# ITSI Service Tree Automation

Hands-on Splunk ITSI Workshop



splunk>

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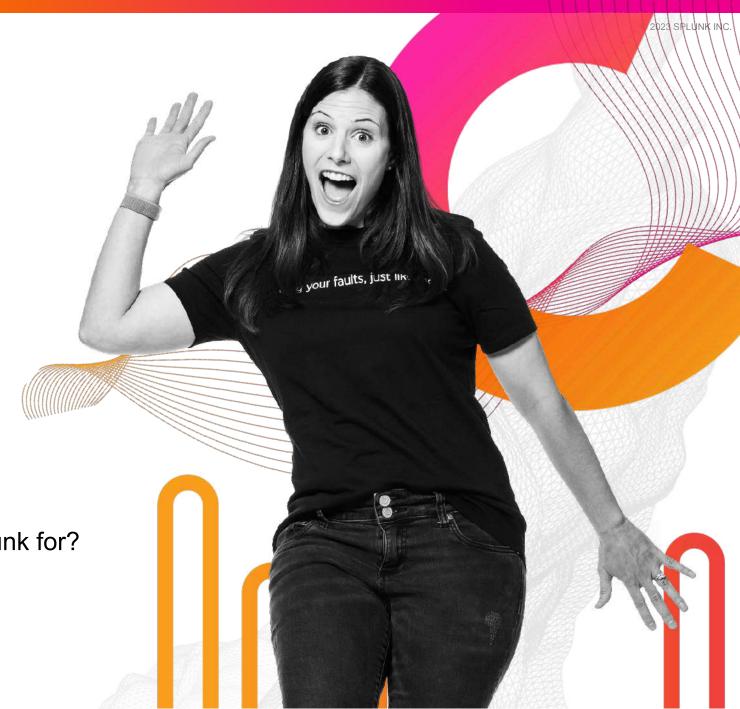
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# Please introduce yourself!

- Name
- Company/organisation
- Role
- Are you currently using Splunk?
- What are you interested in using Splunk for?





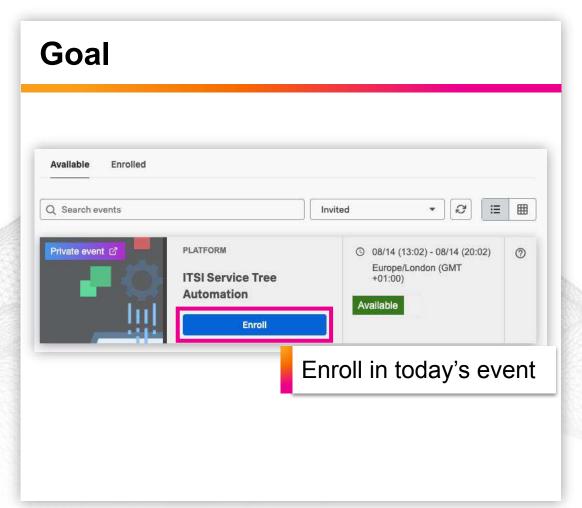
### Workshop Agenda

- Bulk import 500 entities
- Build a magic table
- Create 90 ITSI services at a time
- Check the result and discuss

#### **Enroll in Today's Workshop**

#### **Tasks**

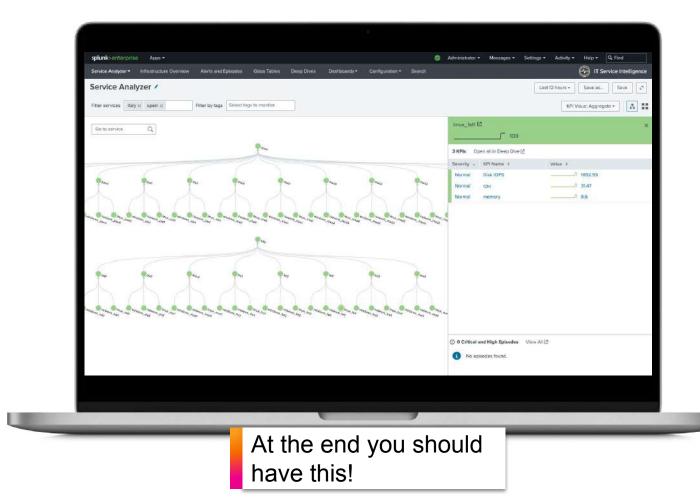
- Get a splunk.com account if you don't have one yet: https://splk.it/SignUp
- Enroll in the Splunk Show workshop event: https://show.splunk.com/event/
- 3. Download a copy of today's slide deck: https://splk.it/ITSI-Automation-Attendee



#### **Objective for Today**

Demonstrate advanced ITSI concepts to:

- ✓ Build a complex service tree from a single Splunk search
- Drastically reduce manual actions and limit build time
- ✓ Dynamically add and classify ITSI assets into a service tree



# Hands-On

Time to practice

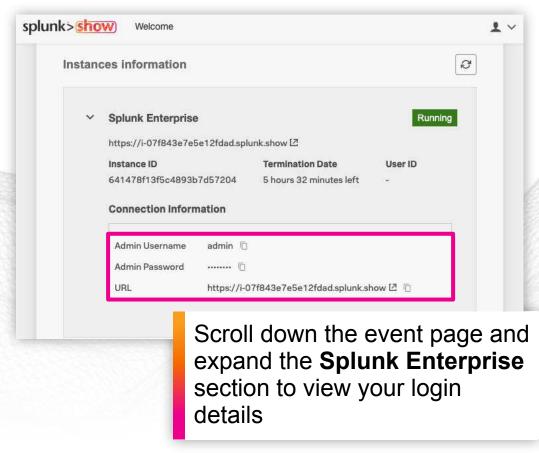
splunk>



### Login to Splunk

Locate your instance URL and credentials in the Splunk Show event

https://show.splunk.com



Log in to your Splunk instance



#### **Check Live Data**

First open IT Service Intelligence and check that there is some live data in the itsi\_automation\_workshop index

index="itsi\_automation\_workshop" splunk>enterprise Apps ▼ Ø Itsiworkshop ▼ Ø Messages ▼ Settings ▼ Activity ▼ Help ▼ Q, Find Service Analyzer ▼ Infrastructure Overview Alerts and Episodes Glass Tables Deep Dives Dashboards ▼ Configuration ▼ Search (1) IT Service Intelligence Search over the New Search Create Table View index="itsi\_automation\_workshoo" Last 15 minutes ▼ Last 15 minutes √ 3,000 events (6/5/23 3:51:00.000 PM to 6/5/23 4:06:00.000 PM) No Event Sampling ▼ Job ▼ II II → → + ± \* Smart Mo Events (3,000) Patterns Statistics Visualization 1 minute per column Format Timeline v 2 3 4 5 6 7 8 \_ Next > 20 Per Page \* 1 Time ← Hide Fields > 6/5/23 search\_name-VM\_data\_generator, search\_now=1685981100.000, info\_max\_time=1685981100.000, info\_search\_time=1685981100.265, cpu=37, memory=12, diskiops=1527, hostname="server-200" SELECTED FIELDS 4:05:00:000 PM host = ip-172-31-8-82.eu-central-1.compute.internal source = gly\_generator sourcetype = machine\_data a host 1 a source 1 > 6/5/23 search\_name=VM\_data\_generator, search\_now=1685981100.000, info\_max\_time=1685981100.000, info\_search\_time=1685981100.265, cou=54, memory=4, diskiops=1656, hostname="server-199" a sourcetype 1 4:05:00,000 PM host = ip-172-31-8-82.eu-central-1.compute.internal | source = gly\_generator | sourcetype = machine\_data INTERESTING FIELDS > 6/5/23 search\_name=VM\_data\_generator, search\_now=1685981100.008, info\_max\_time=1685981100.000, info\_search\_time=1685981106.265, cpu=17, memory=10, diskiops=1938, hostname="server-198" # cou 59 4:05:00,000 PM host = ip-172-31-8-82.eu-central-1.compute.internal | source = gly\_generator | sourcetype = machine\_data # date\_hour 2 > 6/5/23 # date mday 1 search name=VM data generator, search now=1685981108.000, info max time=1685981100.000, info search time=1685981106.265, cou=14, memory=16, diskioos=2129, hostname="server-197" # date\_minute\_15 host = ip-172-31-8-82.eu-central-1.compute.internal | source = gly\_generator | sourcetype = machine\_data a date\_month 1 > 6/5/23 search\_name=VM\_data\_generator, search\_now=1885981100.000, info\_search\_time=1885981100.000, info\_search\_time=1885981100.265, cpu=19, memory=9, diskiops=1899, hostname="server-196" 4:05:00:000 PM # date\_wday 1 host = ip-172-31-8-82.eu-central-1.compute.internal | source = gly\_generator | sourcetype = machine\_data # date year 1 > 6/5/23 search\_name=VM\_data\_generator, search\_now=1685981100.000, info\_max\_time=1685981100.000, info\_search\_time=1685981106.265, cpu=2, memory=8, diskiops=1676, hostname="server-195" # date zone 1 # disklops 100host = ip-172-31-8-82 eu-central-1.compute.internal | source = gly\_generator | sourcetype = machine\_data

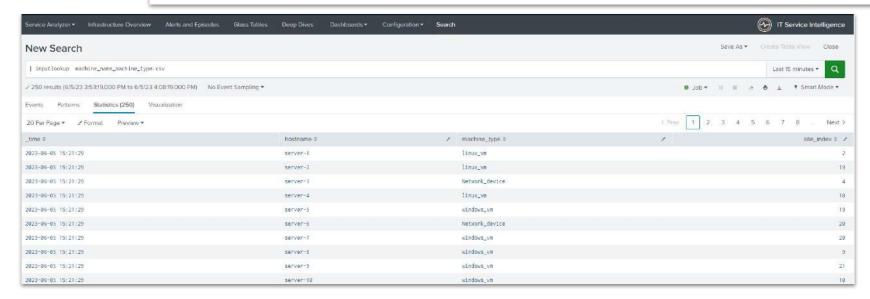
# **Check Lookup**

Check that 2 lookup files are present:

- machine\_name\_machine\_type.csv
- Geosite\_machine\_index.csv

Search 1: | inputlookup machine\_name\_machine\_type.csv

Search 2: | inputlookup Geosite\_machine\_index.csv



# The Story

Time to practice

splunk>

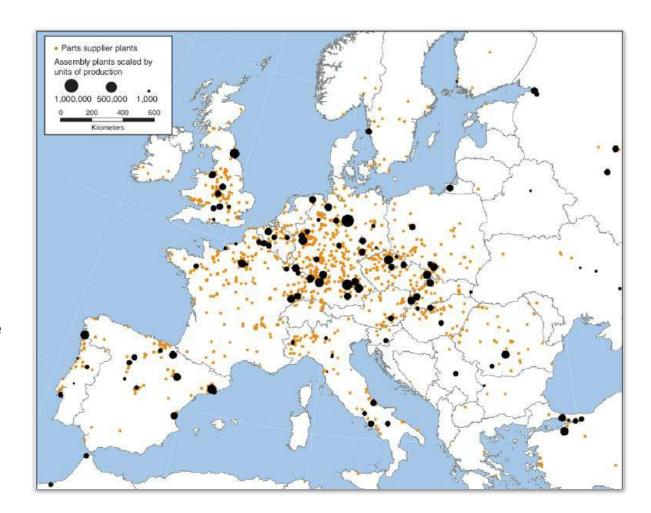


# The Splunk T-Shirt Company

The Splunk T-Shirt Company has a large number of selling points and production sites across EMEA but is not able to easily monitor all of the remote IT.

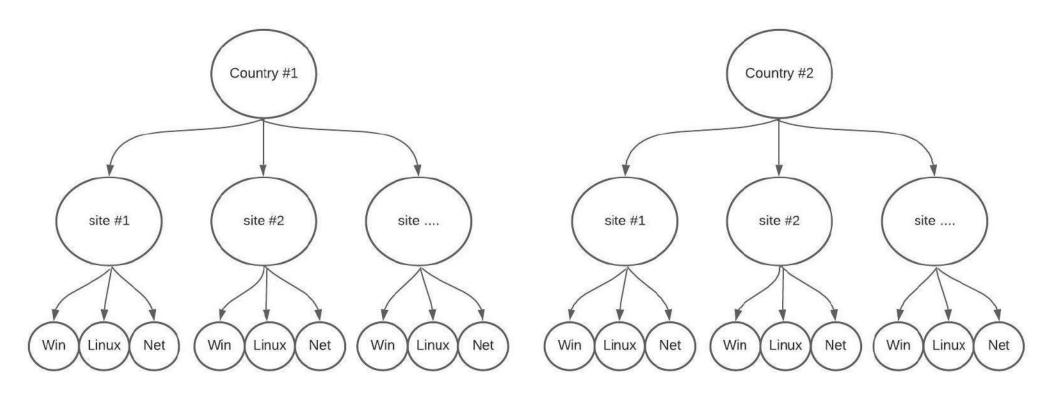
"Heckle the IT admin" has done a very good job when modeling a first Splunk T-Shirt Company production site in ITSI, but he needs "Jeckel - a more advanced ITSI user" to find a way to reduce efforts needed to create and maintain the 50 production sites. And you are "Jeckel":)

Heckle and Jeckel will focus first on Spanish and Italian production sites.

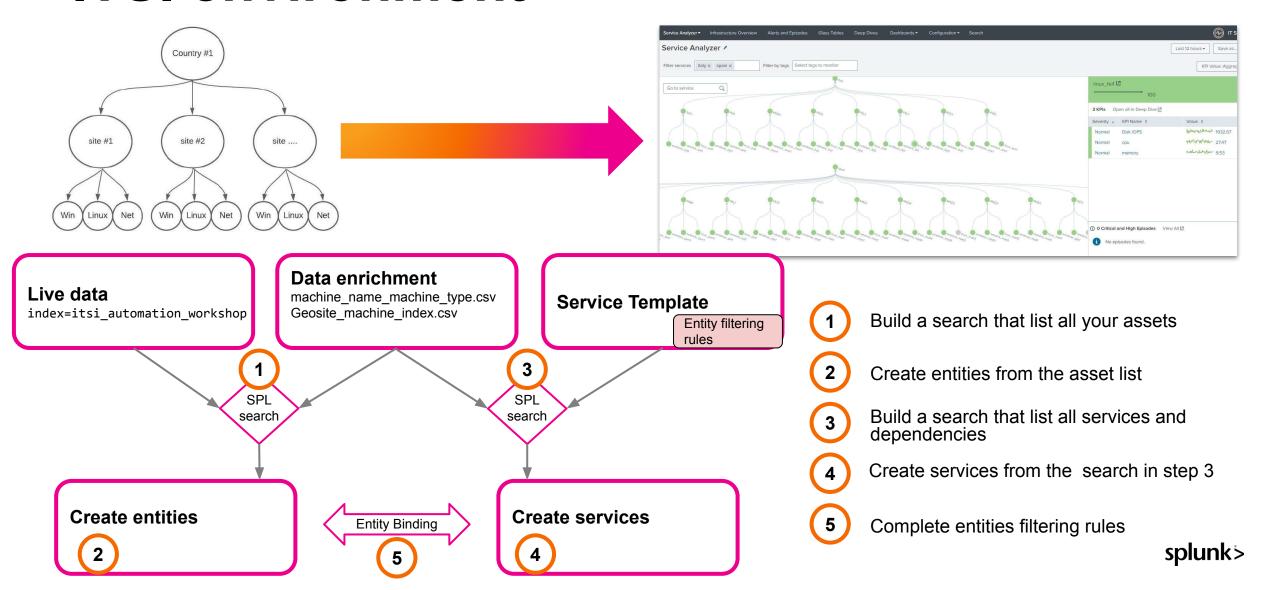


# Structure Sample / Service Decomposition Workshop

After a workshop Heckle and Jeckel decided with the CTO to focus on Linux, Windows and some standard network devices that are present in 99% of the remote sites (90 sites and 500 entities)



# Steps to go from paper to a working ITSI environment

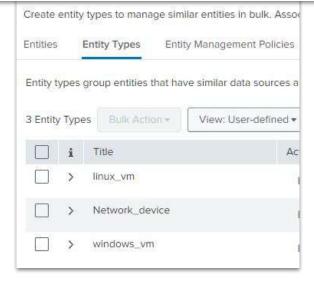


To add entities you need to enrich your live data with an extract of the Splunk T-Shirt Company CMDB that provides:

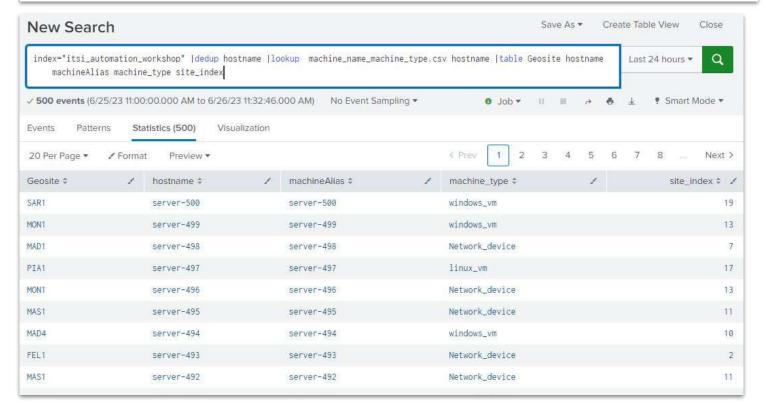
- a list of assets
- ID of the production site
- machine type\*

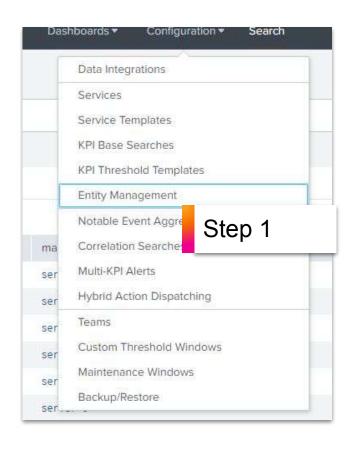
\* The "machine type" field will be used to map one of the 3 "entity type" that have been already created

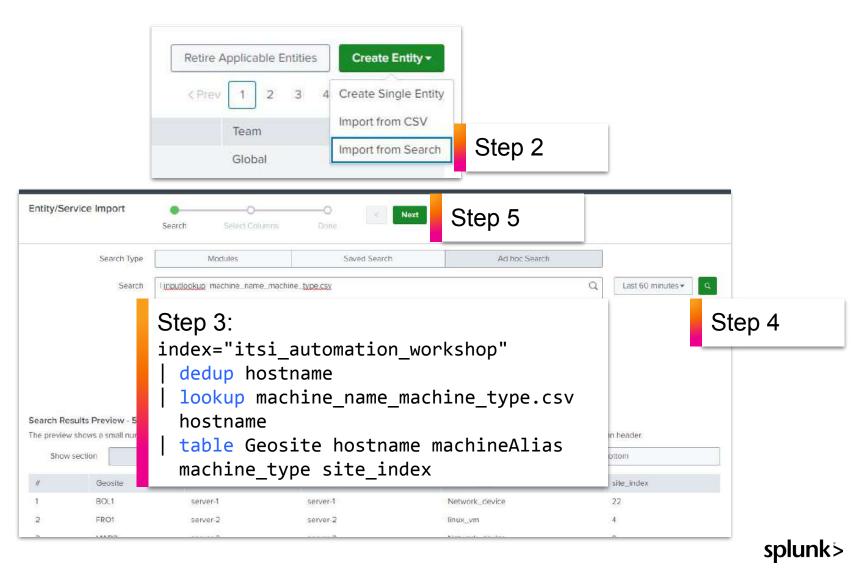
```
index="itsi_automation_workshop"
| dedup hostname
| lookup machine_name_machine_type.csv hostname
| table Geosite hostname machineAlias machine_type
site_index
```



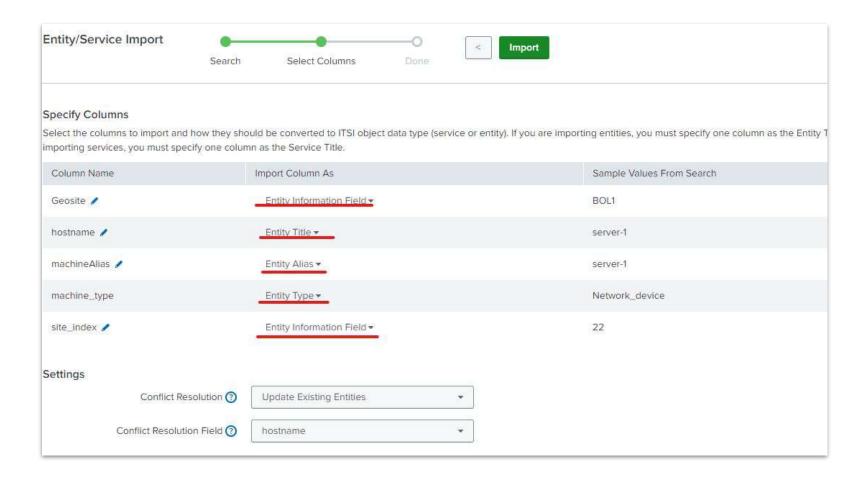
```
index="itsi_automation_workshop"
| dedup hostname
| lookup machine_name_machine_type.csv hostname
| table Geosite hostname machineAlias machine_type site_index
```

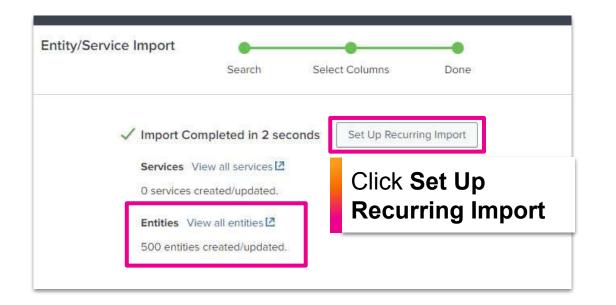


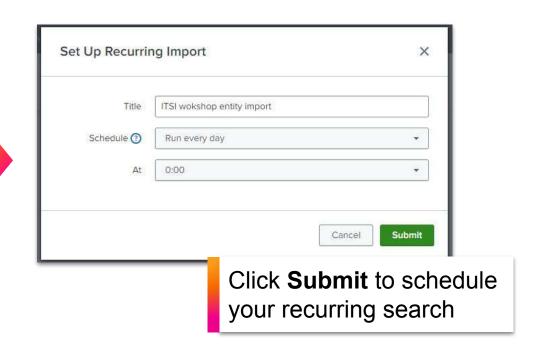




Complete the **Import Column As** field as below and click on **Import** 

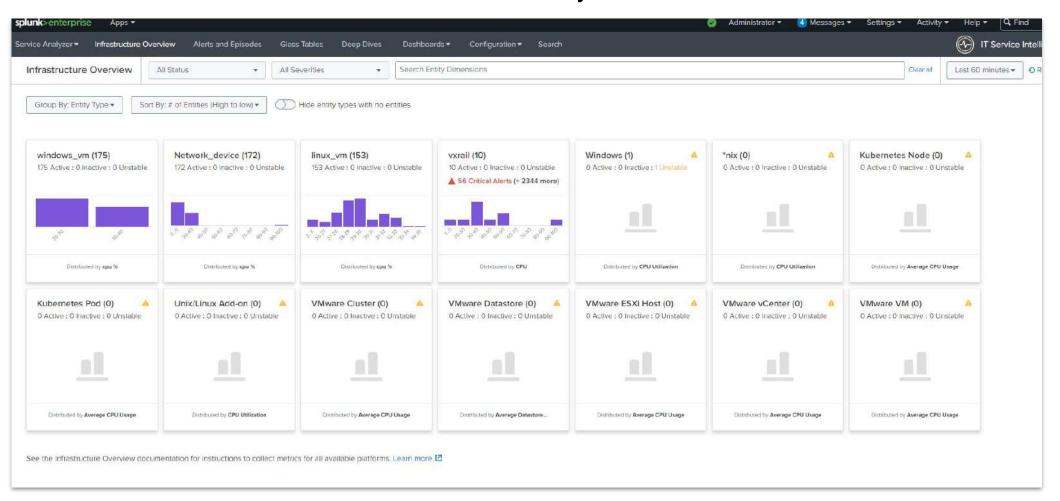






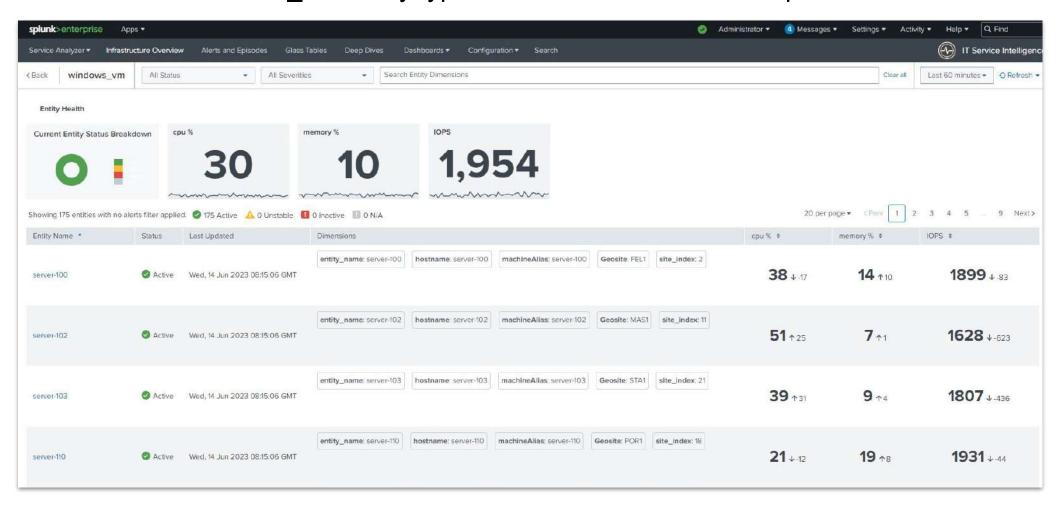
#### **Check Your Entities**

Click on Infrastructure Overview and look for your new entities!



#### **Check Your Entities**

Drill into the windows\_vm entity type to view the detail of the imported entities



# **Step 2: Automate Your Service Tree**

What ITSI expects when creating services

In order to automate a service tree in ITSI we need to create a Magic Table from SPL searches that fit with ITSI's expected fields:

Service name	service dependency	service template	service tag 1	service tag2	service tag3

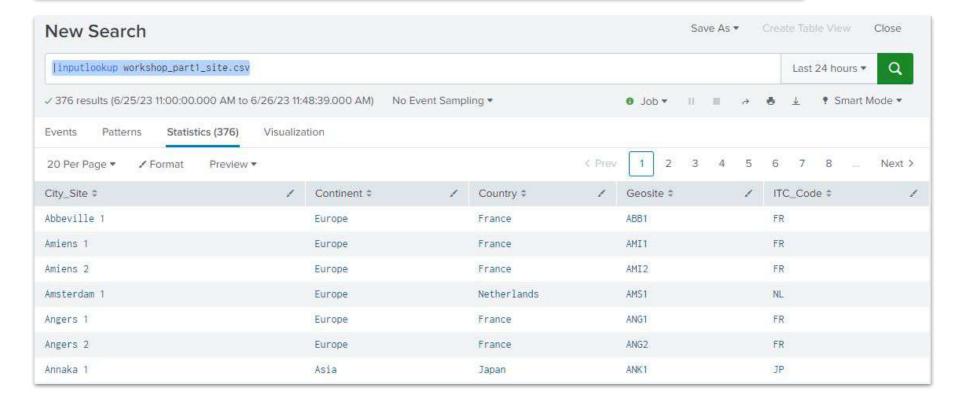
Seems to be too easy??

# **Step 2: Automate Your Service Tree**

What ITSI expects when creating services

To get info about a production site we use a CMDB export with the following fields:

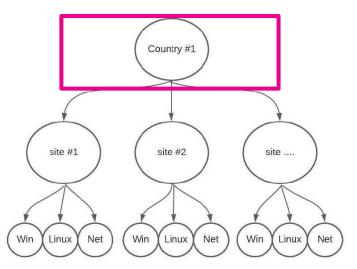
inputlookup workshop\_part1\_site.csv

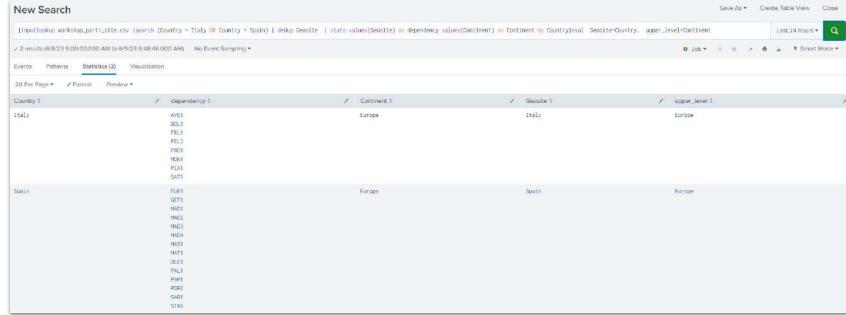




Service creation: Country

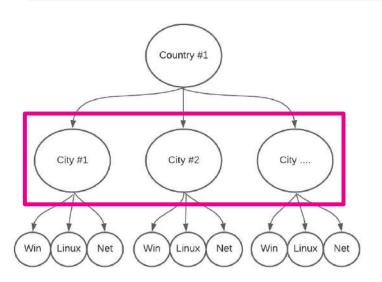
```
inputlookup workshop_part1_site.csv
search (Country=Italy OR Country=Spain)
dedup Geosite
stats values(Geosite) as dependency values(Continent) as Continent by Country
eval Geosite=Country, upper_level=Continent
```

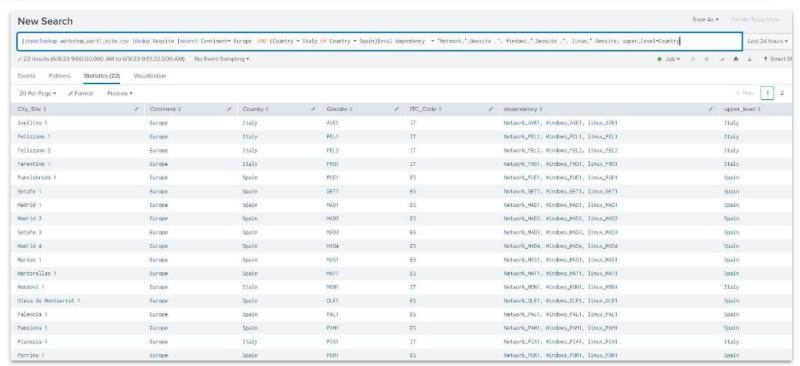




Service creation: City

```
| inputlookup workshop_part1_site.csv
| dedup Geosite
| search Continent=Europe AND (Country=Italy OR Country=Spain)
| eval dependency="Network_".Geosite .", Windows_".Geosite .", linux_".Geosite, upper_level=Country
```

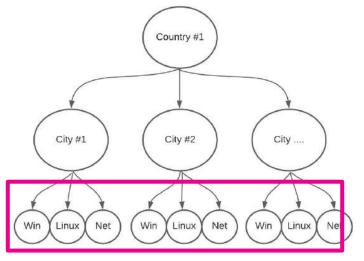






Service creation: Technical service

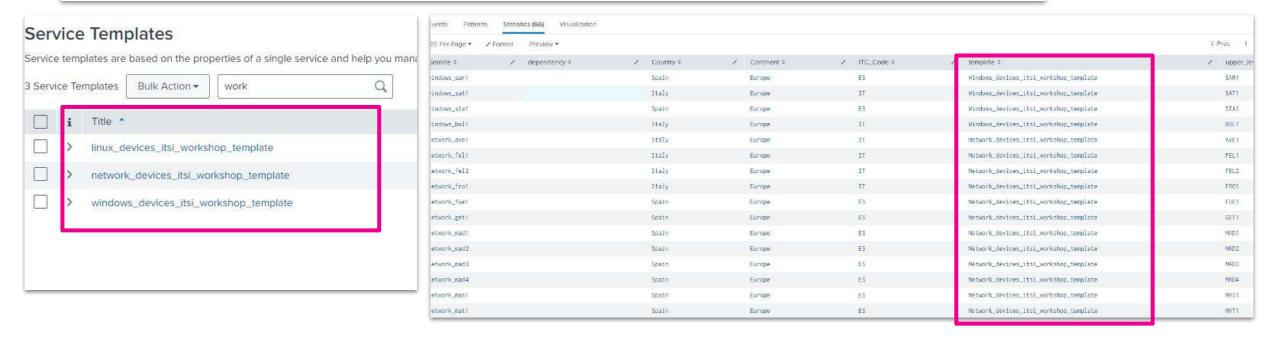
```
inputlookup workshop_part1_site.csv
search (Country=Italy OR Country=Spain)
eval upper_level=Geosite, Geosite="linux_".Geosite
appendpipe [search | inputlookup workshop_part1_site.csv
search (Country=Italy OR Country=Spain) | eval upper_level=Geosite, Geosite="Windows_".Geosite]
appendpipe [search | inputlookup workshop_part1_site.csv
search (Country=Italy OR Country=Spain) | eval upper_level=Geosite, Geosite="Network_".Geosite]
```



20 Per Page ▼										
City_Site ‡	1	Continent :	1	Country :	1	Geosite #	1	ITC_Code :	1	upper_
Santa Perpetua 1		Europe		Spain		Windows_STA1		ES		STA1
Bologna 1		Europe		Italy		Windows_BOL1		11		BOL1
Avellino 1		Europe		Italy		Network_AVE1		17		AVET
Felizzano 1		Europe		Italy		Network_FEL1		11		FEL1
Felizzano 2		Europe		Italy		Network_FEL2		IT		FEL2
Ferentino 1		Europe		Italy		Network_FR01		IT		FR01
Fuenlabrada 1		Europe		Spain		Network_FUE1		ES		FUE1
Getafe 1		Europe		Spain		Network_GET1		ES		GET1
Madrid 1		Europe		Spain		Network_MAD1		ES		MAD1
Madrid 2		Europe		Spain		Network_MAD2		ES		MAD2

Service creation: Map your Template

```
| eval template=case(like(Geosite,"%linux%"), "linux_devices_itsi_workshop_template",
    like(Geosite,"%Windows%"),"Windows_devices_itsi_workshop_template",
    like(Geosite,"%Network%"),"Network_devices_itsi_workshop_template")
| eval Geosite=lower(Geosite)
| table Geosite dependency Country Continent ITC_Code template upper_level
```



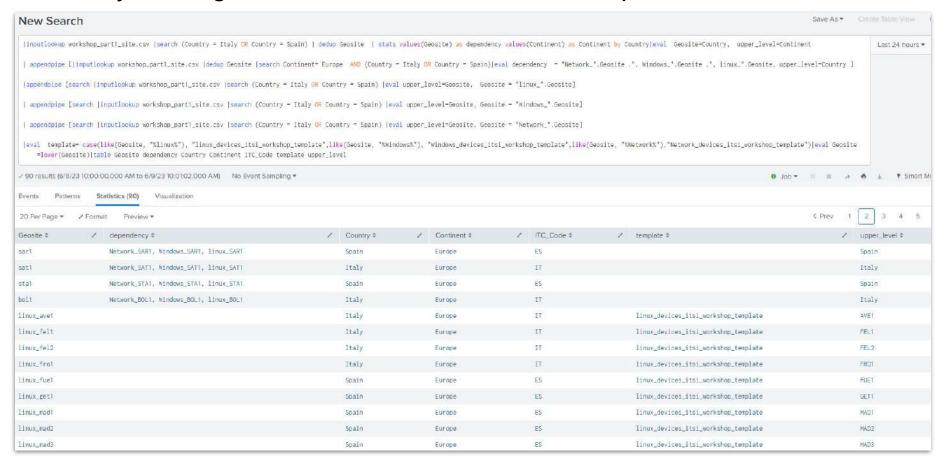
Merge your searches

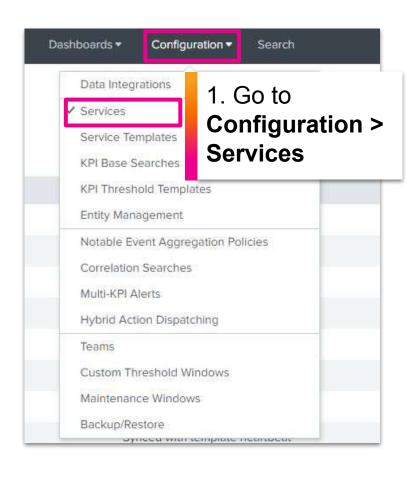
Merge your searches with appendpipe command

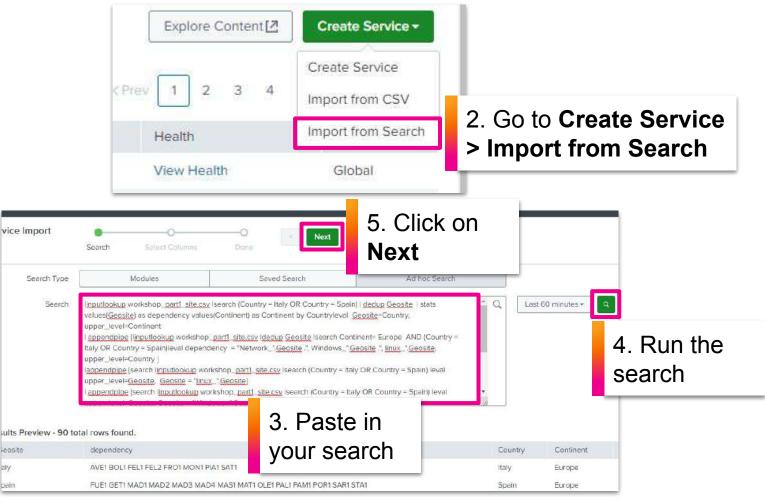
```
inputlookup workshop part1 site.csv | search (Country=Italy OR Country=Spain) | dedup Geosite
 stats values(Geosite) as dependency values(Continent) as Continent by Country
 eval Geosite=Country, upper_level=Continent
 appendpipe [| inputlookup workshop_part1_site.csv
    dedup Geosite | search Continent=Europe AND (Country=Italy OR Country=Spain)
    eval dependency="Network_".Geosite .", Windows_".Geosite .", linux_".Geosite, upper_level=Country ]
 appendpipe [search | inputlookup workshop_part1_site.csv
    search (Country=Italy OR Country=Spain) | eval upper_level=Geosite, Geosite="linux_".Geosite]
| appendpipe [search | inputlookup workshop_part1_site.csv
    search (Country=Italy OR Country=Spain) | eval upper level=Geosite, Geosite="Windows ".Geosite]
| appendpipe [search | inputlookup workshop part1 site.csv
    search (Country=Italy OR Country=Spain) | eval upper_level=Geosite, Geosite="Network_".Geosite]
    eval template=case(like(Geosite, "%linux%"), "linux devices itsi workshop template",
    like(Geosite, "%Windows"), "Windows_devices_itsi_workshop_template",like(Geosite, "%Network%"),
    "Network devices itsi workshop template")
    eval Geosite=lower(Geosite)
    table Geosite dependency Country Continent ITC Code template upper level
```

Merge your searches

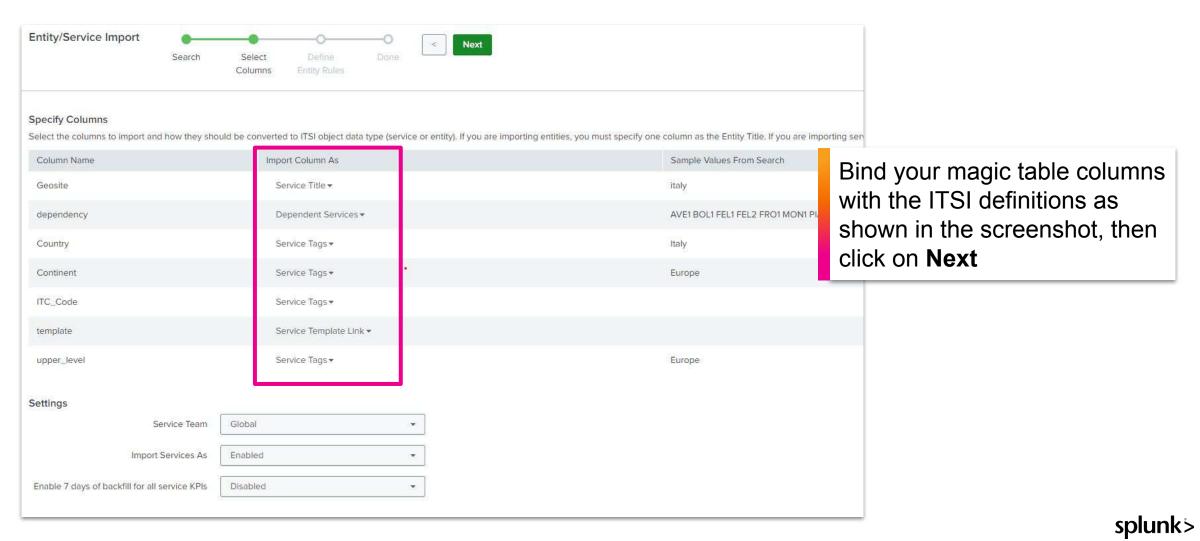
Here is your magic table with the three levels of dependencies!



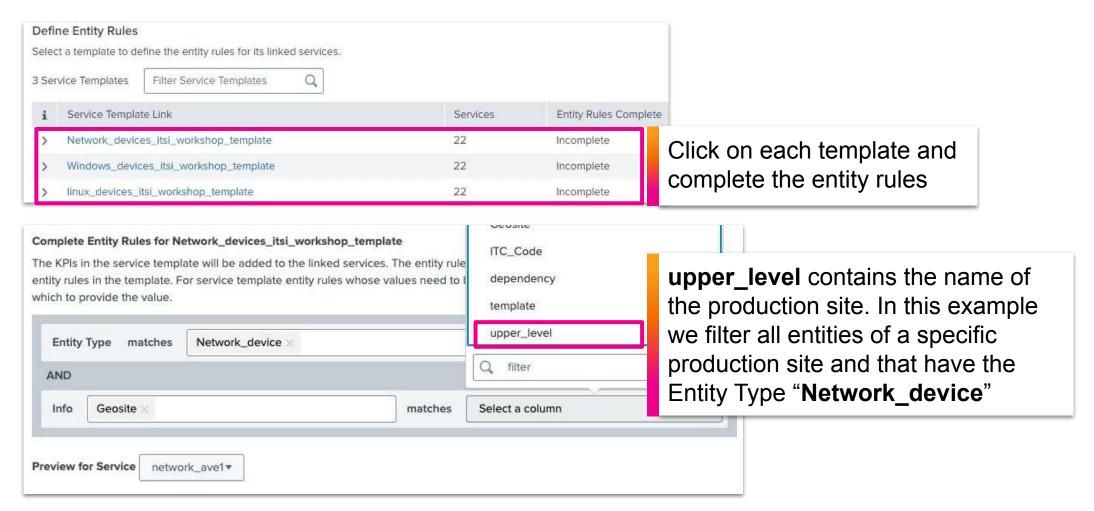




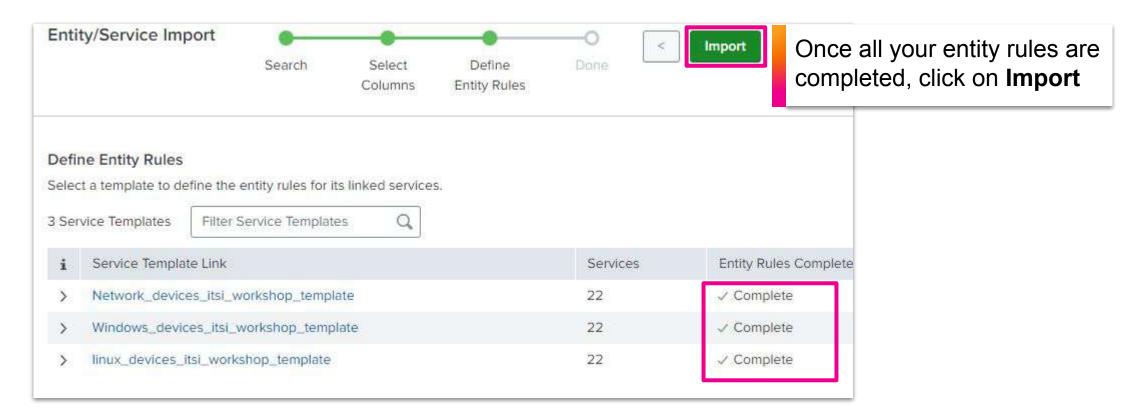
Service field mapping



Specify entity filtering rules

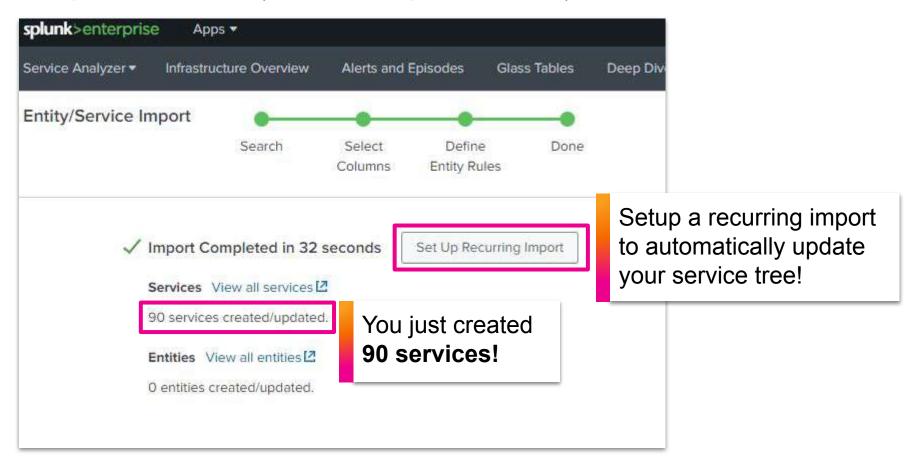


Specify entity filtering rules

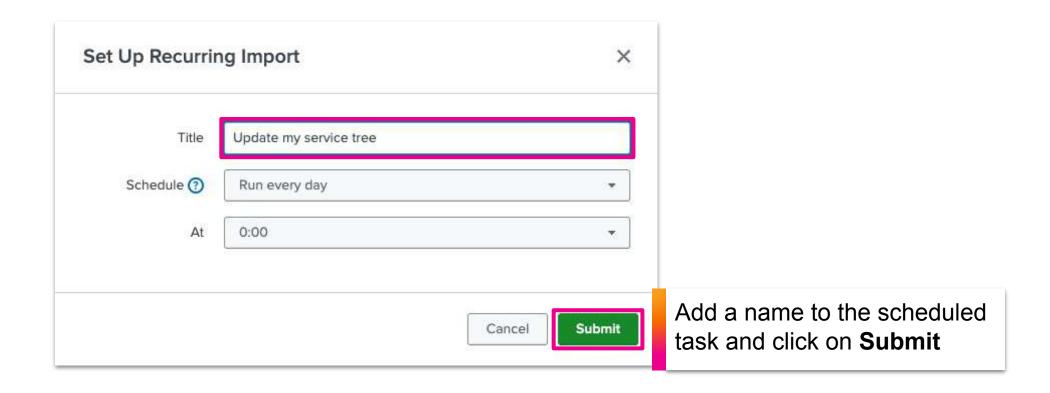


Specify entity filtering rules

Give your import time to run (it can take up to 1 minute)

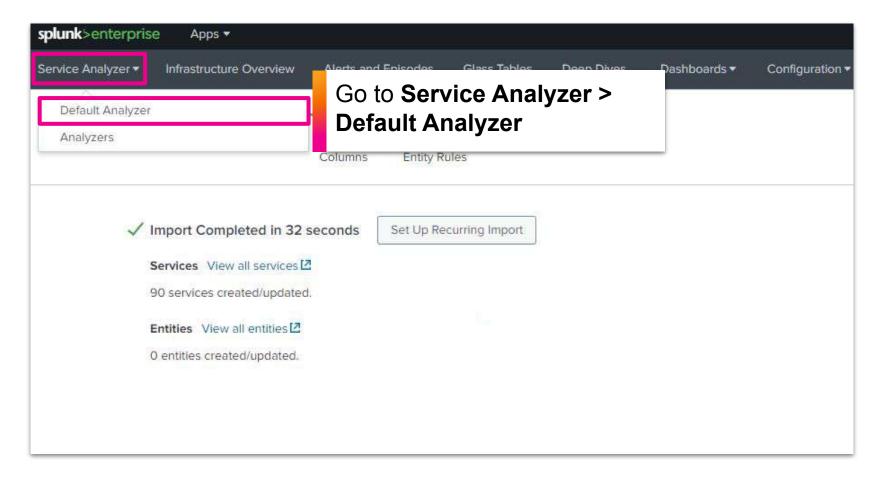


Specify entity filtering rules

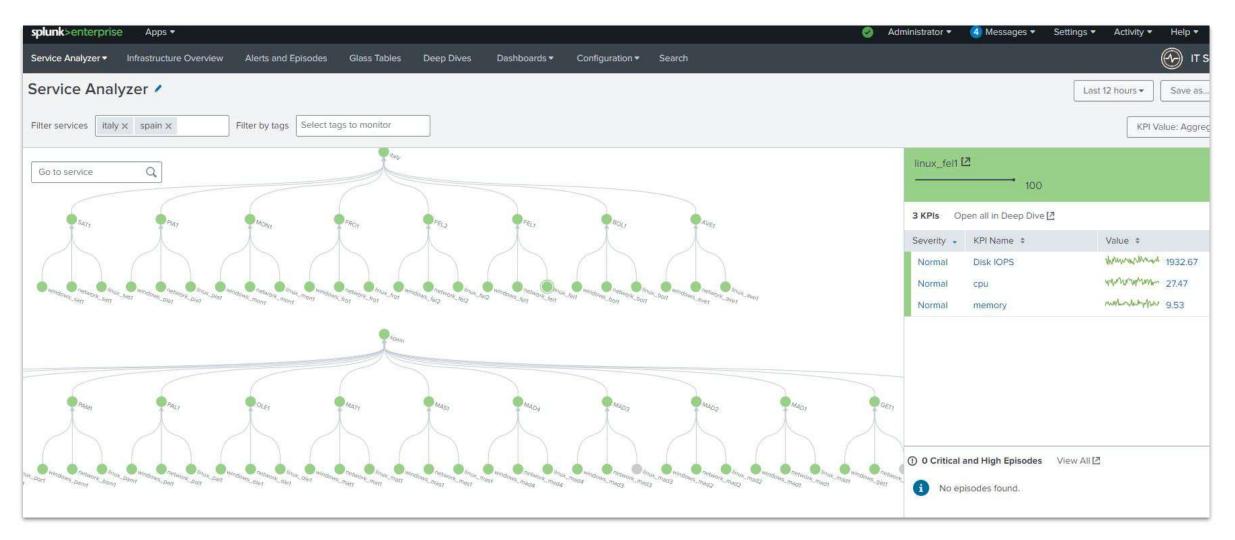


#### You're All Done!

Now time to check the Service Analyzer



#### **Great Job! Now Let's Discuss...**



# Thank You!

