



Salesforce Shield Event Monitoring

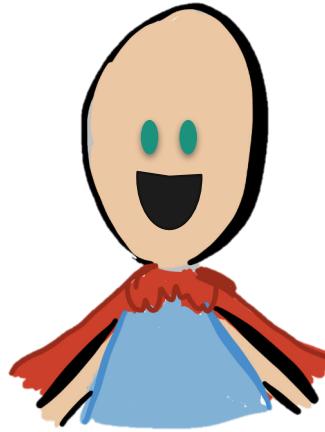
Go way beyond monitoring logins history or opportunity records creation...

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[@VinceFINET](https://twitter.com/VinceFINET)

Yes, I am a Salesforce employee and I love it...



... but, today,...



I will speak just as an **admin** who
discovered **Salesforce Shield Event Monitoring** and
helped his **customer** to get the best out of it.

Agenda

On your mark! Get set!! Go!!! and questions...



1

ON YOUR MARK!

Introducing
Salesforce Shield



2

GET SET!

Explaining
Salesforce Shield
Event Monitoring



3

GO!

Event Monitoring
+ Einstein Analytics
Superpower!

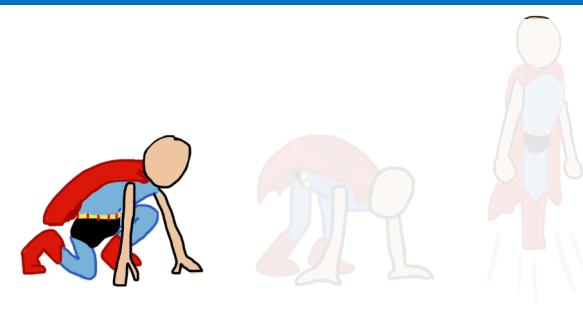


Questions &
Answers

1

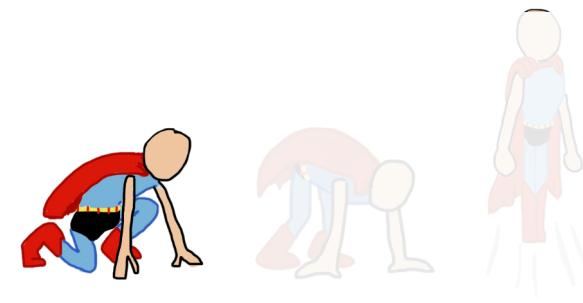
Introduction Salesforce Shield

Did you say “Shield”?



Introduction Salesforce Shield

Well... **Salesforce** Shield!



When? Introduced by Salesforce in 2015

Why? Help customers with complex governance and high compliance and security needs

How? A premium set of three integrated services built natively in the Platform (additional licenses)



**Shield
Platform Encryption**



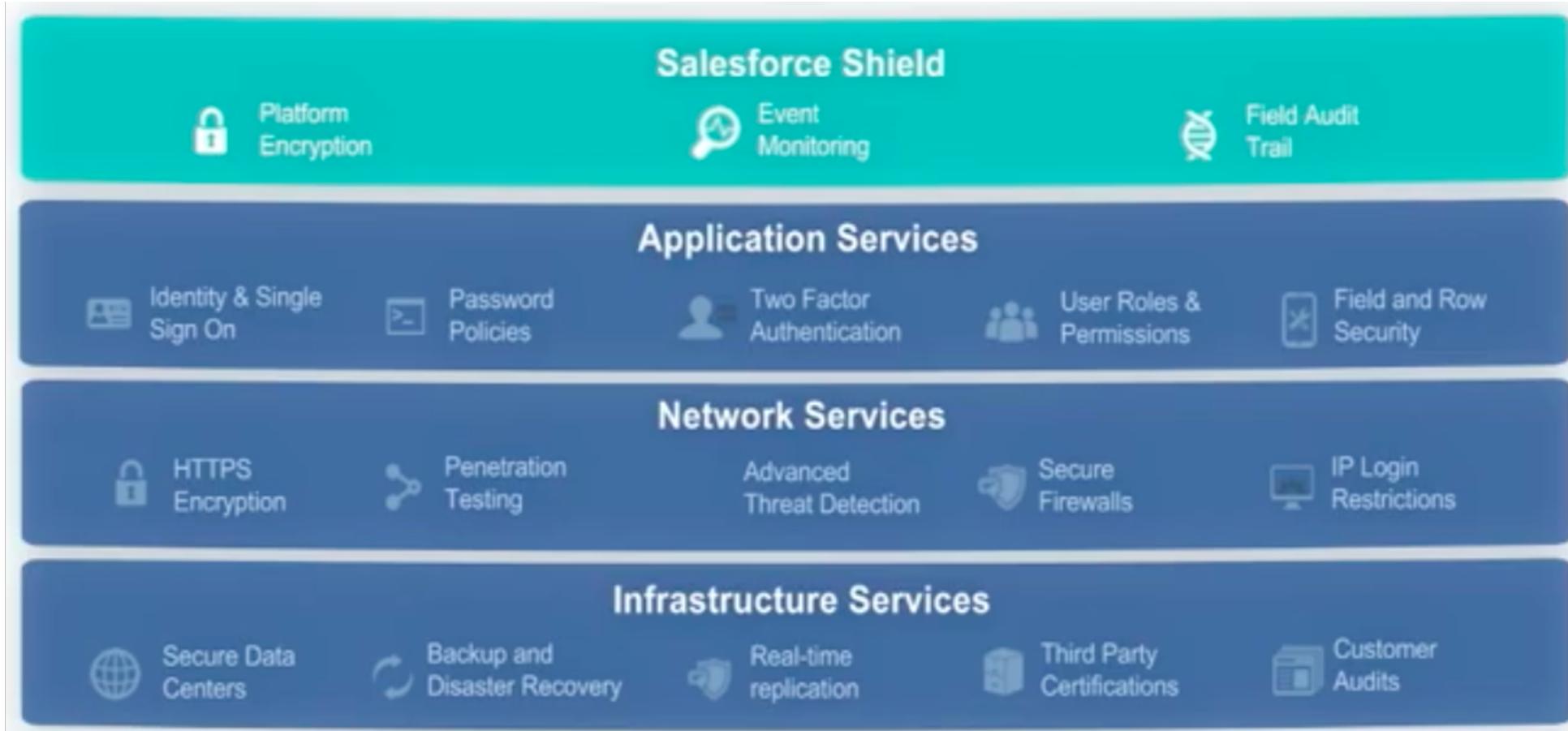
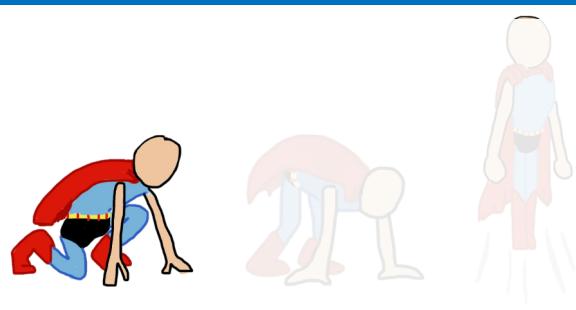
**Shield
Field Audit Trail**



**Shield
Event Monitoring**

Introduction Salesforce Shield

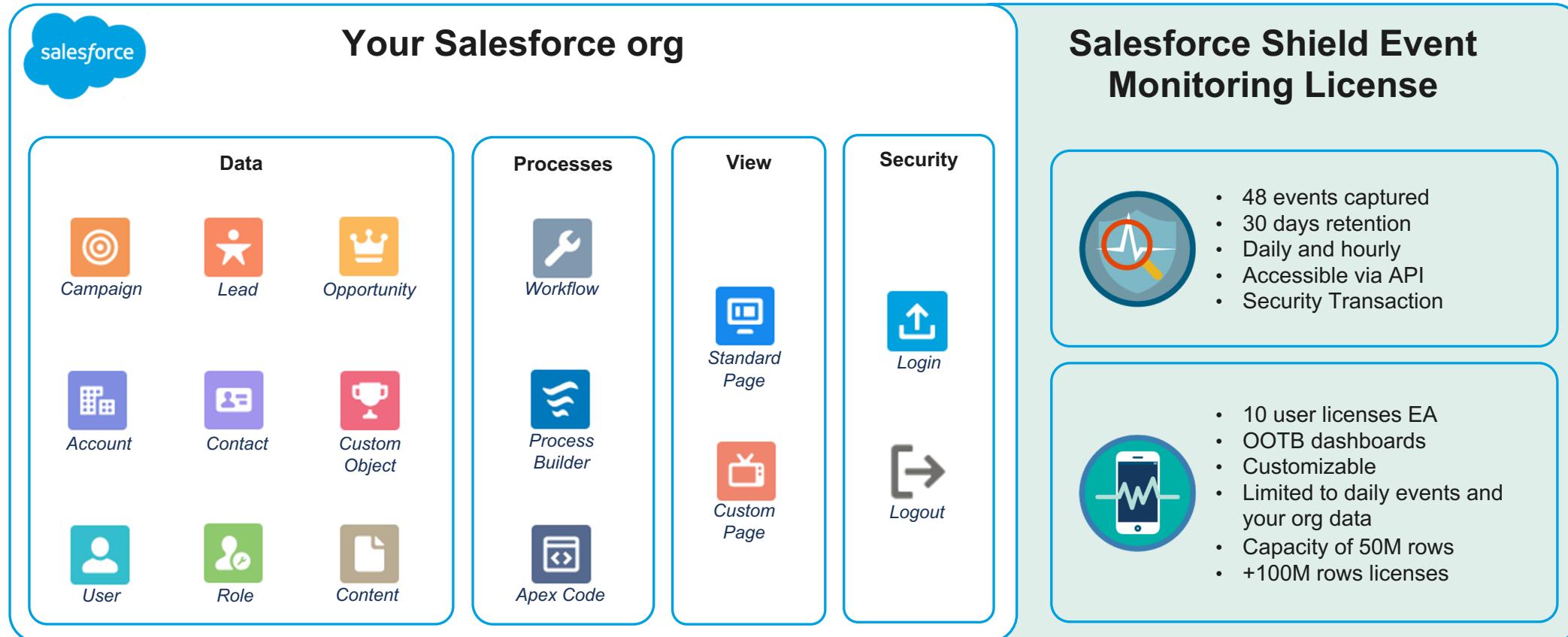
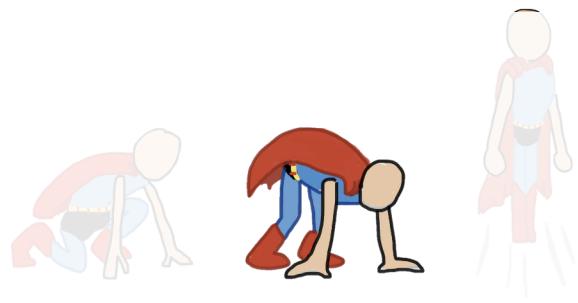
Don't get me wrong! Salesforce is already secure!



2

Explaining Salesforce Shield Event Monitoring

Tell me about it!!!



For more info about all the 48 events:

https://developer.salesforce.com/docs/atlas.en-us.api.meta/api/force_api_objects_eventlogfile_supportedeventtypes.htm

Explaining Salesforce Shield Event Monitoring

Example of 12 event types (over 48)



Adoption & Engagement



Search &
Search Clicks



Lightning Page
View



Lightning
Interaction



Report
Execution

Monitor & Performance



Visualforce
Request



Lightning
Performance



Apex
Execution



Lightning
Error

Security & Compliance



Sandbox
creation



Platform
Encryption



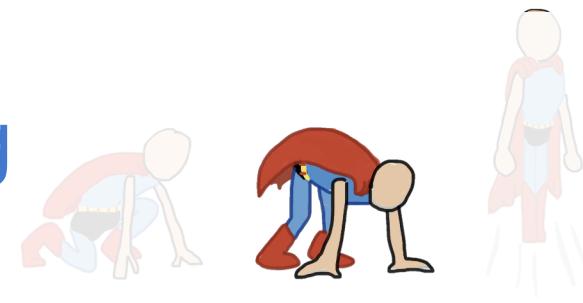
Login
History



Report
Export

Explaining Salesforce Shield Event Monitoring

Focus on the Lightning Page View event



Each log entry of that Event Type has the following fields:

APP_NAME	EVENT_TYPE	PARENT_UI_ELEMENT	TIMESTAMP
BROWSER_NAME	GRANDPARENT_UI_ELEMENT	PREVPAGE_APP_NAME	TIMESTAMP_DERIVED
BROWSER_VERSION	LOGIN_KEY	PREVPAGE_CONTEXT	UI_EVENT_ID
CLIENT_ID	ORGANIZATION_ID	PREVPAGE_ENTITY_ID	UI_EVENT_SEQUENCE_NUM
CLIENT_IP	OS_NAME	PREVPAGE_ENTITY_TYPE	UI_EVENT_SOURCE
CONNECTION_TYPE	OS_VERSION	PREVPAGE_URL	UI_EVENT_TIMESTAMP
DEVICE_ID	PAGE_APP_NAME	REQUEST_ID	USER_AGENT
DEVICE_MODEL	PAGE_CONTEXT	SDK_APP_TYPE	USER_ID
DEVICE_PLATFORM	PAGE_ENTITY_ID	SDK_APP_VERSION	USER_ID_DERIVED
DEVICE_SESSION_ID	PAGE_ENTITY_TYPE	SDK_VERSION	USER_TYPE
DURATION	PAGE_START_TIME	SESSION_KEY	
EFFECTIVE_PAGE_TIME	PAGE_URL	TARGET_UI_ELEMENT	

For more info about that event:

https://developer.salesforce.com/docs/atlas.en-us.api.meta/api/sforce_api_objects_eventlogfile_lightningpageview.htm

2

Explaining Salesforce Shield Event Monitoring

Focus on the Lightning Page View event



On Einstein Analytics, after creating a Shield Event Monitoring application, I have 2 Datasets available:

The screenshot shows the Analytics Studio interface with the following details:

- ANALYTICS Recent**: Shows 2 items.
- SEARCH BAR**: Contains the text "pageVie".
- NAVIGATION**: Includes tabs for ALL, APPS, DASHBOARDS, LENSES, and DATASETS. The DATASETS tab is selected.
- RECENT SECTION**: Sub-titled "Recent" and "Created by Me". It lists two datasets:
 - LightningPageView**: App "Shield Event Monitoring" created by "Vincent FINET".
 - LightningPageViewWithUsers**: App "Shield Event Monitoring" created by "Vincent FINET".

The data is now available in Einstein Analytics with and without Users' information, ready to be used!

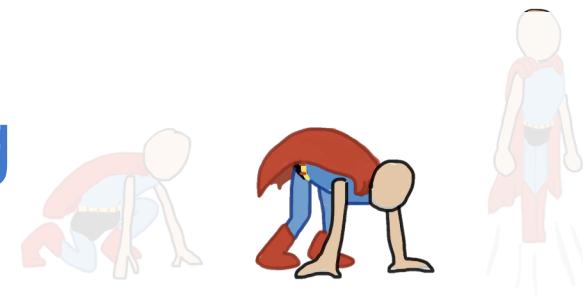
The screenshot shows the "New Lens" interface with the following details:

- HEADER**: Shows "Analytics Studio" and "New Lens".
- SIDEBAR**: Titled "Datasets" and lists "LightningPageView... Fields". It has tabs for "DATA" and "FILTERS".
- DATA PREVIEW**: A table with columns: #, USER_ID_DERIVED, User.Name, LOGIN_KEY, PAGE_CONTEXT, PAGE_ENTITY_TYPE, and TIMESTAMP_DERIVED. The table contains 8 rows of data.

#	USER_ID_DERIVED	User.Name	LOGIN_KEY	PAGE_CONTEXT	PAGE_ENTITY_TYPE	TIMESTAMP_DERIVED
1	005D0000005Qf7IAE	Carol Danvers	c/33hGGFxV5krD1Q	home:landing		2019-07-15T10:38:17.090Z
2	005D0000005Qf7IAE	Carol Danvers	c/33hGGFxV5krD1Q	reports:reportBase	Report	2019-07-15T10:47:29.116Z
3	005D0000004G7gjAC	Tony Stark	9tIYkZ75JC+EX2Um	home:landing		2019-07-10T6:53:15.143Z
4	005D0000004G7gjAC	Tony Stark	9tIYkZ75JC+EX2Um	force:objectHomeDesktop	Account	2019-07-10T6:55:10.789Z
5	005D0000004G7gjAC	Tony Stark	9tIYkZ75JC+EX2Um	one:recordHomeFlexipage	Account	2019-07-10T6:59:39.159Z
6	005D0000005Qf7IAE	Carol Danvers	r5jkNROLvMA2ROfv	one:recordHomeFlexipage	Contact	2019-07-18T13:24:21.943Z
7	00557000007qfUFAAY	Steve Rogers	DLLuUrzwuAcBj6A	home:landing		2019-07-14T15:19:12.523Z
8	00557000007qfUFAAY	Steve Rogers	DLLuUrzwuAcBj6A	one:recordHomeFlexipage	Account	2019-07-14T15:27:34.445Z

Explaining Salesforce Shield Event Monitoring

Focus on the Lightning Page View event



The data is in Salesforce as a CSV file, accessible via the API

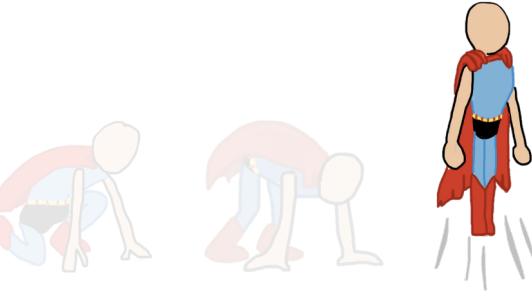
USER_ID_DERIVED	LOGIN_KEY	PAGE_CONTEXT	PAGE_ENTITY_TYPE	TIMESTAMP_DERIVED
005D00000055Qf7IAE	c/33hGGFxV5krD1Q	home:landing		2019-07-15T10:38:17.090Z
005D00000055Qf7IAE	c/33hGGFxV5krD1Q	reports:reportBase	Report	2019-07-15T10:47:29.116Z
005D0000004G7gjIAC	9tIYkZ75JC+EX2Um	home:landing		2019-07-10T6:53:15.143Z
005D0000004G7gjIAC	9tIYkZ75JC+EX2Um	force:objectHomeDesktop	Account	2019-07-10T6:55:10.789Z
005D0000004G7gjIAC	9tIYkZ75JC+EX2Um	one:recordHomeFlexipage	Account	2019-07-10T6:59:39.159Z
005D00000055Qf7IAE	r5jkNROlvMA2ROfv	one:recordHomeFlexipage	Contact	2019-07-18T13:24:21.943Z
00557000007qfUFAAY	DLLuUrzwuAcBj6A	home:landing		2019-07-14T15:19:12.523Z
00557000007qfUFAAY	DLLuUrzwuAcBj6A	one:recordHomeFlexipage	Account	2019-07-14T15:27:34.445Z

You could also use the “Event Log File Browser” app to retrieve all the available event data from Shield Event Monitoring: <https://salesforce-elf.herokuapp.com>

3

EM + EA = Superpowers!

Example: What are the common paths that your users go through?



A user visits our org with this path: “Home > Account Home > Account Record”

Home

Account Home

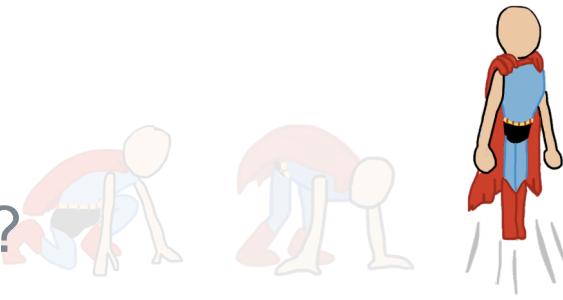
Account Record

Account Name	Type	Phone	Website	Account Owner	Account Site	Industry
Big State Recycling	Customer - Direct	(512) 757-6000	http://edgecomm.com	Vincent Finet		Electronics
Burlington Textiles Corp of America						
Dickenson plc						
Edge Communications						
Express Logistics and						
GenePoint						
Golden Ind.						
Golden Solutions						
Grand Hotels & Resorts Ltd						

3

EM + EA = Superpowers!

Example: What are the common paths that your users go through?



Existing “LightningPageViewWithUsers” dataset is not enough to show paths

USER_ID_DERIVED	LOGIN_KEY	PAGE_CONTEXT	PAGE_ENTITY_TYPE	TIMESTAMP_DERIVED
005D00000055Qf7IAE	c/33hGGFxV5krD1Q	home:landing		2019-07-15T10:38:17.090Z
005D00000055Qf7IAE	c/33hGGFxV5krD1Q	reports:reportBase	Report	2019-07-15T10:47:29.116Z
005D00000055Qf7IAE	r5jkNROlvMA2ROfv	one:recordHomeFlexipage	Contact	2019-07-18T13:24:21.943Z
00557000007qfUFAAY	DLLuUrzwtuAcBj6A	home:landing		2019-07-14T15:19:12.523Z
00557000007qfUFAAY	DLLuUrzwtuAcBj6A	one:recordHomeFlexipage	Account	2019-07-14T15:27:34.445Z

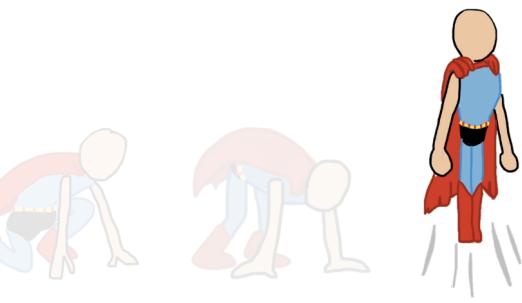
We need to transform and extend it via a DataFlow in Einstein Analytics!

USER_ID_DERIVED	LOGIN_KEY	PageCtxCorrected	IsLast	PagePath	TIMESTAMP_DERIVED
005D00000055Qf7IAE	c/33hGGFxV5krD1Q	Home Landing	false	Home Landing	2019-07-15T10:38:17.090Z
005D00000055Qf7IAE	c/33hGGFxV5krD1Q	Report Viewed	true	Home Landing > Report Viewed	2019-07-15T10:47:29.116Z
005D00000055Qf7IAE	r5jkNROlvMA2ROfv	Contact Viewed	true	Contact Viewed	2019-07-18T13:24:21.943Z
00557000007qfUFAAY	DLLuUrzwtuAcBj6A	Home Landing	false	Home Landing	2019-07-14T15:19:12.523Z
00557000007qfUFAAY	DLLuUrzwtuAcBj6A	Account Viewed	true	Home Landing > Account Viewed	2019-07-14T15:27:34.445Z

3

EM + EA = Superpowers!

Example: What are the common paths that your users go through?



Let's build the dataflow!

LightningPageViewWIthUsers
edgemart

computeExpression

filter

computeRelative

SfdcR
egister

Add 4 new fields in a new Dataset

PageUrlNoParam

```
case
when index_of(PAGE_URL, "?") > 0 then substr(PAGE_URL, 1, index_of(PAGE_URL, "?")-1)
when index_of(PAGE_URL, "#") > 0 then substr(PAGE_URL, 1, index_of(PAGE_URL, "#")-1)
else PAGE_URL
end
```

PageCtxCorrected

```
case PAGE_CONTEXT
when "home:landing" then "Home Landing"
when "e.force:createRecord" then PAGE_ENTITY_TYPE+"Created"
when "home:recentRecordListView" then "Recent View"
when "force:relatedList" then PAGE_ENTITY_TYPE+" Related List"
when "one:chatter" then "Chatter"
...
else
  case
    when starts_with(PAGE_URL, "/lightning/o/") && ends_with('PageUrlNoParam', 'new') then
      PAGE_ENTITY_TYPE+"Created"
    when starts_with(PAGE_URL, "/lightning/r/") && ends_with('PageUrlNoParam', '/view') then
      PAGE_ENTITY_TYPE+"Viewed"
    when starts_with(PAGE_URL, "/lightning/r/") && ends_with('PageUrlNoParam', "/delete") then
      PAGE_ENTITY_TYPE+"Deleted"
    when starts_with(PAGE_URL, "/lightning/r/") && ends_with('PageUrlNoParam', "/edit") then
      PAGE_ENTITY_TYPE+"Updated"
    ...
  else "Unknown"
end
```

IsLast

```
case
when next(TIMESTAMP) is null then
  "true"
else
  "false"
end
```

PagePath

```
case
when previous(TIMESTAMP) is null then
  current('PageCtxCorrected')
when previous('PageCtxCorrected') == current('PageCtxCorrected')
  then
    previous('PagePath')
else
  previous('PagePath') + " > " + current('PageCtxCorrected')
end
```

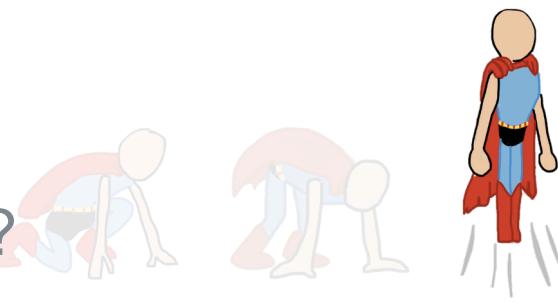
XRayVision

```
LOGIN_KEY
PAGE_CONTEXT
PAGE_ENTITY_TYPE
PAGE_URL
TIMESTAMP_DERIVED
USER_ID_DERIVED
User.Name
PageCtxCorrected
IsLast
PagePath
```

3

EM + EA = Superpowers!

Example: What are the common paths that your users go through?

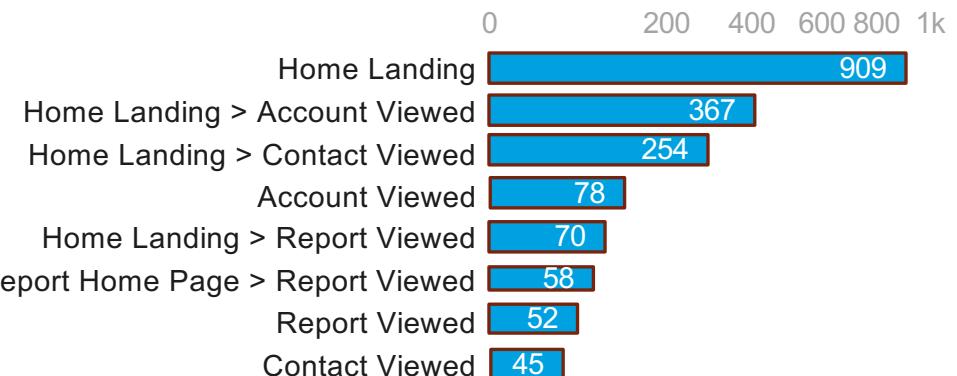


Then we create a new dashboard!

XRayVision

- LOGIN_KEY
- PAGE_CONTEXT
- PAGE_ENTITY_TYPE
- PAGE_URL
- TIMESTAMP_DERIVED
- USER_ID_DERIVED
- User.Name
- PageCtxCorrected
- IsLast
- PagePath

Filter: IsLast == « true », Grouped by PagePath



Grouped by User.Name and LOGIN_KEY

User.Name	LOGIN_KEY	PageCtxCorrected	TIMESTAMP
Carol Danvers	AbcREU1	Home Landing	2019/07/15 10:38:17
		Report Viewed	2019/07/15 10:47:29
	YghIUO8	Contact Viewed	2019/07/18 13:24:21
Steve Rogers	gtFre468	Home Landing	2019/07/14 15:19:12
		Account Viewed	2019/07/14 15:27:34



Q & A



Thank You

Remember to tell us what you think in the event survey
www.frenchtouchdreamin.com/survey

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A

Appendix A: Trailhead is your friend

Learn about Shield Event Monitoring on Trailhead

<https://trailhead.salesforce.com/en/content/learn/trails/shield>

The screenshot shows the Trailhead website interface. At the top, there is a navigation bar with the Trailhead logo, a search bar containing "Search for Trails, Modules, Projects, and more...", and buttons for "Sign Up" and "Login". Below the navigation bar, a menu bar includes links for "Home", "Trails", "Modules", "Projects", "Trailmixes", "Credentials", and "Trailblazers". The main content area features a dark teal header with the word "Trail" and a small icon of a computer monitor with a shield and a magnifying glass. The title "Secure Your Apps with Salesforce Shield" is prominently displayed in large white text. Below the title, a subtitle reads "Learn how to establish governance and enforce compliance policies in your org with this powerful set of services." A duration of "3 hrs" is indicated. At the bottom of the card, there are buttons for "Admin", "Beginner", a heart icon, and a plus sign icon.



A

Appendix B: Official list of events

Get the full list of events and a full detail for each of them

https://developer.salesforce.com/docs/atlas.en-us.api.meta/api/sforce_api_objects_eventlogfile_supportedeventtypes.htm

The screenshot shows the Salesforce Developers website. At the top, there's a navigation bar with links for PRODUCTS, RESOURCES, COMMUNITY, BLOG, and TRAILHEAD. There's also a search bar, a login link, and a sign-up link. Below the navigation bar, the page title is "SOAP API Developer Guide". On the left, there's a sidebar with a "Content" section containing links to various developer guides like "Getting Started", "Reference", "Data Model", "Standard Objects", and many others. The main content area has a heading "EventLogFile Supported Event Types" and a paragraph about supported event types. It also contains a callout box with information about external assets and a list of supported event types.

EventLogFile Supported Event Types

The EventType field in the EventLogFile object supports these events. Some common fields, such as CPU_TIME and RUN_TIME, can have null or zero values depending on how the events are generated for a given feature.



The Insecure External Assets, Login, and Logout events are available in supported Salesforce editions at no additional cost. Contact Salesforce to purchase the remaining event types.

- [Apex Callout Event Type](#)
Apex Callout events contain details about callouts (external requests) during Apex code execution.
- [Apex Execution Event Type](#)
Apex Execution events contain details about Apex classes that are used.
- [Apex SOAP Event Type](#)
Apex SOAP events contain details about Web Services API calls.
- [Apex Trigger Event Type](#)
Apex Trigger events contain details about triggers that fire in an organization.
- [Apex Unexpected Exception Event Type](#)
The Apex Unexpected Exception event type captures information about unexpected exceptions in Apex code execution. This event type is available in the EventLogFile object in API version 45.0 and later.
- [API Event Type](#)
API events contain details about your organization's web services API activity.
- [Asynchronous Report Run Event Type](#)
Asynchronous Report Run events are created for reporting requests that are scheduled. This category includes

A

Appendix D: *PageCtxCorrected* SAQL full expression

Don't worry... Be happy!

```
case PAGE_CONTEXT
when "forceChatter:desktopChatter" then "Chatter"
when "one:chatter" then "Chatter"
when "forceChatter:feedElementFullView" then "Chatter"
when "desktopDashboards:dashboard" then "Dashboard"
when "runtime_sales_xclean:discoveryAccountsTabHome" then "Discovery "+PAGE_ENTITY_TYPE
when "reports:reportBuilder" then "Report Edited"
when "one:recordLoadError" then "Error Page"
when "one:unsupportedHome" then "Error Page"
when "one:unsupported" then "Error Page"
when "unknown" then "Error Page"
when "force:filterList" then "FilterList"
when "sfa:hierarchyFullView" then PAGE_ENTITY_TYPE+" Hierarchy Page"
when "forceSearch:search" then PAGE_ENTITY_TYPE+" Home Page"
when "forceContent:filesHomeDesktop" then PAGE_ENTITY_TYPE+" Home Page"
when "forceContent:fileList" then PAGE_ENTITY_TYPE+" Home Page"
when "notes:notesObjectHome" then PAGE_ENTITY_TYPE+" Home Page"
when "one:consoleObjectHome" then PAGE_ENTITY_TYPE+" Home Page"
when "calendar:home" then PAGE_ENTITY_TYPE+" Home Page"
when "sfa:sfdcEventList" then PAGE_ENTITY_TYPE+" Home Page"
when "force:objectHomeDesktop" then PAGE_ENTITY_TYPE+" Home Page"
when "runtime_approval_process:navigateToPendingApprovalList" then PAGE_ENTITY_TYPE+" Home Page"
when "runtime_sales_activities:taskBorderLayout" then PAGE_ENTITY_TYPE+" Home Page"
when "sfa:analyticsHome" then PAGE_ENTITY_TYPE+" Home Page"
when "home:landing" then "Home Landing"
when "e.force:createRecord" then PAGE_ENTITY_TYPE+" Created"
when "force:changeRecordType" then PAGE_ENTITY_TYPE+" Created"
when "home:recentsRecordListView" then "Recent View"
when "force:relatedList" then PAGE_ENTITY_TYPE+" Related List"
when "force:relatedListDesktop" then PAGE_ENTITY_TYPE+" Related List"
when "runtime_platform_testhistory:apexTestExecutionPage" then "Setup"
when "setup_platform_integration:datasourceSetup" then "Setup"
when "setup_platform_sfdo:somaSetupPage" then "Setup"
when "instrumentation:lightningUsage" then "Setup"
when "instrumentation:lightningUsageSetup" then "Setup"
```

```
when "setupnav:appManager" then "Setup"
when "objectManager:objectList" then "Setup"
when "onesetup:pageNotFound" then "Setup"
when "objectManager:lookupRedirect" then "Setup"
when "objectManager:objectDetailPage" then "Setup"
when "onesetup:baseHomePage" then "Setup"
when "onesetup:setupAlohaPage" then "Setup"
when "e.setup:navigateToSetup" then "Setup"
when "e.forceChatter:downloadFile" then PAGE_ENTITY_TYPE+" Viewed"
when "force:recordLandingPage" then PAGE_ENTITY_TYPE+" Viewed"
when "force:recordHome" then PAGE_ENTITY_TYPE+" Viewed"
when "one:recordHomeFlexipage" then PAGE_ENTITY_TYPE+" Viewed"
when "forceKnowledge:articleRedirect" then PAGE_ENTITY_TYPE+" Viewed"
when "reports:reportBase" then PAGE_ENTITY_TYPE+" Viewed"
when "wave:waveHomeTab" then "Wave"
else
case
when starts_with('PAGE_CONTEXT', "c:") then substr('PAGE_CONTEXT', 2)+" Component"
when starts_with('PAGE_URL', "/lightning/settings/") then "Settings"
when starts_with('PAGE_URL', "/lightning/setup/") then "Setup"
when starts_with('PAGE_URL', "/lightning/cmp/")
    substr('PAGE_URL_NOPARAM', index_of('PAGE_URL_NOPARAM', "/", 1, 3)+1)+" Component"
when starts_with('PAGE_URL', "/lightning/n/")
    substr('PAGE_URL_NOPARAM', index_of('PAGE_URL_NOPARAM', "/", 1, 3)+1)+" Page"
when starts_with('PAGE_URL', "/lightning/o/") && ends_with('PAGE_URL_NOPARAM', "/new") then
    PAGE_ENTITY_TYPE+" Created"
when starts_with('PAGE_URL', "/lightning/r/") && ends_with('PAGE_URL_NOPARAM', "/view") then
    PAGE_ENTITY_TYPE+" Viewed"
when starts_with('PAGE_URL', "/lightning/r/") && ends_with('PAGE_URL_NOPARAM', "/delete") then
    PAGE_ENTITY_TYPE+" Deleted"
when starts_with('PAGE_URL', "/lightning/r/") && ends_with('PAGE_URL_NOPARAM', "/edit") then
    PAGE_ENTITY_TYPE+" Updated"
else "Unknown"
end
end
```