **Headline counts**
   Type: **Counts**
   Table: **Task**

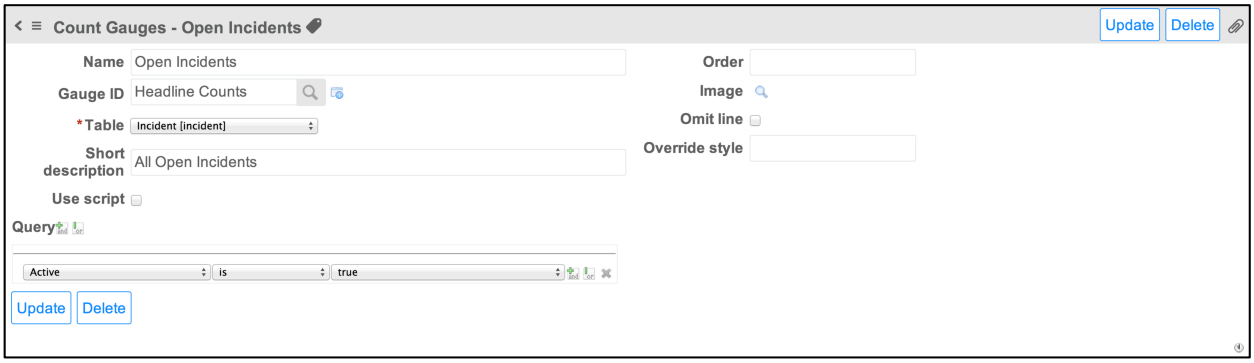


3. Right-click the **context bar** and choose **Save**.

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4. Click **New** under **Count Gauges**, and fill in the following information:

   Name: **Open incidents**
   Table: **Incident**
   Query: **active is true**
   Short description: **All open incidents**



5. Click **Submit**.

6. Click **New** under **Count Gauges**, and fill in the following information:

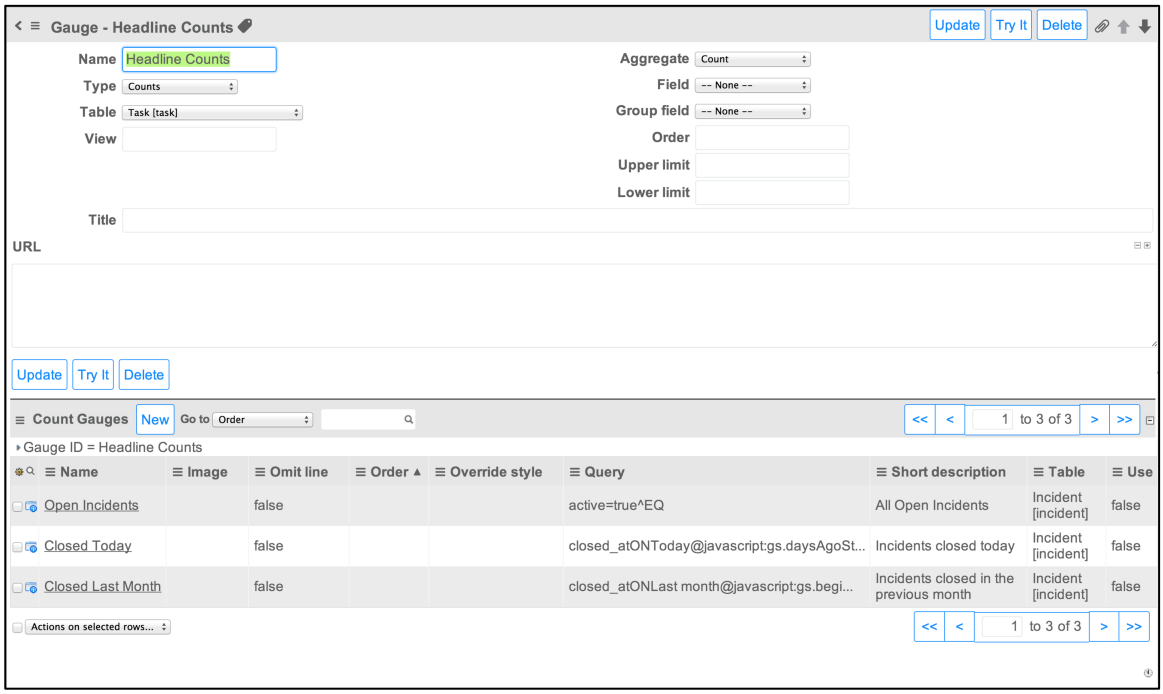
   Name: **Closed last month**
   Table: **Incident**
   Query: **closed on last month**
   Short description: **Incidents closed in the previous month**

7. Click **Submit**.

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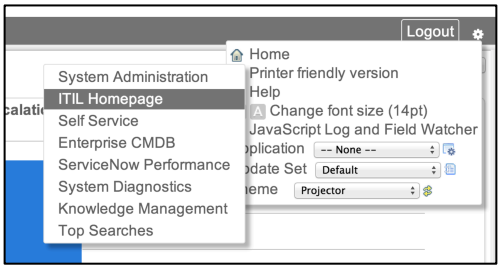
8. Click **New** under **Count Gauges**, and fill in the following information:

   Name: **Closed today**
   Table: **Incident**
   Query: **Closed on today**
   Short description: **Incidents closed today**



9. Click **Submit**

10. Go to your homepage, and add the gauge:
    - **Add content > Gauges > Task > Headline counts**
    - Choose a dropzone, which positions the graph on the homepage



11. If not on the correct homepage:
    - Click the **Cog Wheel** next to the logout button (right hand side)
    - Hover over **Home** and select **ITIL Homepage**

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Lab Goal

The IT manager has come to you to streamline making reports. At the moment, when you go to make a report, there is a large list of tables to choose from. This is complicated and confusing the team, so he has asked you to limit them to the task table list.

Lab 2
Reporting Security

How to Test

1. Click the key symbol next to the username to Start the **impersonation** feature.
2. Type in **ITIL User** in the lookup box, or click on **ITIL User** in Recent Impersonations.
3. Click **OK**.
4. Navigate to **Reports > View / Run**
5. Click **New**
6. Note what options are available in the Table selection field.
7. Once completed, return to being the System Administrator by choosing the option in the impersonation dialog.

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Steps

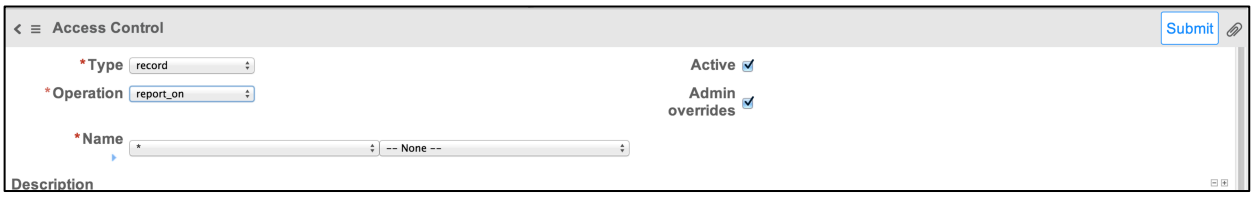
8. Navigate to **System Security > Access Control**. (You may have to activate elevated privileges to do this.)



9. Click **New**.

10. To restrict report creation fill in the following information:

    Type: **record**
    Operation: **report_on**
    Name: *** | None**
    Active: **Checked**
    Admin Overrides: **Checked**



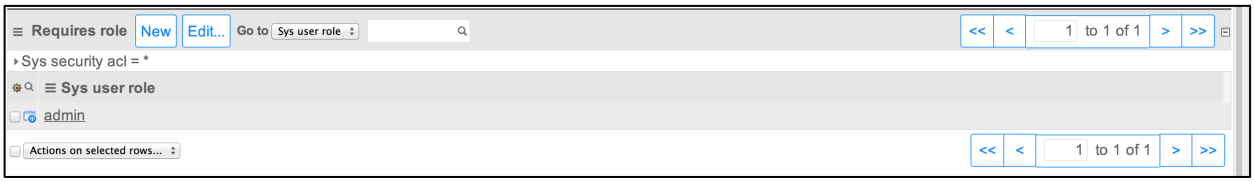
11. Right-click the context bar and choose **Save**.

12. Requires role > **Edit**.

13. Add **admin** to the **Requires role** List slushbucket.

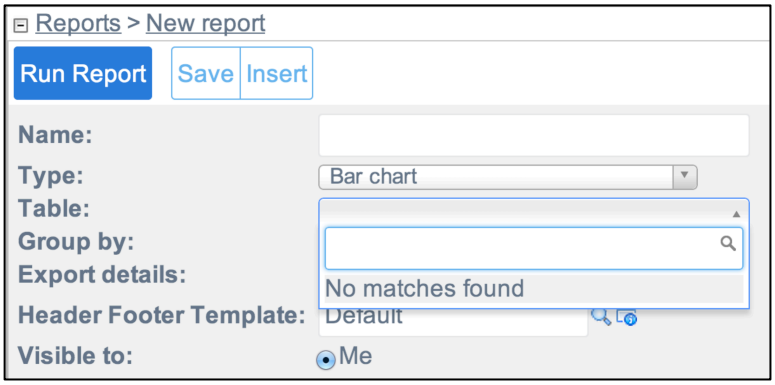
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14. Click **Save**.



This will create a default rule, blanking out the available tables completely.

15. Run the **How to test** steps (Steps 1 to 7 above). You should see something like this:



16. Navigate to System Security > Access Control

17. Click **New**. (Check your elevated privileges!)

18. To allow report creation, fill in the following information:
    Type: **record**
    Operation: **report_on**
    Name: **task | None**
    Active: **Checked**
    Admin Overrides: **Checked**

19. Right-click the context bar and choose **Save.**

20. Requires role > **Edit**.

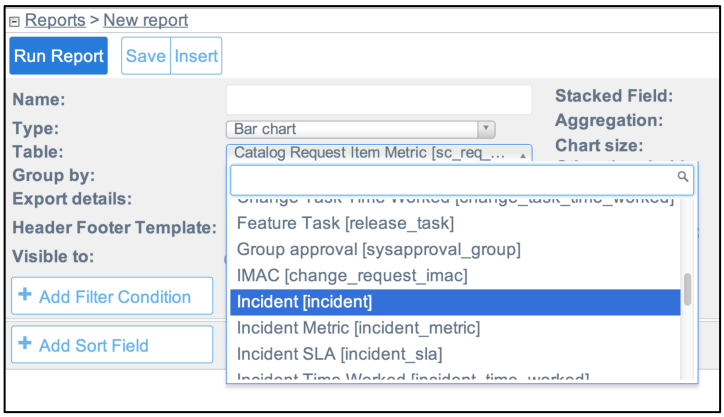
21. Add **itil** to the **Requires role** List slushbucket.

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22. Click **Save.**

This will override the access control rule, giving access to all the task table in the selection box.

Follow “How to test” steps 1 – 7 again. You should see something like this:



Bonus feature

How you do allow the selection of the report table (sys_report)? (Hint: look in UI properties.)

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Lab Goal

The business has come to you to understand how busy the IT department is. They want to know how many tasks are closed each hour, and how many open incidents there are per day.

Lab 3
Trend Data

Set-up Steps (NOTE: Steps 1, 2 and 3 already done)

1. Right-click on the **System Scheduler** application and choose **Edit Application**.

2. Edit the **Trend Data** module and make it active (double-click the '**active'** column for Trend Data and set to '**true'**)

3. Create a new Trend Jobs module to have a role of **admin**, and not **maint**.

   Title: **Trend Jobs**
   Roles: **admin**
   Active: **true**
   Hint: **Captures snapshots of data periodically based on aggregate queries**
   Link Type: **URL (from Argument)**
   Arguments: **sys_trend_jobs_list.do**
   Click **Submit**

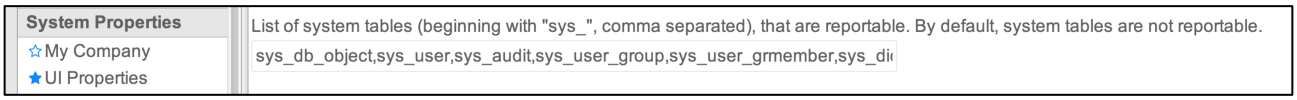
4. Click **System Scheduler > Trend Data**
   Notice the count of open change tickets, open incident tickets, and open problem tickets records.

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To allow this table to be reported on, change the appropriate property.

5. Navigate to **System Properties > UI Properties**

6. Add **sys_trend** to the list of expected tables in the **List of system tables that are reportable. By default, system tables are not reportable**.
   *** This is about 2/3rds down the page.

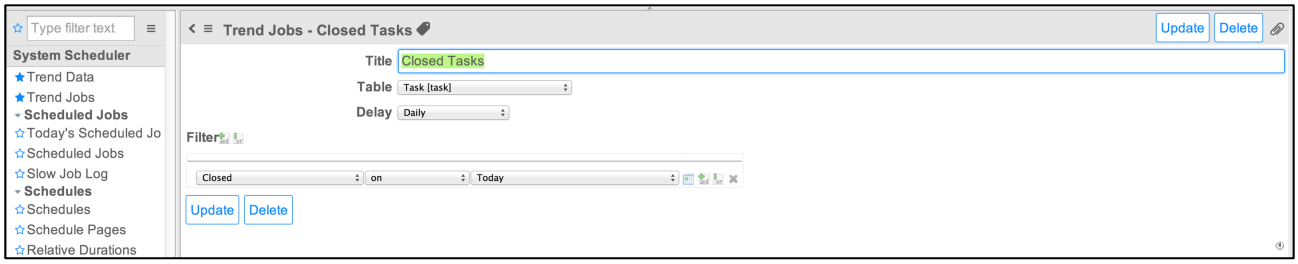


Steps to create the data source

7. Navigate to **System Scheduler > Trend Jobs**.

8. Click New and fill in the following information:

   Title: **Closed Tasks**
   Table: **task**
   Delay: **Hourly**
   Filter: **Closed on Today**



Steps to create the report

9. Navigate to **Reports > View/Run**.

10. Create a report with the following details:
    Type: **Line chart**
    Table: **sys_trend**
    Group by: **Name**
    Trend field: **Collected per Date**
    Aggregation: **Average Value**

11. Run the report.

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Bonus feature (Try this at home)

Change the report to see how you can get different data. For example, the Trend Field can be changed to Collected per Day to see which days of the week are busiest for the Support Desk. Also, change the type of graph to trend to see how you can connect time to the report.

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Lab Goal

The business is still not having the tasks closed quickly enough. They want to see which groups are meeting their performance targets.

To measure this, they wish to introduce an SLA to monitor performance, especially around problems. You will need to set up a basic SLA on the problem task table, then create a database view to enable easy reporting.

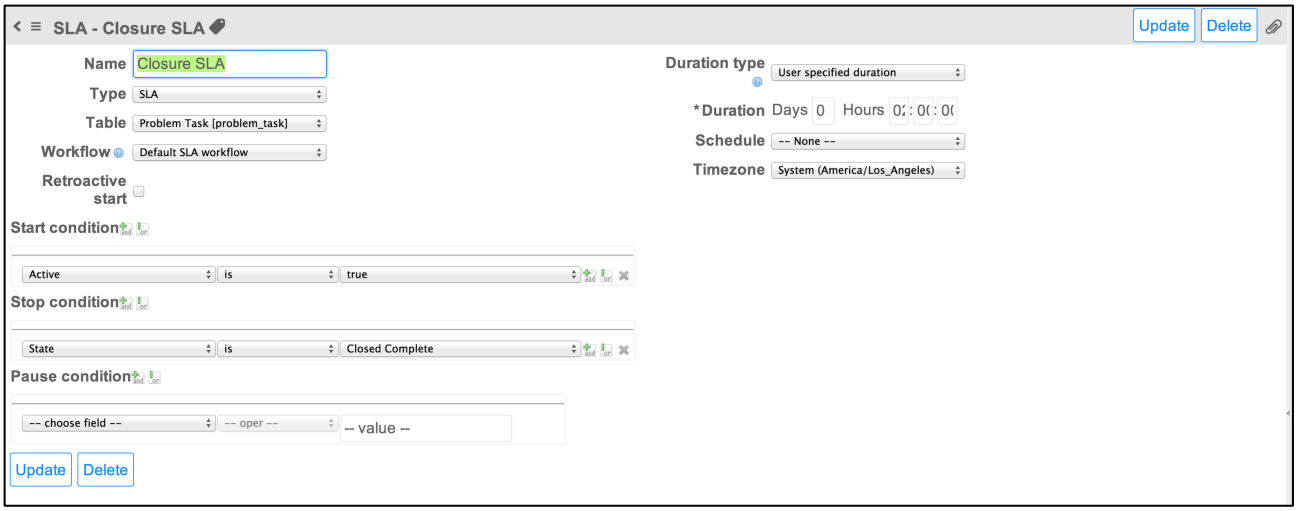
Lab 4 Task SLAs and Views

Steps to create the SLA

1. Navigate to **Service Level Management > SLA Definitions**

2. Click **New** and fill in the following information:

   Name: **Closure SLA**
   Table: **Problem Task**
   Workflow: **-- None --**
   Duration: **2 hours**
   Start condition: **Active is true**
   Stop condition: **State is Closed Complete**



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Steps to create test data

3. Navigate to **Problem > Open**, and choose a problem.
4. Click **New** under Problem Task.
5. In the Problem form, right-clickclick the context bar and choose **Personalize > Related Lists.**
6. Add the **Task SLA ->Task** option to the Selected list, then click **Save**.
7. Right-click, choose **Save**.
8. **Assign** the task to the **Network** team, and change the state to **Closed Complete**.
9. Click **Update**.
10. Click **New** under Problem Task.
11. **Assign** the task to the **Database** team. Click **Submit**.

Steps to create the database view

12. Navigate to **System Definition > Database Views**.
13. Click **New** and fill in the following information:

    Name: **SLA Tasks** (note how it changes the text)
    Label: **SLA Tasks**
    Right click the context bar, and choose **Save**.

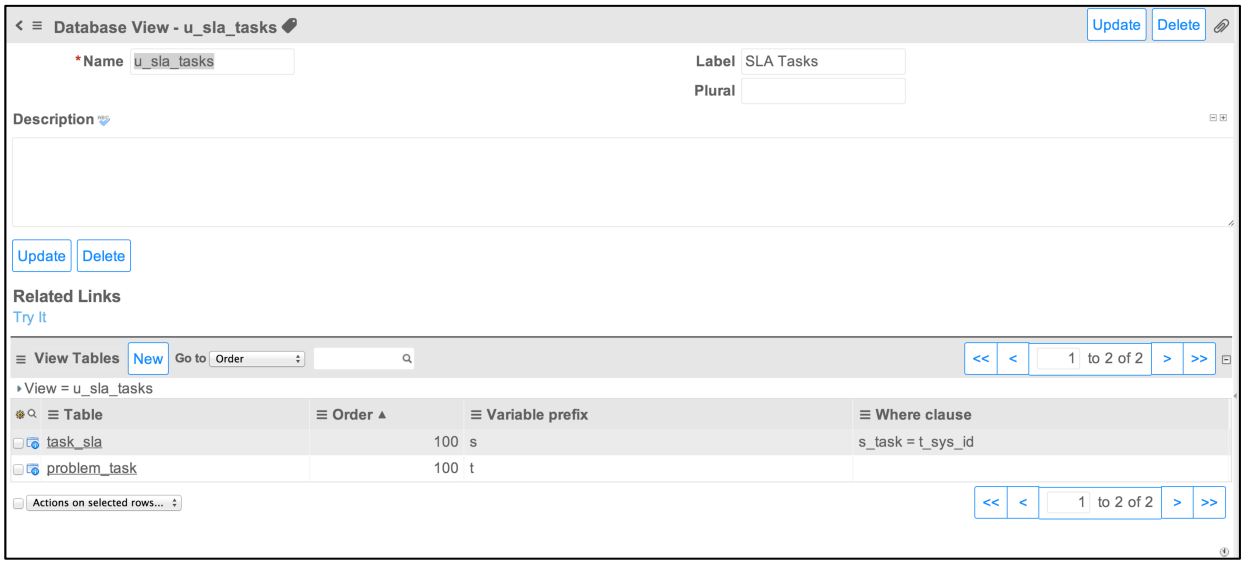
14. Click New under View Tables, and fill out the following information:

    Table: **Problem Task**
    Variable Prefix: **t**
    Click **Submit**

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15. Click New under View Tables, and fill out the following information:

    Table: **Task SLA**
    Variable Prefix: **s**
    Where clause: **s_task = t_sys_id**
    Click **Submit**



Steps to create the report

16. Navigate to **Reports > View/Run**

17. Create a report with the following details:

    Type: **Pivot table**
    Table: **SLA Tasks**
    Row: **Assignment Group**
    Column: **Stage**
    Condition: **SLA is Closure SLA**

18. Click **Try It** to run the report.

Why did we join?

The table join we made flattens the structure that already exists on the Task SLA table, but it is not possible to use reference fields in the row and column of the pivot table.

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Bonus reports

What other reports can you run to see how SLAs are being met?

Try a chart with the following options:

- Type: **Trend chart**
- Table: **SLA Tasks**
- Group by: **Stage**
- Trend by: **SLA Due per Date**

This report shows will highlight if there are any bad days when many SLAs where breached, or good days when things when well! Maybe try changing End time per Day to see if there are bad days of the week.

Another option could be a line chart:

- Type: **Line chart**
- Table: **SLA Tasks**
- Group by: **Assignment Group**
- Trend by: **SLA Due per Date**
- Filter: **Stage is Breached**

A line chart will show the relationship between dates, with this highlighting a spike in breaches.

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Lab Goal

A lot of effort is being misdirected because Inquiries coming into the service desk are often being set to priority 1 unnecessarily. Instead of setting a blanket rule in place to prevent this, management want to collect data to evaluate the conditions when this happens and see if there are any persistent offenders.

Lab 5
Metrics

Steps to create the metric

1. Navigate to **Metrics > Definitions**.

2. Click **New** and fill in the following information:

   Name: **Inquiry P1**
   Table: **Incident**
   Field: **Priority**
   Type: **Script calculation**
   Script: (You could copy the createMetric function from the 'Resolved by Known Error Metric, to save typing)

```
if (current.priority == 1 && current.category == 'inquiry') {
    createMetric();
}

function createMetric() {
    var mi = new MetricInstance(definition, current);
    if (mi.metricExists()) return;

    var gr = mi.getNewRecord();
    gr.field_value = current.caller_id.getDisplayValue();
    gr.calculation_complete = true;
    gr.insert();
}
```

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3. Test the metric.

- Creating a new incident with a category of **Inquiry / Help** (Should be default).
- Assign the ticket to an individual (ensure that the **Caller** field is populated)
- Then change the priority to **1** by setting the impact and urgency both to **1**.
- Return to your metric definition - incident will be counted in the related list.
- You may want to add the '**Field Value**' column to the **Metrics Instances** related list – what do you see in there?
- Try this several times to get some data.
- NOTE: you can also see the metrics data for a specific incident by switching in **Metrics view** on the Incident form.

Steps to create the report

4. Navigate to **Reports > View/Run**.

5. Create and run a report with the following details:

   Type: **List**
   Table: **Metric [metric_instance]**
   Group by: **None**
   Columns: **Created, Definition, ID, Value, Field value, Calculation Complete**
   Condition: **Definition is Inquiry P1**

6. Create and run a report with the following details (this will definitely work better with several days' data!):

   Type: **Line**
   Table: **Metric [metric_instance]**
   Trend Field: **Created per Date**
   Group by: **None**
   Condition: **Definition is Inquiry P1**

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Bonus Reports and Table Joins

To really drill into the detail, you could combine the metric instance table with the incident table using a database view. You could then see if the badly prioritized incidents correspond to a particular Service or Location, for example.

Alternatively, try joining the metric instance table with the incident and task SLA tables. This will show the incident manager how many P1 Inquiry incidents ended up with a breached SLA.

To do this, follow these steps:

7. Upgrade the priority of **INC0000047** by changing the impact and urgency both to **1**.

8. Navigate to **System Definition > Database Views**

9. Click **New** and fill in the following information

   Name: **Incident SLA Metric**
   Label: **Incident SLA Metric**
   Right-click on the header and **Save** the form

10. Click **New** from the View Tables section, and fill out the following information:

    Table: **Metric Instance**
    Variable Prefix: **m**
    Click **Submit**

11. Click **New** under View Tables, and fill out the following information:

    Table: **Metric Instance**
    Variable Prefix: **m**
    Order: **100**
    Click **Submit**

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12. Click **New** under View Tables, and fill out the following information:

    Table: **Task SLA**
    Variable Prefix: **s**
    Where: **s_task = m_id**
    Order: **200**
    Click **Submit**

13. Click **New** under View Tables, and fill out the following information:

    Table: **Incident**
    Variable Prefix: **i**
    Where: **i_sys_id = s_task**
    Order: **300**
    Click **Submit**

14. **Navigate to Reports > View/Run**

15. Create a report with the following details:

    Type: **List**
    Table: **Incident SLA Metric**
    Group by: **-- None --**
    Filter:
    Definition is Downgraded P1 (and)
    SLA is Priority 1 resolution (and)
    Stage is Breached
    Columns: (include at least the number field)

16. **Run** the report

    Any incidents that show up here will be marked as breached, but actually ended up as another priority. INC0000047 will show.

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Lab Goal

The IT management like the functionality that ServiceNow provides, but want a better overview of what's going on, focused especially on SLAs, the priority of tasks and how the Service Desk is performing.

You will be given less information on how to complete this exercise. Instead, you will need to use the skills you've learnt to build several new reports, pull in existing ones, and even modify an existing custom report to give dashboard of information.

Lab 6
Bringing it all together

Items to include

- A pie chart showing the current active incidents, grouped by priority.
- Update the 'ITIL summary counts' gauge to include a count of all open problems.
- A bar chart showing the active tasks that are within 30 minutes of breaching the Closure SLA (hint: try the actual time left field)
- A trend chart that looks at which day of the week is most productive in closing problems (hint: try modifying your existing trend chart)

Advanced items to include

- A chart that shows the number of active incidents, and the number of active problems for each month, on the same graph (hint: this will be a custom chart – help below!)

Steps to build your homepage

1. Click the Cog Wheel next to the logout button. Hover over **Home** and select **ITIL Homepage**.
2. Clean up the page by clicking the top-right 'X' of any unwanted gauges etc. Note the page is renamed to **My ITIL Homepage**.
3. Title your page by click in the **My Homepage text**, and editing.
4. Click the Add content link and choose reports as appropriate.

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Custom chart for incidents and problems

To get the code for the custom chart, you can copy it from a Knowledge Base article available in your Lab Instance. Use the Global Search (top right of your screen) to search for **'KB0010001'**. Then copy and paste it from the article.

5. If necessary, install the **Custom charts plugin**. This should have already been done for you.
6. Navigate to **Reports > Custom Charts**
7. Click **New**, and fill out the following information:

   Name: **Open Incidents & Problems**
   Type: **Script Generated**
   Render script: Copy from the first section of Knowledge Base article **KB0010001**
   Right-click the context bar and click **Save**
8. Click New under the 'Uses Generator' related list and fill out the following information:

   Name: **Trend of Open Problems**
   Run this script: Copy from the second section of Knowledge Base article KB0010001
   Right-click the context bar and click **Save**.
9. Click **Execute Now**.
   Click New under the 'Uses Generator' related list and fill out the following information:
10. Name: **Trend of Open Incidents**
11. Run this script: Copy from the third section of Knowledge Base article **KB0010001**
12. Right-click the context bar and click **Save**.
13. Click **Execute Now**.
14. You will need to wait until the two scheduled data collection jobs complete before you can run the report. When the scheduled jobs complete, they fill in the Summary field. Keep refreshing the form until both the Summary fields are populated. To refresh the form, right-click the context bar and click Reload form
15. Once both summaries have been completed, click **Try it**.
16. To add to your home page, click the home icon, choose Add content > Custom charts > Open Incidents & Problems.

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Additional Resources

Below is a list of links to some additional resources that you may find useful. Hopefully the names should be pretty self-explanatory!

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

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

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

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

http://wiki.servicenow.com/index.php?title=Administering_Reports#Report_Security

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

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

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

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

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

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

http://www.jfree.org/jfreechart/

http://www.jfree.org/jfreechart/api/javadoc/index.html

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