Analyzing PURL Usage at your Library

Getting started:

1) Gather network information for your institution
2) Log in to the FDLP PURL Usage Report
3) Draft 'patterns' for your library
4) Fine tune and save patterns for your library's profile on the Library Report Dashboard
5) Run the report
6) Analyze your report

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1) Gather network information for your institution, including:

- Website address
- Catalog address
    - If you have a discovery layer, be sure to identify the address of the layer as well as the classic catalog
- LibGuide domain
- Learning Management System's domain
- Wireless networks
- Ethernet
- VPN tunnels

Ask your IT staff to identify:

- Individual IP addresses
- IP address range(s)
- IP address blocks, ex. Classless Inter-Domain Routing (CIDR) blocks

You will have the following identifying information for your library:

- Website address
- Catalog address
    - If you have a discovery layer, be sure to identify the address of the layer as well as the classic catalog
- LibGuide or subject guide domain
- Learning Management System's domain
- Wireless networks
- Ethernet
- VPN tunnels
- IP address:
    - Individual IP addresses
    - range(s)
    - blocks, ex. Classless Inter-Domain Routing (CIDR) block

2) Log into the FDLP PURL Usage Report tool

User name = library number (ex. 0123C)
Password = internal password (ex. FDLP12345)
Email askGPO if you do not have your log in information

3) Draft 'patterns' for your library

Patterns = The search strings you are asking the PURL Usage report to look for and report back to you

Hint – in the PURL Usage tab, run an All PURL referrals by target report and try to isolate some of the more obvious networks and domains used by your library.

Tips:

A . [period] searches for a period and will only retrieve data when a period is found exactly where you specify in your pattern

An * [asterisk] searches for any characters – at least one (that includes a period)

Do not save anything after .edu .com .gov

An * substitutes <u>one section</u> of the IP address, including a period

Do not use a wildcard at the beginning of an IP address

Libraries are able to save IP address ranges:

192.168.0.0 (single address)
192.168.0.0/25 (CIDR block)
192.168.0.1-192.168.0.100 (address range)
192.168.0.0+9 (IP address plus subsequent 10 addresses)

Examples of domain, network, and host patterns

Pattern	Will retrieve	Will not retrieve
*.example.org	abc.example.org abd.def.example.org	abc.myexample.org
*example.org	abc.example.org abd.def.example.org abc.myexample.org	example.org
*.*example.org	abd.def.example.org abc.myexample.org	abc.example.org example.org
example.org*.	Invalid - a domain cannot end with a period	
example.org*	example.org2 example.org.gov example.org2.gov example.org2.gov.com	example.org abc.example.org
example.org*.*	example.org2.gov example.org2.gov.com	example.org2 example.org.gov
example.org	example.org	An exact match so no other domains are retrieved

Examples of IP address patterns

Patterns	Explanation
192.168	Invalid pattern – incomplete IP address
192.168.0.1*	Invalid pattern - IP addresses do not extend beyond the 4th section of numbers
***.168.0.0**	Invalid pattern - cannot have a wildcard at the beginning of an IP adddress
.	Invalid pattern - cannot have a wildcard at the beginning of an IP adddress
192.168.*	Valid pattern - will match 192.168.0.1 and 192.168.1.1
192.168.0.*	Valid pattern - will match 192.168.0.1 and 192.168.0.2 and so on
192.*.0.*	Valid pattern - will match 192.168.0.1, 192.167.0.1 and 192.168.0.2 and so on
192.168.0.1	Valid pattern - single IP address
192.168.0/24	Invalid pattern – incorrect CIDR block
192.168.0.0/24	Valid pattern - CIDR block
192.168.0.1 - 192.168.0.100	Valid pattern - IP address range
192.168.0.0 + 9	Valid pattern - group of 10 IP addresses
134.129.9.*	Valid pattern - will retrieve usage data for anything that matches the first 3 sections of numbers in the IP Address, such as 134.129.9.17, 134.129.9.166, and 134.129.9.235

The goal is to identify your library's networks and IP addresses and to translate them into patterns.

4) Fine tune and save patterns for your library's profile on the **Library Report Dashboard**

Save patterns
Click Edit.
Click the plus sign and fill out the patterns and the Pattern Note.
Click Save.

Delete patterns
Click Edit.
Click the minus sign next to the pattern to be deleted.
Click Save.

Run a report 'on-the-fly'
Select a month in the drop down box and click Generate Report.
Open up the report and review it. Does the results match what you expected?
Make any necessary adjustments to the patterns.

Rerun the report as often as needed.

5) Run your monthly reports

Common issues

High TTL (Time to Live) setting
Duplicate entries in the report that looks like a PURL was clicked on several times in the same minute or second may be a result of a high TTL setting. To minimize this in future reports, lower your TTL setting to give the other server time to respond to the link request.

Link checkers
Reports with link checker data typically has a wide swath of usage hits that occur at regular intervals over a period of time. If that happens, let GPO staff know what the IP address of your link checker is and we'll route your link checker to a different server so it doesn't muddy your usage data.

Low usage?

- Test your patterns using different monthly data
- Are you patterns saved correctly?
- Are you using PURLs?

If you find you truly do have low usage, use it as leverage to build the digital depository collection

6) Analyze your FDLP PURL Usage report

Note – this tutorial was created using Microsoft Office Excel 2019. Instructions will vary for other versions of Excel.

What are people clicking on?

Configure the SuDoc Number so you only see the SuDoc stem
Click on the column to the right of the SuDoc Number column to select it and on the Home Tab, click Insert.
Select the SuDoc number column.
Under the Data tab, click Text to Columns.
In the dialog box, leave the file type at the "Delimited" default and click Next.
Check the box next to Other, and type in a colon character.
Click Next.
Leave everything at default and click Finish.
Name the new column "Cutter" or something similar.
This sheet is the "master data tab."

Pivot the data
Click the blank area next to cell A1 to select the entire table.
Under the Insert Tab, click PivotChart, and then select PivotChart & PivotTable.
In the dialog box, leave everything at default to put the PivotTable into a New Worksheet, click OK
In the PivotTable, drag the SuDoc Number field down to the AXIS area.

Drag the same field down to the VALUES area.

Customize the chart
Change it to a Bar chart in the Design tab.
Add data labels to the chart by clicking once on the chart and then on the green plus sign to the right of the chart. Select Data Labels > Outside End.
Sort the list by right clicking in a cell of the Count of SuDoc Number column and selecting Sort by…

Name the tab on your spreadsheet and save it.

When did people click on PURLs?

In the master data tab, first convert the Timestamp (in Eastern Time) to your local time zone, if needed.
Select the Timestamp column and on the Home Tab, click Insert.
Click in the first cell of the new column.
The formula to convert to your local time zone is: **=YourTimestampCell+or-TIME(#,0,0)**

The plus or minus information and the number can be found below

	To covert the PURL Usage Report Timestamp to my local…			
I am located in this time zone:		**Standard Time (fall/winter)**	**Daylight Savings Time (spring/summer)**	**When my local time zone does not observe Daylight Savings Time (spring/summer)**
=TimestampCell	+ or -	(#,0,0)		
Guam/FSM (Chamorro)	+	15	N/A	14
Samoa	-	6	N/A	7
Hawaii	-	5	N/A	6
Alaska	-	4	4	5
Pacific	-	3	3	4
Mountain	-	2	2	3
Central	-	1	1	2
Eastern	-	No conversion	No conversion	1
Atlantic	+	1	N/A	No conversion

Type in the formula and click Enter.
Click in the new converted timestamp cell and mouse over the lower right corner until the plus sign appears.
Double click on the plus sign to draw the formula down the column.
Name the new column something like “Local Timestamp”.

Pivot the data
Click the blank area next to cell A1 to select the entire table.
Under the Insert Tab, click PivotChart, and then select PivotChart & PivotTable.
In the dialog box, leave everything at default to put the PivotTable into a New Worksheet, click OK
In the PivotTable, drag the Local Timestamp field down to the AXIS area.

Drag the same field down to the VALUES area.
In the Local Timestamp column running down the left side, right click on any of the cells and select Group.
Group by Hours and click OK.

Customize the chart
Add data labels to the chart by clicking once on the chart and then on the green plus sign to the right of the chart. Select Data Labels > Outside End.

Alternate Chart – Count of PURL usage by day of the month
Right click in a cell in the Timestamp column again and select Group.
Unselect Hours and select Days.
Click OK

Name the tab on your spreadsheet and save it.

What tools were being used when they found your PURLs?

In the master data tab, pivot the data
Click the blank area next to cell A1 to select the entire table.
Under the Insert Tab, click PivotChart, and then select PivotChart & PivotTable.
In the dialog box, leave everything at default to put the PivotTable into a New Worksheet, click OK
In the PivotTable, drag the Pattern Note field down to the AXIS area.
Drag the same field down to the VALUES area.

Customize the chart
Add data labels to the chart by clicking once on the chart and then on the green plus sign to the right of the chart. Select Data Labels > Outside End.
Change it to a Pie chart in the Design tab.
Some of the data will report what tool was being used. Some of the data will report which network was being used because the tool name was not transferred to the PURL server.

Name the tab on your spreadsheet and save it.

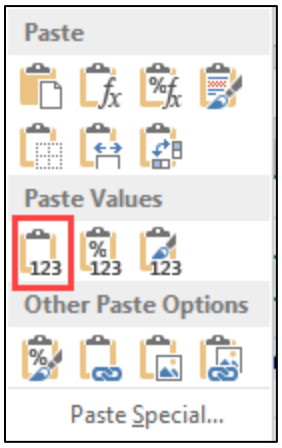
What were people clicking on over time?

First compile as many months of data as you want into a new worksheet. You can run up to 12 months of older reports in the Library Report Dashboard.
Make sure the columns all match.
Make sure the SuDoc Number column has been parsed on the colon character so it only displays the SuDoc stem.

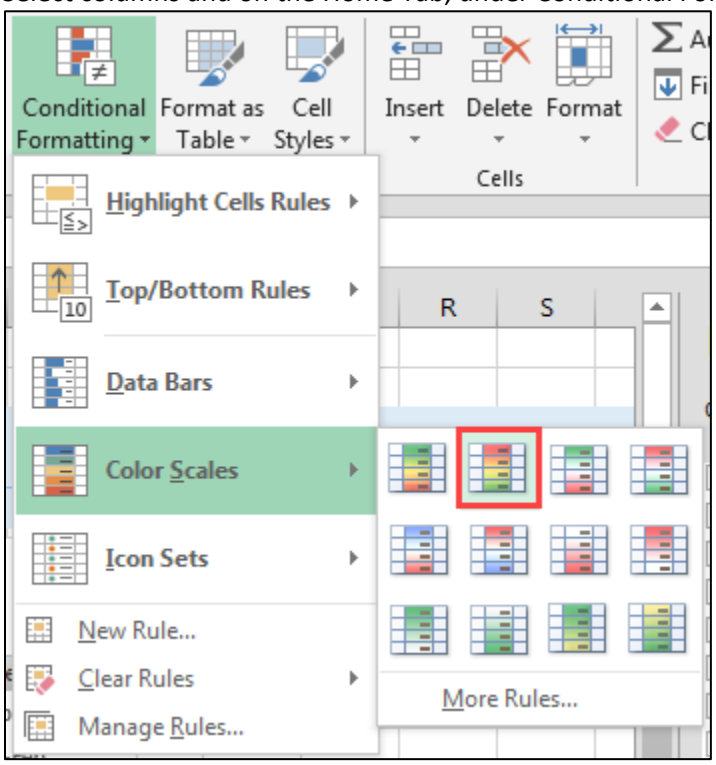
Pivot the data
Click the blank area next to cell A1 to select the entire table.
Under the Insert Tab, click PivotChart, and then select PivotChart & PivotTable.
In the dialog box, leave everything at default to put the PivotTable into a New Worksheet, click OK
In the PivotTable, drag the Local Timestamp field down to the AXIS area.

Right click on any Timestamp cell and select Group.
Group the data by Month and click OK.
In the AXIS box, drag the same Timestamp field over to the LEGEND or COLUMNS area. The grouping should remain and the months should display across the top.
Drag the SuDoc Number field down to the AXIS or ROWS area.
Drag the same field down to the VALUES area.

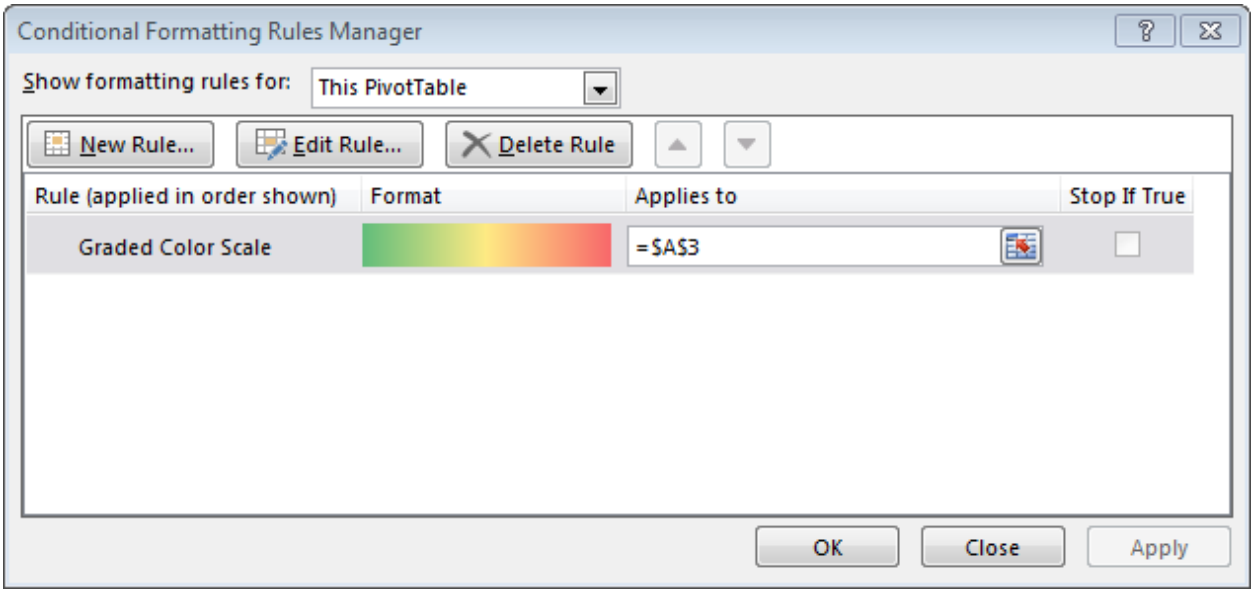
Move the data to a clean worksheet
Copy the data and values.
On the Home Tab, under Paste, select Paste as Values



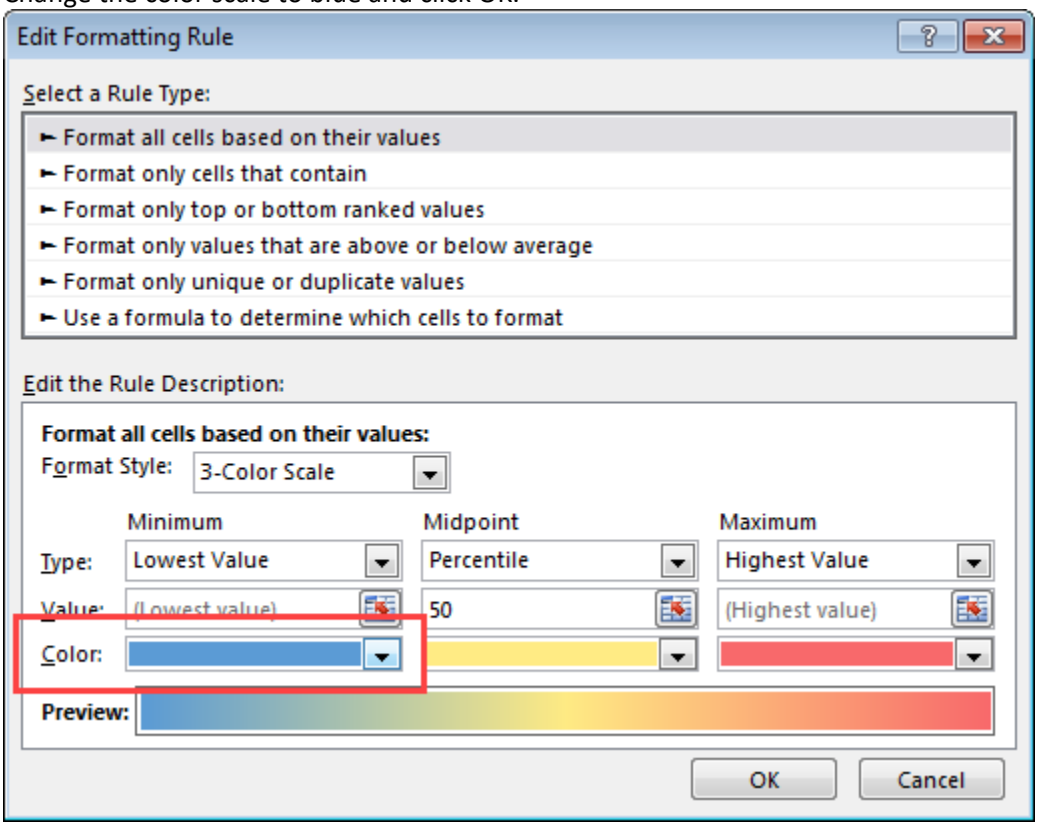
Customize the table
Delete blank rows and columns.
Select columns and on the Home Tab, under Conditional Formatting, select a Color Scale.



Select the column again and on the Home Tab, under Conditional Formatting, select Manage Rules. Double click on the rule for the selected data.



Change the color scale to blue and click OK.



Name the tab on your spreadsheet and save it.

Questions? askGPO - https://ask.gpo.gov/s/