IPInfo App for Splunk

App Version: 6.0.1

Author: Neel Shah - Greenace Consultants

Description: Installation and Configuration Document for IPInfo App for Splunk

Latest Update Date: 30th July, 2022

Version Summary

Version	Change History
1.0.0	Initial Version
1.0.2	Added Screenshots and Web Installation Steps
1.0.3	Replace old dashboard screen with new
1.0.7	Bug Fixes, Color Issues
3.0.0	Support to Splunk 8.x and Python 3.x
	Internal Updates
3.4.9	New scripted lookup New ipinfobatch command
3.4.11	Bug Fixes and Compliance to Splunk App Inspect
3.5.3	Added Support for New Lookup Commands. - privacyinfolookup - domaininfolookup - rangesinfolookup
3.5.4	Bugfixes : Issues with ipinfolookup command
4.0.0	IPInfo not supported on Splunk 6.x and 7.x
4.0.9	Support for Proxy Settings
5.0.2	Support for Splunk Search Head Cluster
5.1.1	Merging ipinfolookup capability with original ipinfo command privacyinfolookup to now be privacyinfo domaininfolookup to now be domaininfo rangesinfolookup to now be rangesinfo
5.1.2	Updating \`ipinfo\` command to support ipinfo bulk api
5.2.8	Feature to Add custom rootCA certificate. Feature to Disable the SSL verification. Couple of other Bug fixes.
5.2.10	Updating Python Library to 1.6.15 Bug Fixes with Batch Command
5.3.1	Adding WorkFlow Action for IPinfo
5.4.0	Support batching in privacy command
5.4.1	Cleaning Up of Old Splunk Code and Minor Bug Fixes
5.4.2	Introducing lat/lon along with loc, for better support with maps
5.4.3	Adding prefix=true support with ipinfo command
5.5.0	Multi IP support with ipinfo command (eg |ipinfo src_ip dest_ip)
5.5.1	Adding a privacy=true flag so that the results are returned as part of the ipinfo command and other Minor Bug Fixes

5.6.1	Adding a privacy=true flag so that the results are returned as part of the ipinfo command Support for multiple fields in one go , for example | ipinfo prefix=true src_ip, dest_ip
5.6.2	Minor BugFixes with commands
5.6.3	Minor BugFixes with setup page
5.7.3	Support for Authenticated Proxy Splunk Cloud Compatibility Package
5.7.4	Bug Fixes with Authenticated Proxy Splunk Cloud Compatibility Package
6.0.1	Updates to *ipinfobatch* command output New options available for *ipinfo* command Minor Bug fixes

Supported OS

OS
Windows 10
Windows Server 2012
Windows Server 2016
Windows Server 2019
RHEL 7
RHEL 8
UBUNTU 14
UBUNTU 16
UBUNTU 18
UBUNTU 20

Supported Splunk

Splunk
Splunk 8.X
Splunk 9.X

IPInfo App for Splunk

IPInfo App for Splunk provides an Integration between IPInfo API and Splunk. This app adds *ipinfo* command to Splunk, which uses IPINFO API engine to lookup information for a given IP

Install the App

NOTE: There are multiple ways of deploying apps to Splunk environment, in this document we'll be referring installation via CLI (Command Line Interface)

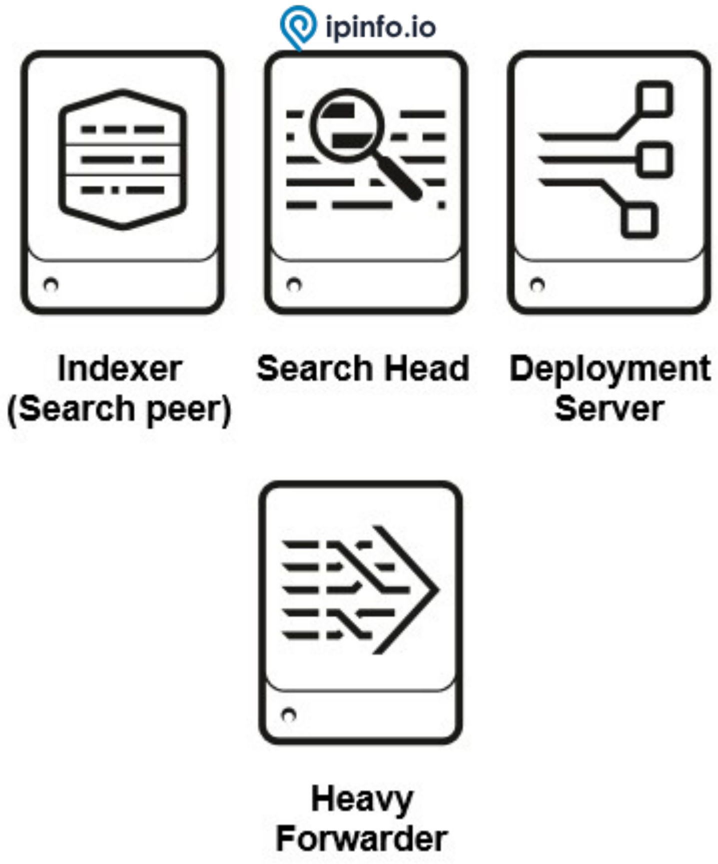
CASE1: SINGLE STAND ALONE MACHINE (CLI)

Single standalone Splunk Enterprise Installation on Windows/*NIX

1. **Unzip ipinfo_app.spl**
2. **Copy** the unzipped directory **ipinfo_app** to **$SPLUNK_HOME/etc/apps/**
3. **Open CLI** and restart Splunk using **./splunk restart**

CASE2: DISTRIBUTED ARCHITECTURE

Single Indexer Single Search head and Single forwarder (Heavy or Universal) and Deployment server



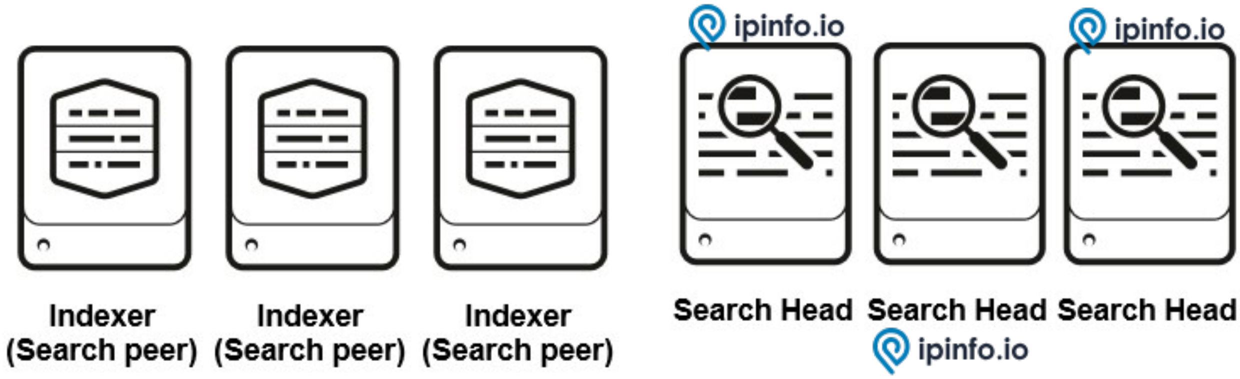
1. **Unzip ipinfo_app.spl**
2. **Copy** the unzipped directory **ipinfo_app** to deployment server in the following location **$SPLUNK_HOME/etc/deployment-apps/**
3. Add following to **serverclass.conf**

```
[serverClass:<SEARCHHEAD_SERVERCLASS>:app:< ipinfo_app > ]
stateOnClient=enabled
restartSplunkd=true
```

4. **Open CLI** deploy the apps using following command **./splunk reload deploy-server**

CASE3: DISTRIBUTED ARCHITECTURE

Multiple non-clustered Indexers, Multiple non-clustered SearchHeads, Forwarder(Heavy or Universal) and Deployment server



Deployment Server
Heavy Forwarder

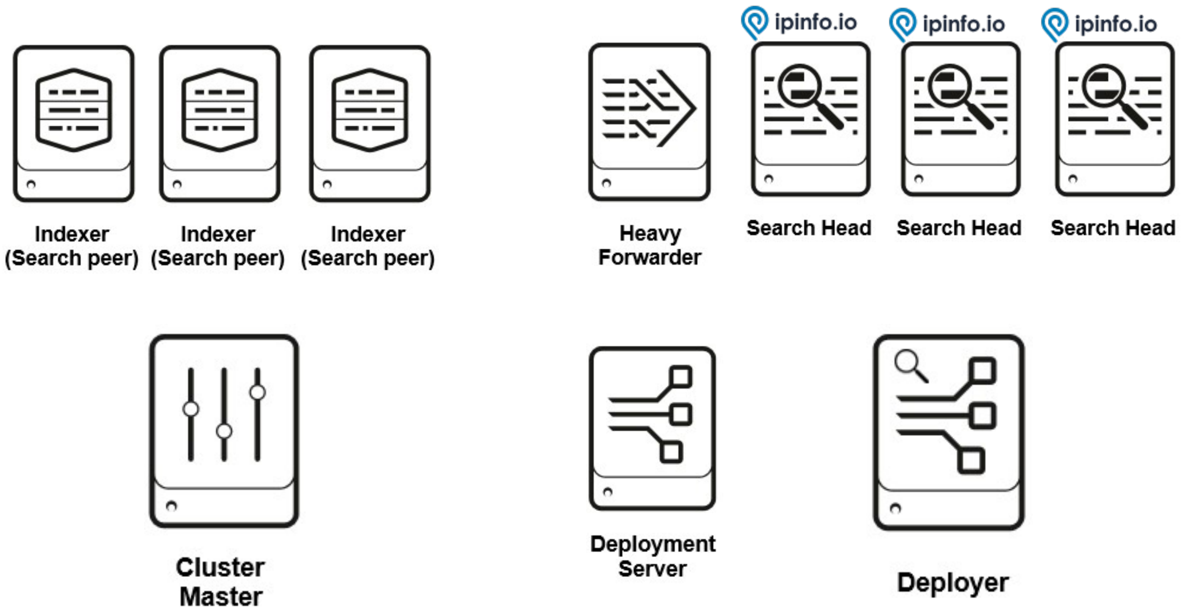
1. **Unzip ipinfo_app.spl**
2. **Copy** the unzipped directory **ipinfo_app** to deployment server in the following location **$SPLUNK_HOME/etc/deployment-apps/**
3. Add following to **serverclass.conf**

```
[serverClass:<SEARCHHEAD_SERVERCLASS>:app:< ipinfo_app >]
stateOnClient=enabled
restartSplunkd=true
```

4. **Open CLI** deploy the apps using following command **./splunk reload deploy-server**

CASE4: DISTRIBUTED ARCHITECTURE

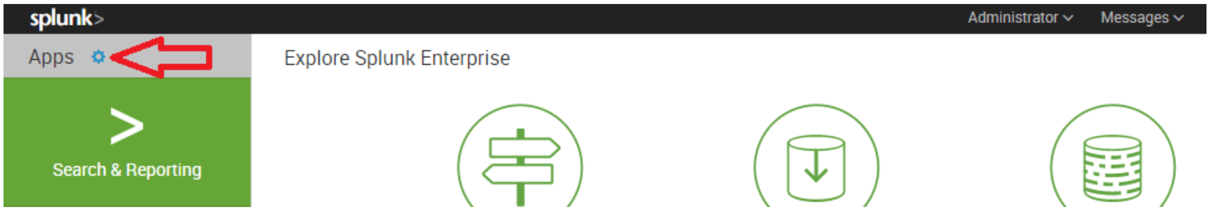
Single Site clustered Indexer, Clustered Search heads and Forwarder (Heavy or Universal).



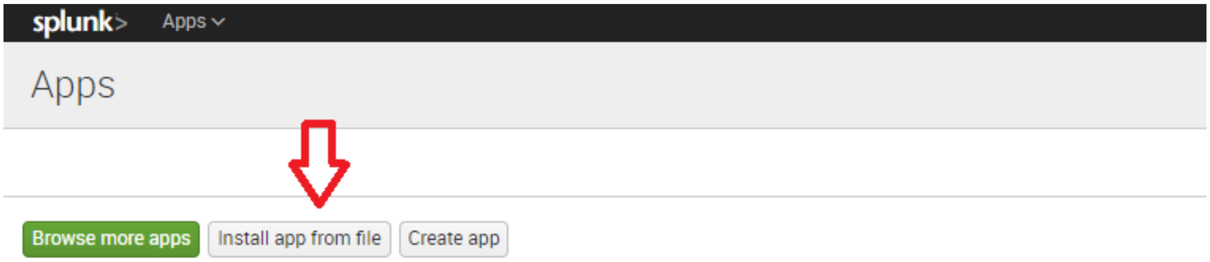
1. **Unzip ipinfo_app.spl**
2. **Copy ipinfo_app** to Deployer server in the following location **$SPLUNK_HOME/etc/shcluster/apps/**
3. **Open CLI** on Deployer and deploy the app on Search Head Cluster using following command **./splunk apply shcluster-bundle -target <URI>:<management_port> -auth <username>:<password>**

CASE5: STANDALONE INSTALLATION (WEB)

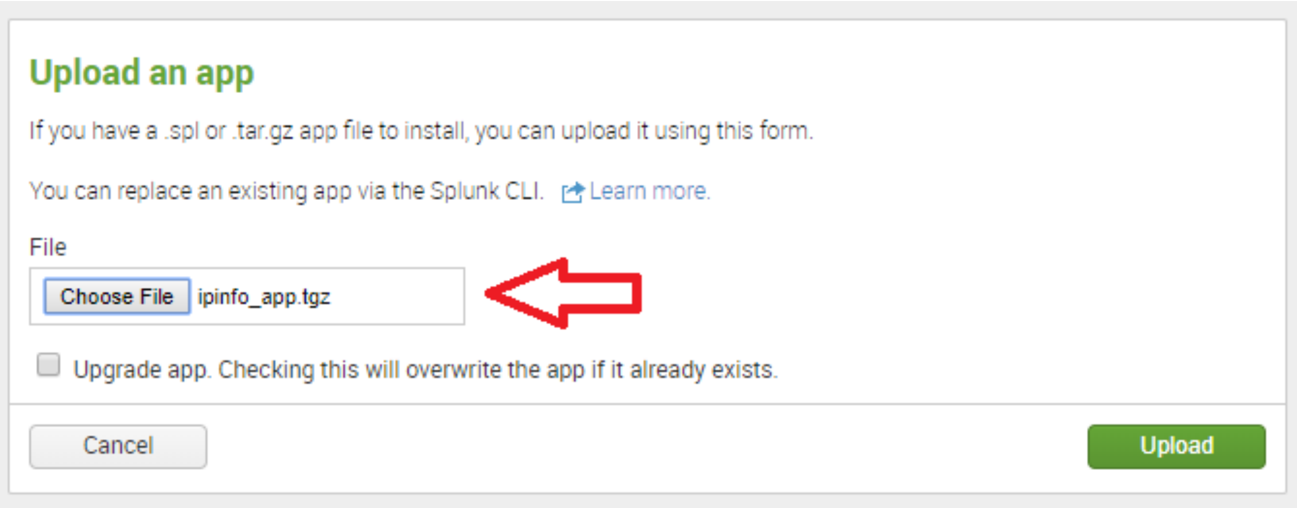
1. On the Splunk Home Page, Click on "Manage Apps"



2. On the Manage Apps page, Click on "Install app from file"



3. Select path for IPINFO Splunk app and Click "Upload"



Upload an app

If you have a .spl or .tar.gz app file to install, you can upload it using this form.

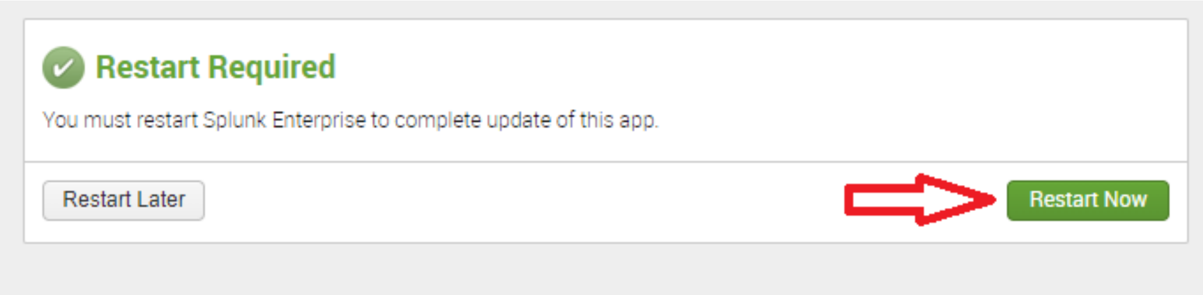
You can replace an existing app via the Splunk CLI. Learn more.

File

Choose File ipinfo_app.tgz

□ Upgrade app. Checking this will overwrite the app if it already exists.

4. Splunk will prompt you to restart the machine, please restart

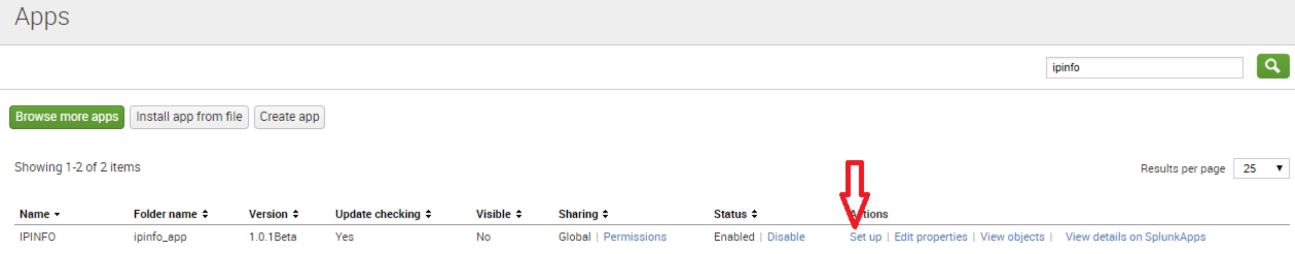


Restart Required

You must restart Splunk Enterprise to complete update of this app.

Configuration

1. After Installation and restart, login to the Splunk web and go to ‘Manage Apps’
2. It will list out all the installed application and their configuration option.
3. Look for ‘IPINFO and click on the ‘Set-Up’ link to configure the add on.
4.



Apps

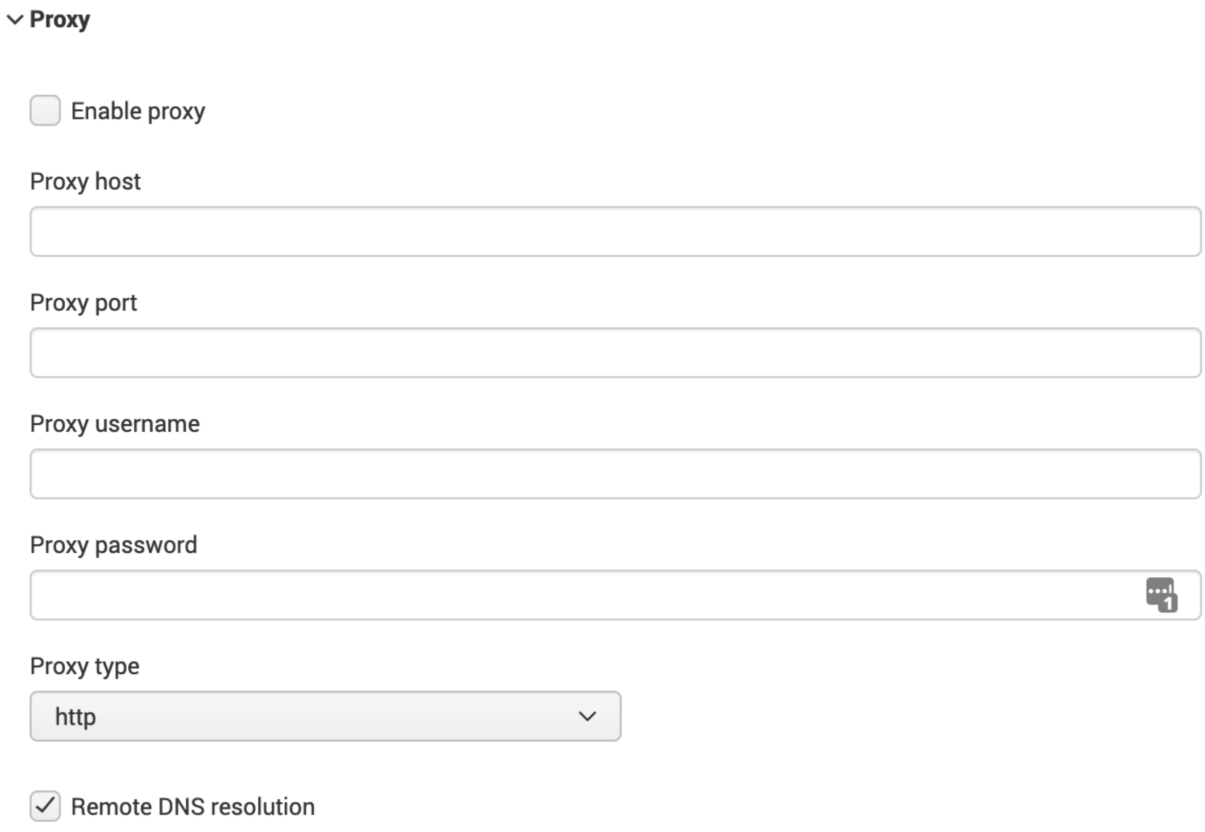
Showing 1-2 of 2 items

Results per page 25

Name	Folder name	Version	Update checking	Visible	Sharing	Status	Actions
IPINFO	ipinfo_app	1.0.1Beta	Yes	No	Global | Permissions	Enabled | Disable	Set up | Edit properties | View objects | View details on SplunkApps

API Configuration

Just Enter your personalized authorization token, there is also link to purchase the token



Proxy

□ Enable proxy

Proxy host

Proxy port

Proxy username

Proxy password

Proxy type: http

☑ Remote DNS resolution

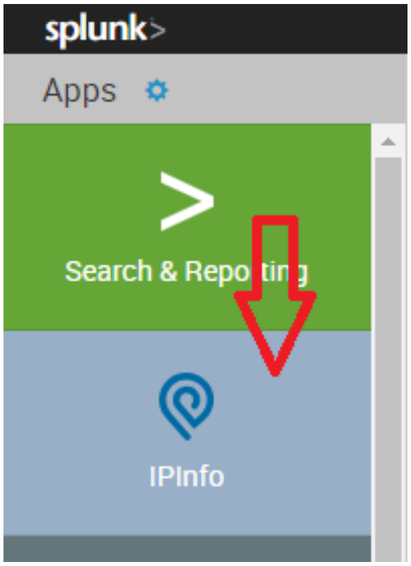
CLI Configuration

Just update ip_info_setup.conf in $SPLUNK_HOME/etc/apps/ip_info/local/

```
[ip_info_configuration]
api_url = https://ipinfo.io/
api_token = <your token here>
```

and restart Splunk

ACCESSING THE APP



TEST COMMAND

----------------IPInfo -------------------

```
| makeresults 1 | eval IP1=random()%192, IP2=random()%210, IP3=random()%230,
IP4=random()%192, IP='IP1'."."'IP2'."."'IP3'."."'IP4'| table _time IP | ipinfo IP
```

Availability of Fields

- **Basic Subscription** - ip, city, region, country, loc, org, postal, hostname
- **Standard Subscription** - ip, city, region, country, loc, postal, hostname asn_asn, asn_name, asn_domain, asn_route, asn_type
- **Pro Subscription** - ip, city, region, country, loc, postal, hostname asn_asn, asn_name, asn_domain, asn_route, asn_type, company_name, company_domain, company_type, carrier_name, carrier_mcc, carrier_mnc

-------------- IPInfo ---------------------

```
| makeresults count=2000
| eval IP1=random()%192, IP2=random()%210, IP3=random()%230, IP4=random()%192,
IP='IP1'."."'IP2'."."'IP3'."."'IP4'
| table _time IP
| ipinfo IP
```

-------------- IPInfo --------------------- (Multi)

```
| makeresults count=100
| eval IP1=random()%192, IP2=random()%210, IP3=random()%230, IP4=random()%192,
SRCIP='IP1'."."'IP2'."."'IP3'."."'IP4'
| eval IP1=random()%192, IP2=random()%210, IP3=random()%230, IP4=random()%192,
DESTIP='IP1'."."'IP2'."."'IP3'."."'IP4'
| table _time SRCIP DESTIP
| ipinfo SRCIP DESTIP
```

-------------- IPInfo --------------------- (prefix)

```
| makeresults count=100
| eval IP1=random()%192, IP2=random()%210, IP3=random()%230, IP4=random()%192,
SRCIP='IP1'."."'IP2'."."'IP3'."."'IP4'
| table _time SRCIP
| ipinfo prefix=true SRCIP
```

-------------- IPInfo --------------------- (privacy)

```
| makeresults count=2000
| eval IP1=random()%192, IP2=random()%210, IP3=random()%230, IP4=random()%192,
SRCIP='IP1'."."'IP2'."."'IP3'."."'IP4'
| eval IP1=random()%192, IP2=random()%210, IP3=random()%230, IP4=random()%192,
DESTIP='IP1'."."'IP2'."."'IP3'."."'IP4'
| table _time SRCIP DESTIP
| ipinfo prefix=true privacy=true SRCIP, DESTIP
```

Options available – asn | company | abuse | domains | carrier | prefix | privacy | alltypes

-------------- IPInfo Batch ------------

```
| ipinfobatch ip="197.94.71.228,197.94.71.227,197.94.71.221 , 197.94.71.226,197.94.71.225
,197.94.71.22"
```

-------------- privacyinfo ------------

```
| makeresults | eval IP="23.24.240.0" | privacyinfo IP
```

-------------- rangesinfo ------------

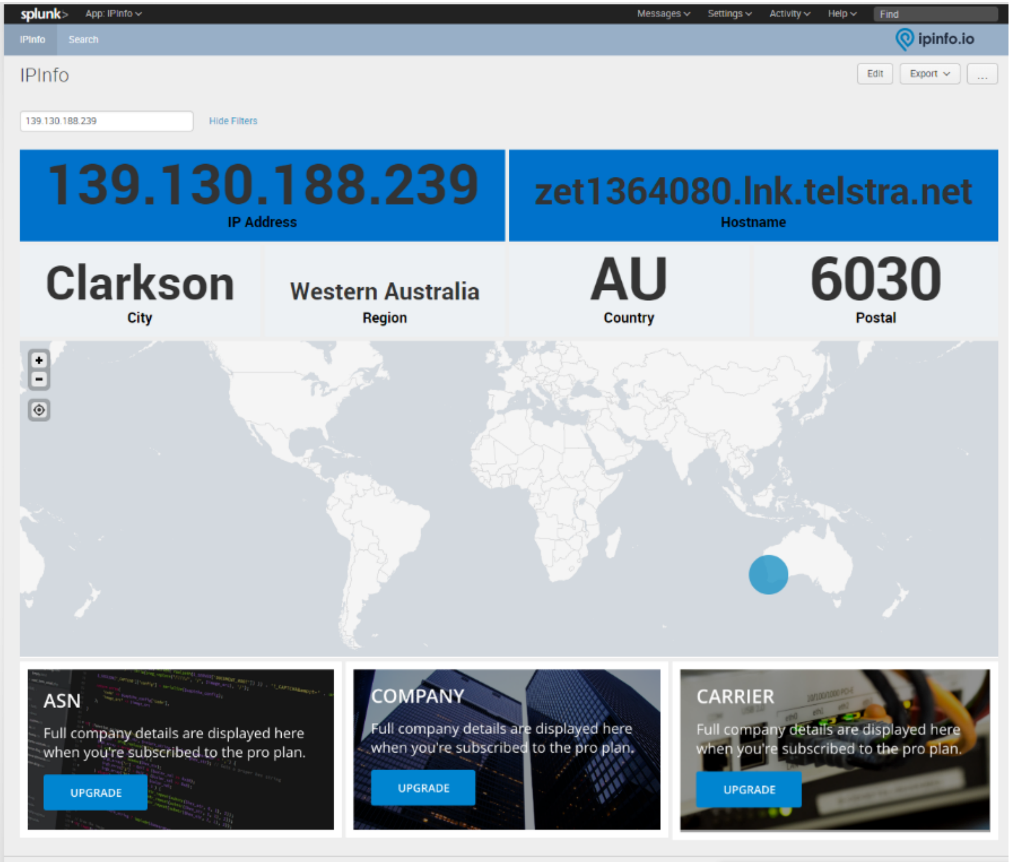
```
| makeresults | eval domain="comcast.net" | rangeinfo domain
```

-------------- domaininfo------------

```
| makeresults | eval IP="1.1.1.1" | domaininfo IP
```

ipinfo.io

IPINFO BASIC



IPInfo

139.130.188.239

139.130.188.239
IP Address

zet1364080.lnk.telstra.net
Hostname

Clarkson
City

Western Australia
Region

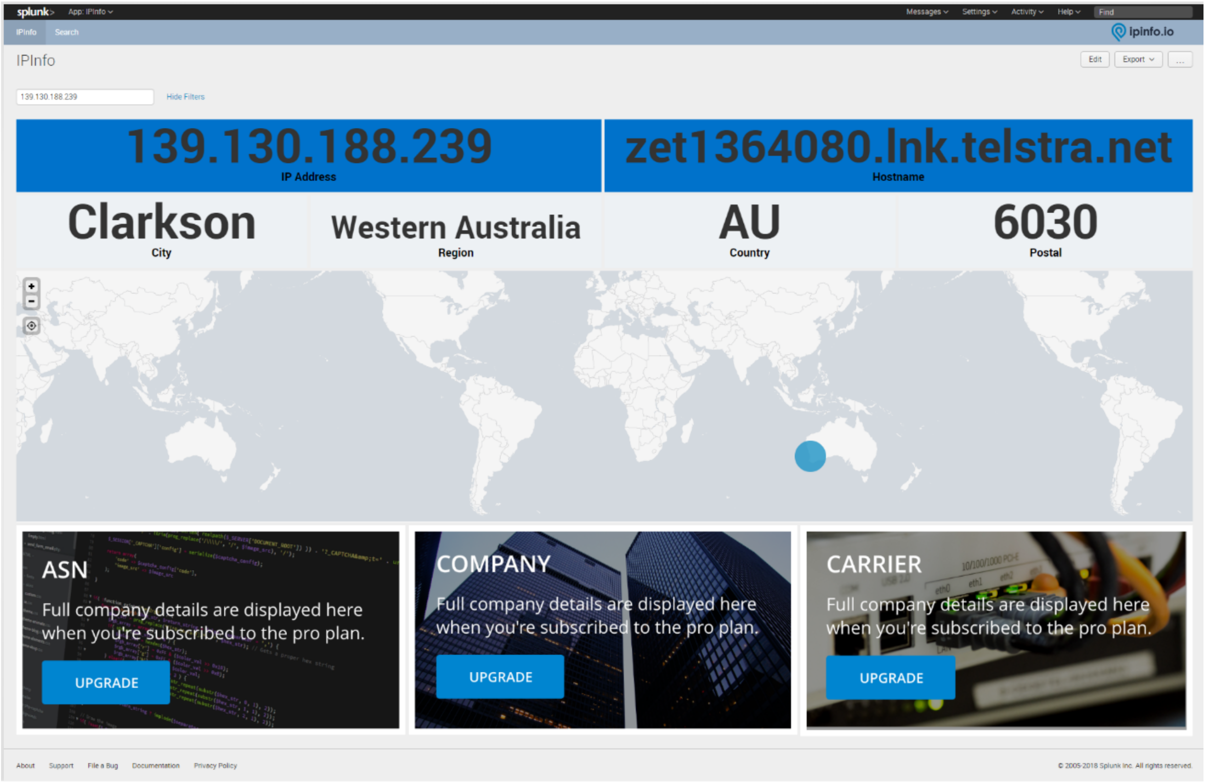
AU
Country

6030
Postal

ASN
Full company details are displayed here when you're subscribed to the pro plan.

COMPANY
Full company details are displayed here when you're subscribed to the pro plan.

CARRIER
Full company details are displayed here when you're subscribed to the pro plan.



IPInfo

139.130.188.239

139.130.188.239
IP Address

zet1364080.lnk.telstra.net
Hostname

Clarkson
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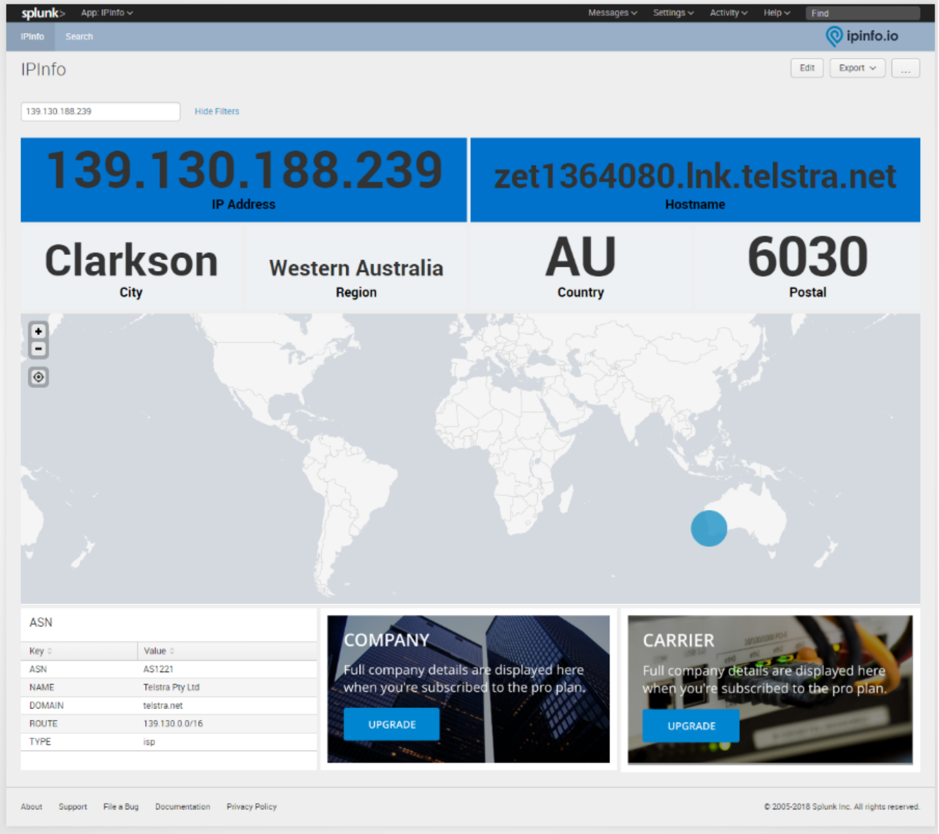
ipinfo.io

GREENACE

IPINFO STANDARD



IPInfo

139.130.188.239

139.130.188.239	zet1364080.lnk.telstra.net
IP Address	Hostname

Clarkson	Western Australia	AU	6030
City	Region	Country	Postal

ASN

Key	Value
ASN	AS1221
NAME	Telstra Pty Ltd
DOMAIN	telstra.net
ROUTE	139.130.0.0/16
TYPE	isp

COMPANY

Full company details are displayed here when you're subscribed to the pro plan.

CARRIER

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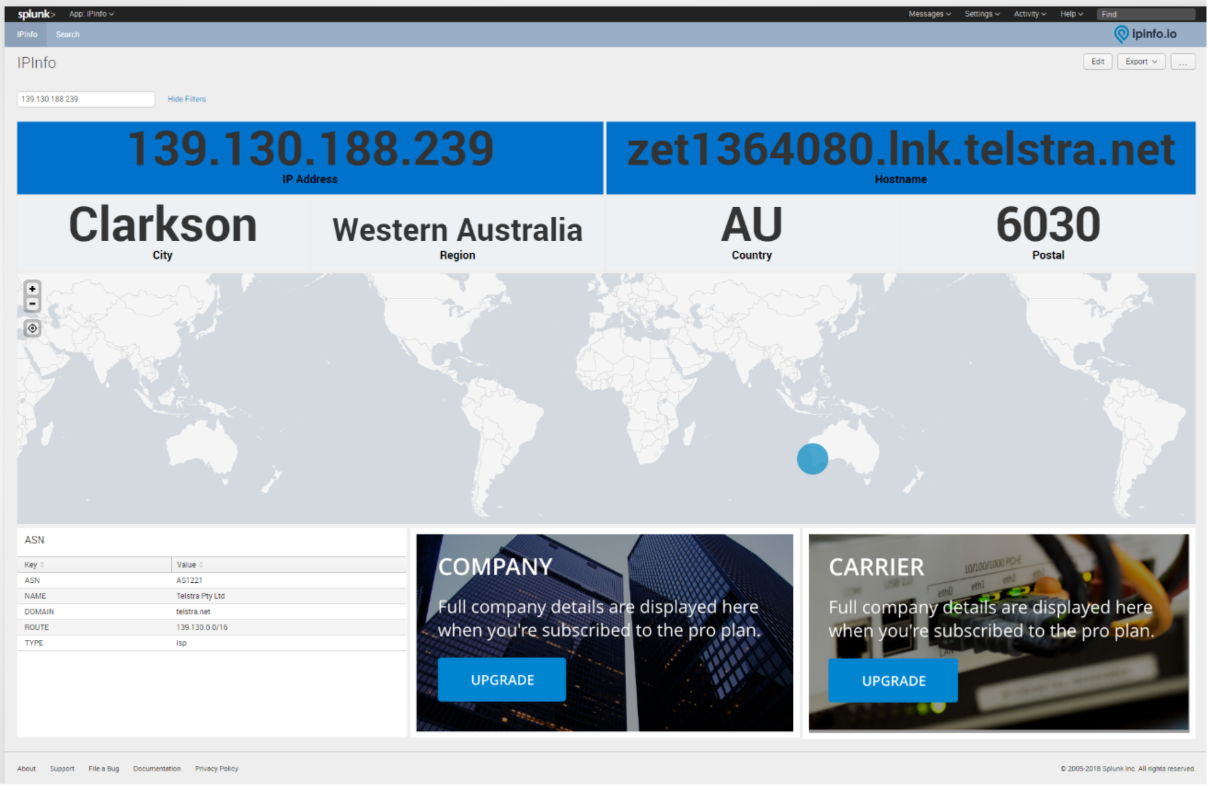
IPInfo

139.130.188.239

139.130.188.239	zet1364080.lnk.telstra.net
IP Address	Hostname

Clarkson	Western Australia	AU	6030
City	Region	Country	Postal

ASN

Key	Value
ASN	AS1221
NAME	Telstra Pty Ltd
DOMAIN	telstra.net
ROUTE	139.130.0.0/16
TYPE	isp

COMPANY

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CARRIER

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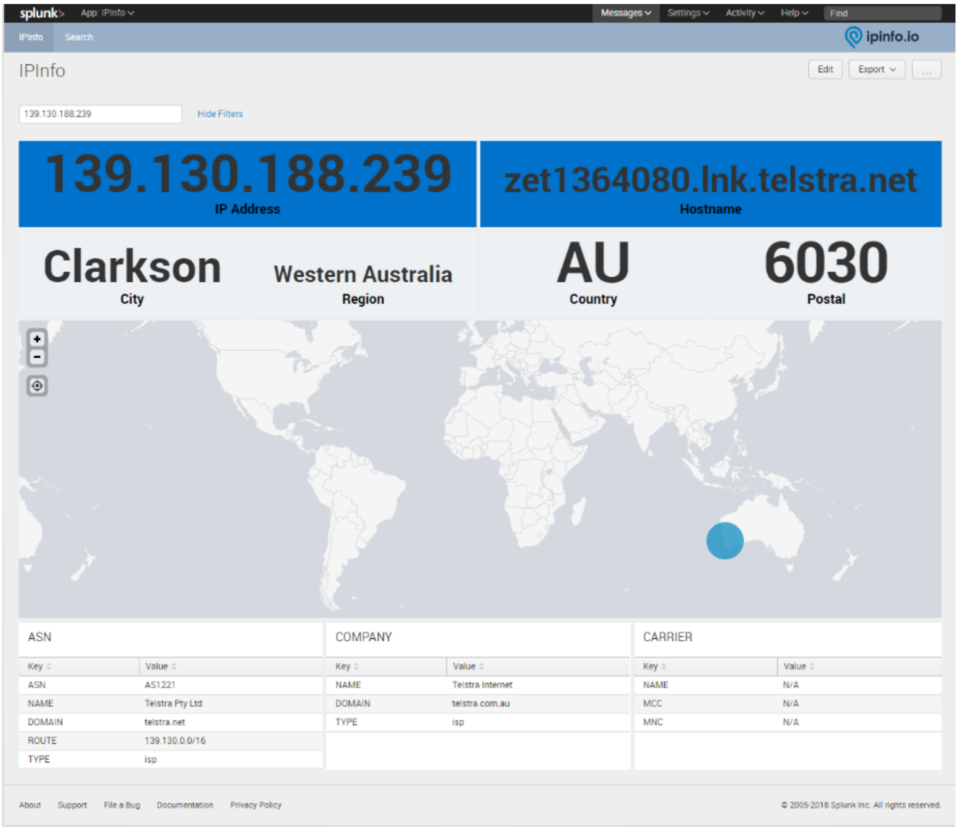
IPINFO PRO (NO CARRIER)



splunk> App: IPInfo
Messages Settings Activity Help Find
IPInfo Search
ipinfo.io
Edit Export ...
Hide Filters

IPInfo

139.130.188.239

139.130.188.239
IP Address

zet1364080.lnk.telstra.net
Hostname

Clarkson
City

Western Australia
Region

AU
Country

6030
Postal

ASN

Key	Value
ASN	AS1221
NAME	Telstra Pty Ltd
DOMAIN	telstra.net
ROUTE	139.130.0.0/16
TYPE	isp

COMPANY

Key	Value
NAME	Telstra Internet
DOMAIN	telstra.com.au
TYPE	isp

CARRIER

Key	Value
NAME	N/A
MCC	N/A
MNC	N/A

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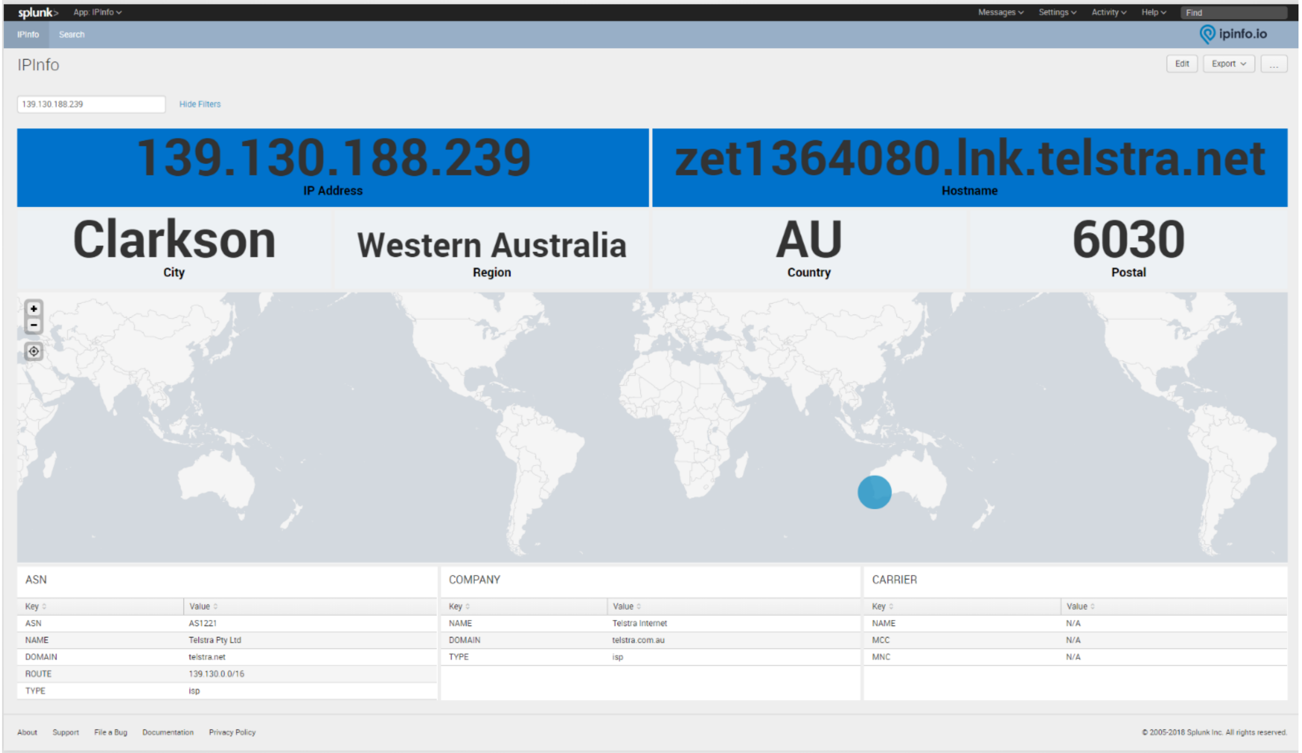

IPInfo

139.130.188.239

139.130.188.239
IP Address

zet1364080.lnk.telstra.net
Hostname

Clarkson
City

Western Australia
Region

AU
Country

6030
Postal

ASN

Key	Value
ASN	AS1221
NAME	Telstra Pty Ltd
DOMAIN	telstra.net
ROUTE	139.130.0.0/16
TYPE	isp

COMPANY

Key	Value
NAME	Telstra Internet
DOMAIN	telstra.com.au
TYPE	isp

CARRIER

Key	Value
NAME	N/A
MCC	N/A
MNC	N/A

splunk> App: IPInfo
Messages Settings Activity Help Find
IPInfo Search
ipinfo.io
Edit Export ...
Hide Filters
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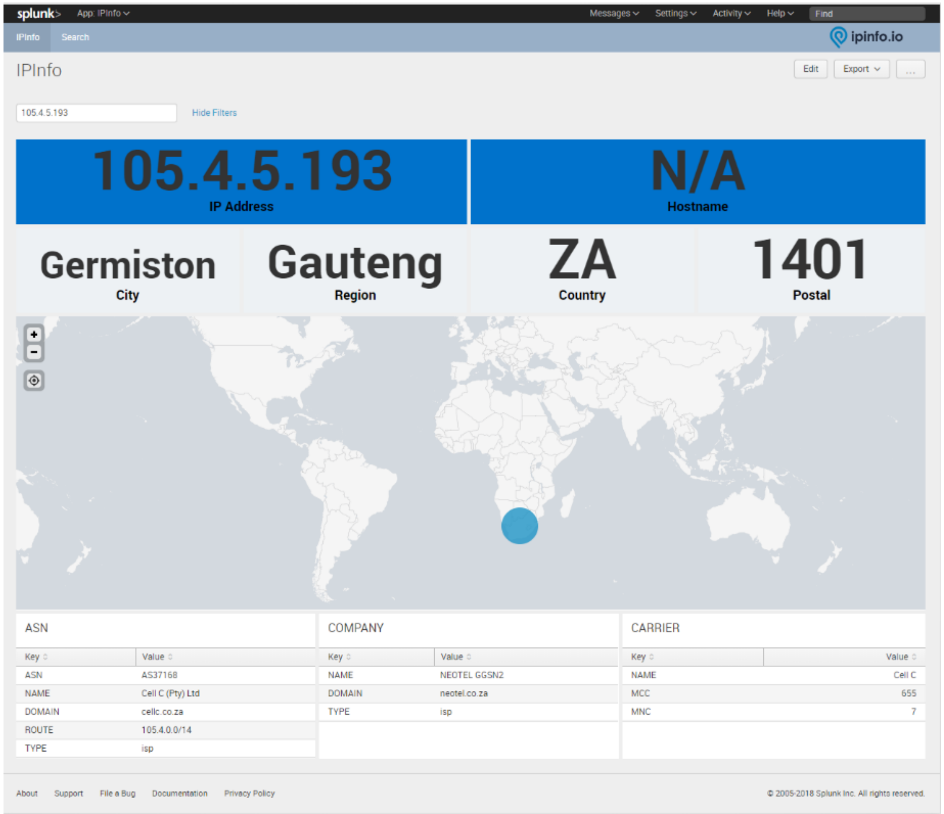
IPINFO PRO (WITH CARRIER)



IPInfo

105.4.5.193

105.4.5.193
IP Address

N/A
Hostname

Germiston
City

Gauteng
Region

ZA
Country

1401
Postal

ASN

Key	Value
ASN	AS37168
NAME	Cell C (Pty) Ltd
DOMAIN	cellc.co.za
ROUTE	105.4.0.0/14
TYPE	isp

COMPANY

Key	Value
NAME	NEOTEL GGSN2
DOMAIN	neotel.co.za
TYPE	isp

CARRIER

Key	Value
NAME	Cell C
MCC	655
MNC	7

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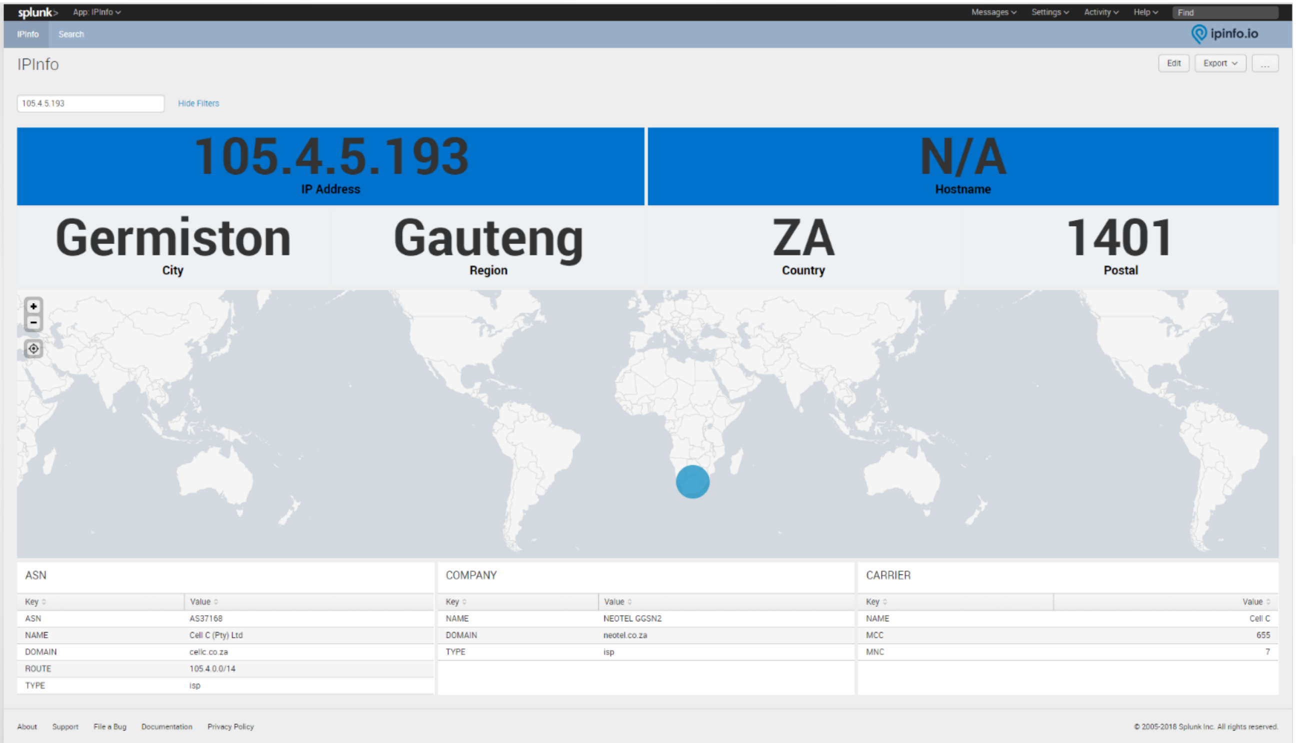
IPInfo

105.4.5.193

105.4.5.193
IP Address

N/A
Hostname

Germiston
City

Gauteng
Region

ZA
Country

1401
Postal

ASN

Key	Value
ASN	AS37168
NAME	Cell C (Pty) Ltd
DOMAIN	cellc.co.za
ROUTE	105.4.0.0/14
TYPE	isp

COMPANY

Key	Value
NAME	NEOTEL GGSN2
DOMAIN	neotel.co.za
TYPE	isp

CARRIER

Key	Value
NAME	Cell C
MCC	655
MNC	7

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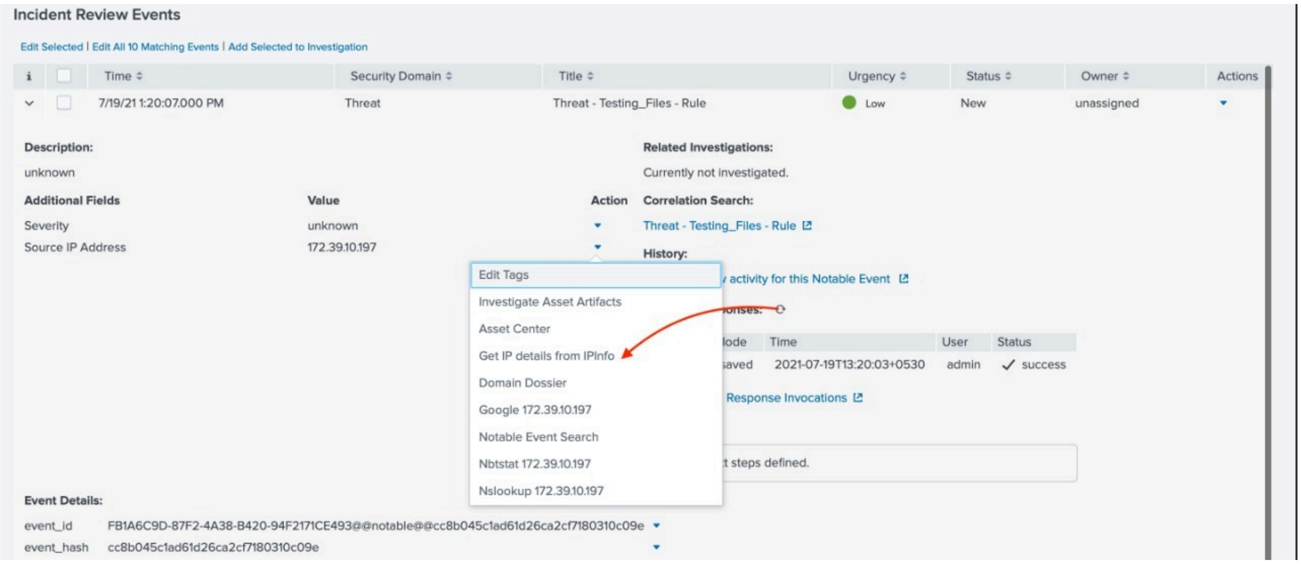
Workflow Action:

From V5.3.1, we have added a new workflow actions in Splunk which will give you option to fetch details of IP from IPInfo by single click. It will work when fieldname is **ip OR *_ip** like **ip,dest_ip,src_ip** etc**.**

For Example:



Incident Review Events

Edit Selected | Edit All 10 Matching Events | Add Selected to Investigation

i	□	Time ⇕	Security Domain ⇕	Title ⇕	Urgency ⇕	Status ⇕	Owner ⇕	Actions
⌄	□	7/19/21 1:20:07.000 PM	Threat	Threat - Testing_Files - Rule	● Low	New	unassigned	▾

Description:

unknown

Additional Fields	Value	Action
Severity	unknown	▾
Source IP Address	172.39.10.197	▾

Related Investigations:

Currently not investigated.

Correlation Search:

Threat - Testing_Files - Rule

History:

activity for this Notable Event

lode	Time	User	Status
saved	2021-07-19T13:20:03+0530	admin	✓ success

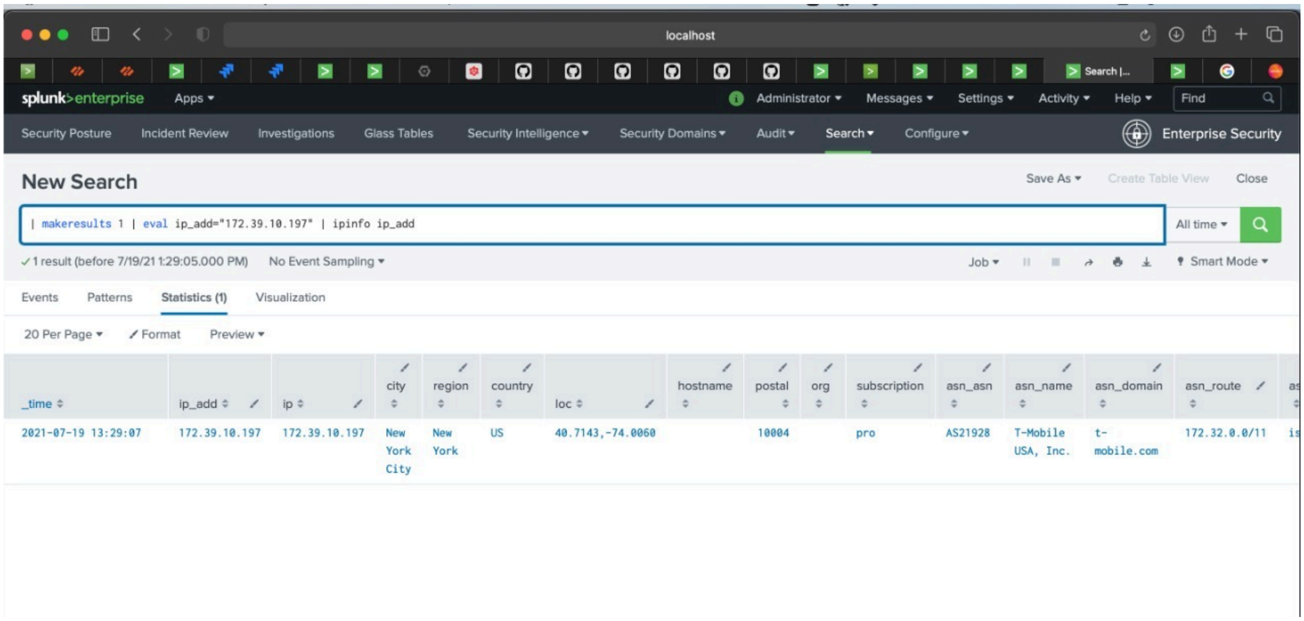
Response Invocations

steps defined.

Event Details:

event_id FB1A6C9D-87F2-4A38-B420-94F2171CE493@@notable@@cc8b045c1ad61d26ca2cf7180310c09e

event_hash cc8b045c1ad61d26ca2cf7180310c09e



New Search

```
| makeresults 1 | eval ip_add="172.39.10.197" | ipinfo ip_add
```

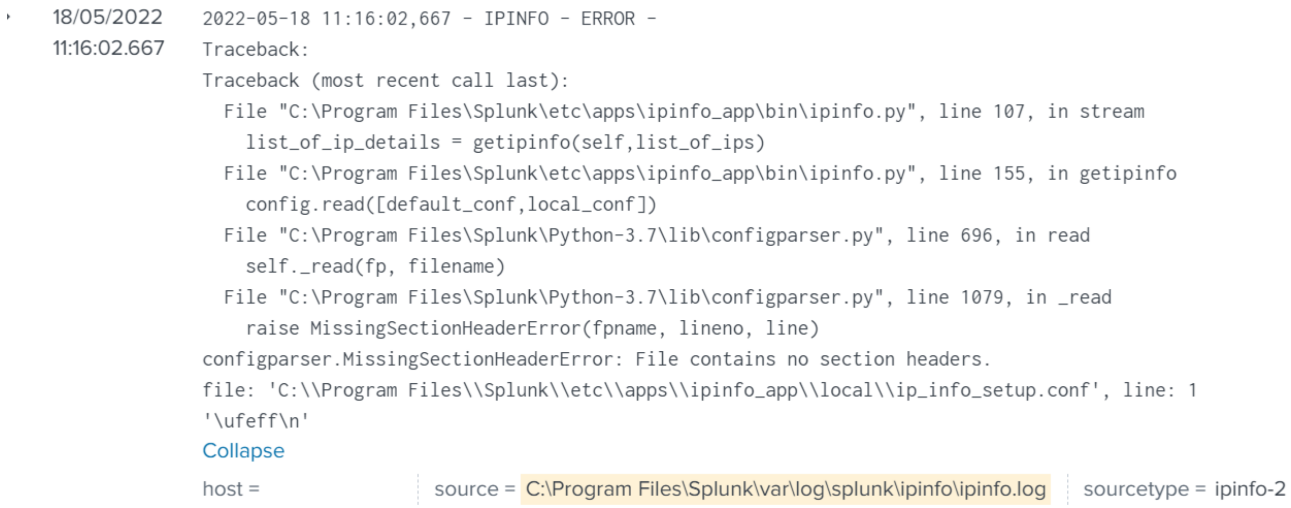
✓1 result (before 7/19/21 1:29:05.000 PM) No Event Sampling ▾

_time	ip_add	ip	city	region	country	loc	hostname	postal	org	subscription	asn_asn	asn_name	asn_domain	asn_route	as
2021-07-19 13:29:07	172.39.10.197	172.39.10.197	New York City	New York	US	40.7143,-74.0060		10004		pro	AS21928	T-Mobile USA, Inc.	t-mobile.com	172.32.0.0/11	is

KNOWN ISSUES

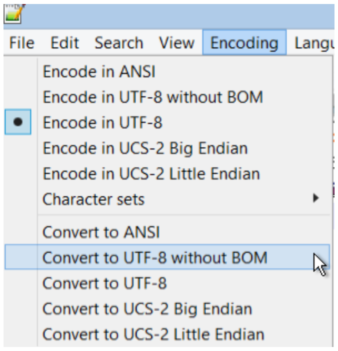
1. Unicode issue with ip_info_setup.conf on certain windows machines

Sometimes we have noticed that unicode issue with ip_info_setup.conf which looks like this:



```
18/05/2022      2022-05-18 11:16:02,667 - IPINFO - ERROR -
11:16:02.667    Traceback:
                Traceback (most recent call last):
                  File "C:\Program Files\Splunk\etc\apps\ipinfo_app\bin\ipinfo.py", line 107, in stream
                    list_of_ip_details = getipinfo(self,list_of_ips)
                  File "C:\Program Files\Splunk\etc\apps\ipinfo_app\bin\ipinfo.py", line 155, in getipinfo
                    config.read([default_conf,local_conf])
                  File "C:\Program Files\Splunk\Python-3.7\lib\configparser.py", line 696, in read
                    self._read(fp, filename)
                  File "C:\Program Files\Splunk\Python-3.7\lib\configparser.py", line 1079, in _read
                    raise MissingSectionHeaderError(fpname, lineno, line)
                configparser.MissingSectionHeaderError: File contains no section headers.
                file: 'C:\\Program Files\\Splunk\\etc\\apps\\ipinfo_app\\local\\ip_info_setup.conf', line: 1
                '\ufeff\n'
                Collapse
                host =            source = C:\Program Files\Splunk\var\log\splunk\ipinfo\ipinfo.log    sourcetype = ipinfo-2
```

This can be fixed by just doing a 'Convert to UTF-8 without BOM' action on the file:


File
Edit
Search
View
Encoding
Langu
Encode in ANSI
Encode in UTF-8 without BOM
● Encode in UTF-8
Encode in UCS-2 Big Endian
Encode in UCS-2 Little Endian
Character sets
Convert to ANSI
Convert to UTF-8 without BOM
Convert to UTF-8
Convert to UCS-2 Big Endian
Convert to UCS-2 Little Endian

THANK YOU