

# IPInfo App for Splunk

App Version: 8.2.0

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Description: Installation and Configuration Document for IPInfo App for Splunk

Latest Update Date: 10<sup>th</sup> Jul, 2023

## 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 <i>ipinfobatch</i> command output New options available for <i>ipinfo</i> command Minor Bug fixes
7.0.7	NEW Setup Page for MMDB Support for all commands using MMDB and API Bugfix related to NULL values with ipinfo command Bugfix on issues with unauthenticated Proxy Other Minor BugFixes
7.0.8	Bugfix multiple API calls or single IP lookup using ipinfo command Other Minor BugFixes
7.1.1	Persistent Setup Page Updated MMDB section on Setup Page Enhancement where MMDB is supported automatically on non-default management port. Other Minor BugFixes
8.0.0	Fix MMDB Bundle Accumulation Issues (old bundle gets deleted as new MMDB bundle is downloaded) Fix ipinfo command to work in MMDB mode to work without "list_storage_password" capability. Other Minor BugFixes
8.1.0	New Feature Manual Trigger to Sync the MMDB Fix IPV6 IP returning results on the Dashboard Disabled Replication to Indexing Layer Other Minor BugFixes
8.2.0	New Feature Option to Parallel download MMDB or Download once and sync later. Other Minor BugFixes

## Supported OS

All Splunk supported OS (Windows, Linux, Mac)

Ref: [https://www.splunk.com/en\\_us/download/splunk-enterprise.html](https://www.splunk.com/en_us/download/splunk-enterprise.html)

## 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.

NEW- MMDB Download is also available and supports all features of *ipinfo* command.

NOTE: MMDB is downloaded in /lookups section of app directory. And does not overwrite splunk's default MMDB.

## 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)

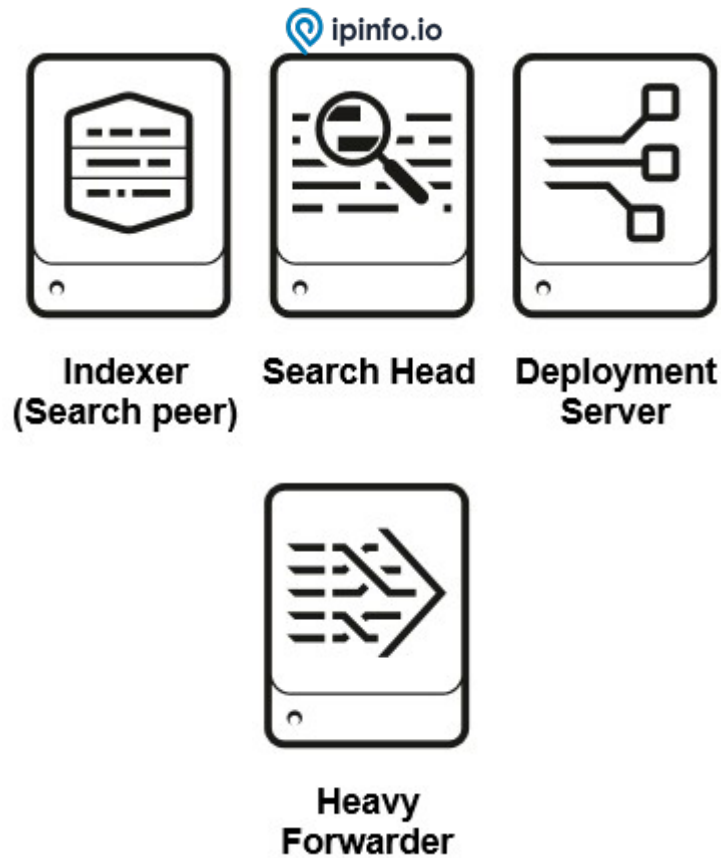
Single standalone Splunk Enterprise Installation on Windows/\*NIX



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
```

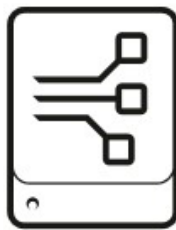
4. **Open CLI** deploy the apps using following command **./splunk reload deploy-server**

### 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**

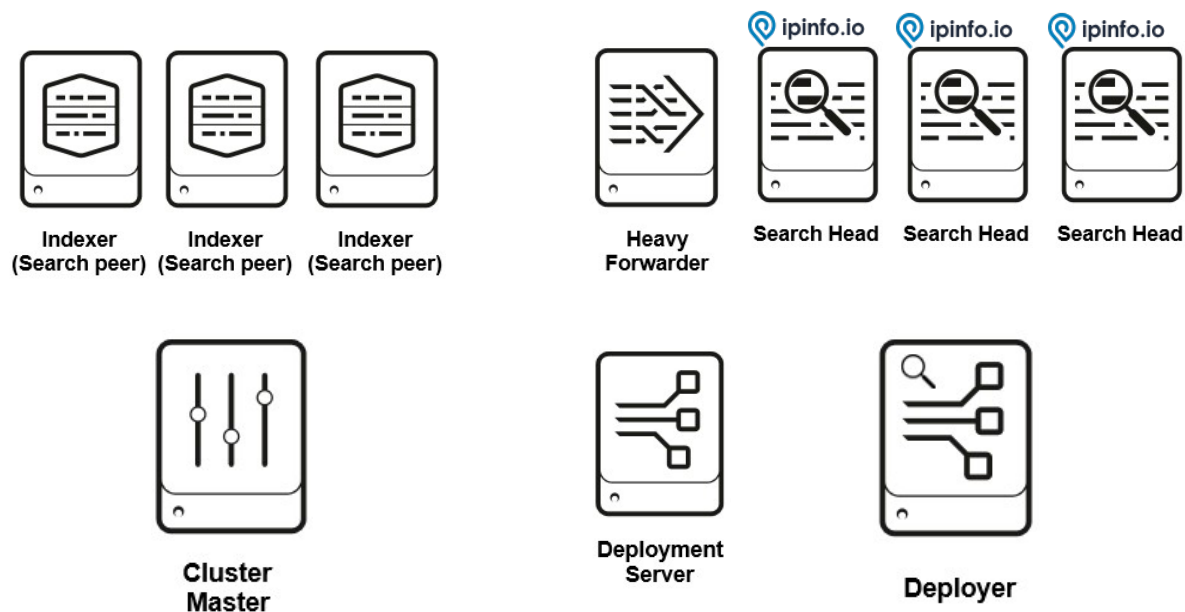
```
[serverClass:<SEARCHHEAD_SERVERCLASS>:app:< ipinfo_app >]
stateOnClient=enabled
restartSplunkd=true
```

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



## CASE4: DISTRIBUTED ARCHITECTURE

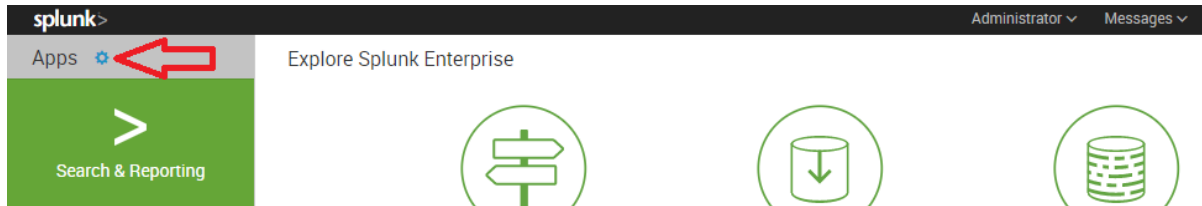
Single Site clustered Indexer, Clustered Search heads and Forwarder (Heavy or Universal).



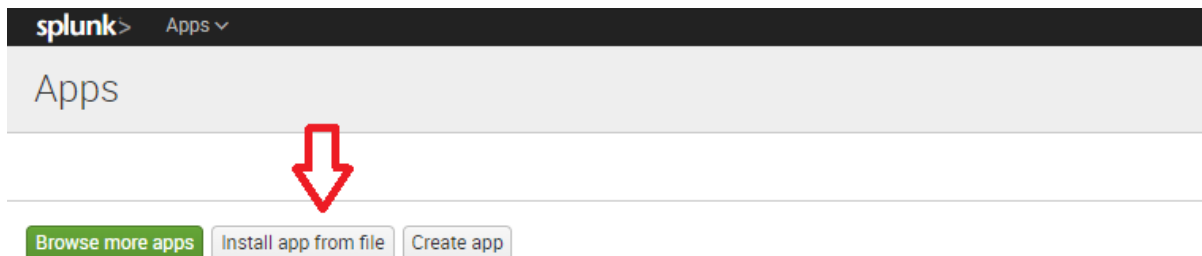
1. **Unzip ipinfo\_app.spl**
2. **Copy ipinfo\_app** to Deployer server in the following location `$SPLUNK_HOME/etc/shcluster/apps/`
3. **Open CLI** on Deployer and deploy the app on Search Head Cluster using following command  
`./splunk apply shcluster-bundle -target <URI>:<management_port> -auth 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

## CASE5: STANDALONE INSTALLATION (WEB)

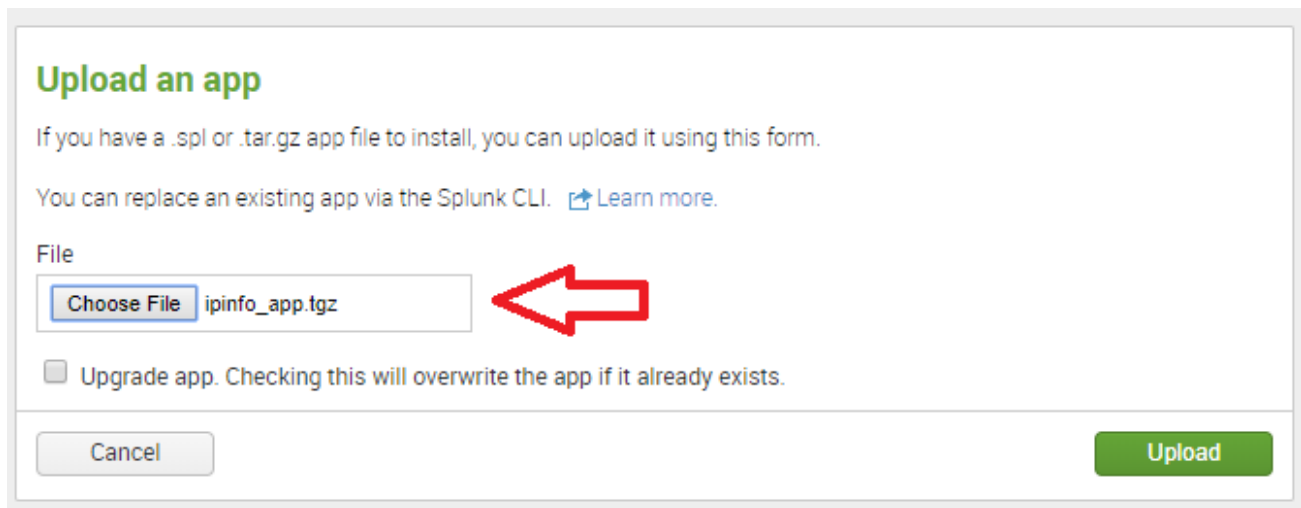
1. On the Splunk Home Page, Click on “Manage Apps”



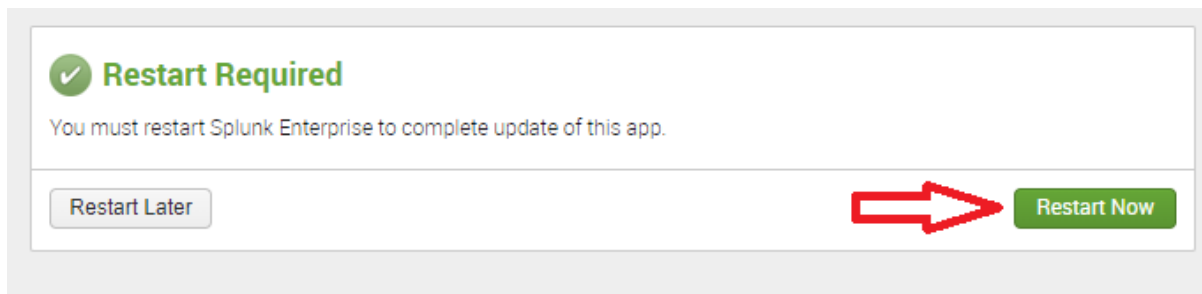
2. On the Manage Apps page, Click on “Install app from file”



3. Select path for IPINFO Splunk app and Click “Upload”



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



## 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

ipinfo

[Browse more apps](#) [Install app from file](#) [Create app](#)

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   <a href="#">Permissions</a>	<a href="#">Enabled</a>   <a href="#">Disable</a>	<a href="#">Set up</a>   <a href="#">Edit properties</a>   <a href="#">View objects</a>   <a href="#">View details on SplunkApps</a>

## API Configuration

If you select “Rest API”

API URL and TOKEN are mandatory fields

All Proxy related fields will be optional fields



### IPinfo Setup Page

Select Method

☒ Fetch Details via Rest API ☐ Use MMDB

API URL

TOKEN

Bearer Token (Only for MMDB File Synchronization. READ DOC)

Download MMDB on each Search Head(Used for Search Head Cluster Only.)

☒ Yes ☐ No

Proxy Enable

☐ Yes ☒ No

Proxy Type(HTTP/HTTPS)

Proxy Host

Proxy Port

Proxy Username

Proxy Password

\*\*\*\*\*

Location MMDB

☐ Yes ☒ No

Location MMDB Download Interval

Daily

Privacy MMDB

☐ Yes ☒ No

Privacy MMDB Download Interval

Daily

ASN MMDB

☐ Yes ☒ No

ASN MMDB Download Interval

Daily

Company MMDB

☐ Yes ☒ No

Company MMDB Download Interval

Daily

Carrier MMDB

☐ Yes ☒ No

Carrier MMDB Download Interval

Daily

Submit

## MMDB Configuration

If you select “MMDB”

- **TOKEN** and **MMDB** related fields will be mandatory fields
- Bearer Token is optional. But it will be used when trying to download MMDB using **Manual Refresh** Dashboard and/or using “**Download MMDB on Each Search Head**” as “**No**”.
- Set “**Download MMDB on Each Search Head**” as “**No**” used when there is a search head cluster and you want to download MMDB from ipinfo.io on only one Search and sync on other search heads and in this case Bearer token is compulsory. And set “**Yes**” when you each Search Head to Download MMDB from IPinfo.io. Recommended “**Yes**”
- All Proxy related fields will be optional fields
- **Bearer Token** and “**Download MMDB on Each Search Head**” will not use for Standalone Search Head.

## IPinfo Setup Page


Select Method	<input type="radio"/> Fetch Details via Rest API <input checked="" type="radio"/> Use MMDB
API URL	<input type="text"/>
TOKEN	<input type="text"/>
Bearer Token (Only for MMDB File Synchronization. READ DOC)	<input type="text"/>
Download MMDB on each Search Head(Used for Search Head Cluster Only.)	<input checked="" type="radio"/> Yes <input type="radio"/> No
Proxy Enable	<input type="radio"/> Yes <input checked="" type="radio"/> No
Proxy Type(HTTP/HTTPS)	<input type="text"/>
Proxy Host	<input type="text"/>
Proxy Port	<input type="text"/>
Proxy Username	<input type="text"/>
Proxy Password	<input type="password"/>
Location MMDB	<input checked="" type="radio"/> Yes <input type="radio"/> No
Location MMDB Download Interval	<input type="text" value="Daily"/>
Privacy MMDB	<input checked="" type="radio"/> Yes <input type="radio"/> No
Privacy MMDB Download Interval	<input type="text" value="Daily"/>
ASN MMDB	<input checked="" type="radio"/> Yes <input type="radio"/> No
ASN MMDB Download Interval	<input type="text" value="Daily"/>
Company MMDB	<input checked="" type="radio"/> Yes <input type="radio"/> No
Company MMDB Download Interval	<input type="text" value="Daily"/>
Carrier MMDB	<input checked="" type="radio"/> Yes <input type="radio"/> No
Carrier MMDB Download Interval	<input type="text" value="Daily"/>
<input type="button" value="Submit"/>	

NOTE: MMDB is downloaded in /lookups section of app directory. And does not overwrite splunk's default MMDB.

### Steps to get Bearer Token:

- 1) Go to Settings -> Tokens
- 2) Click on "New Token" and provide necessary information. And when you click on Create. You will get token value. Just copy that and give as Bearer token in IPInfo.

### New Token

 You can only create tokens for SAML users if you enable either attribute query requests or authentication extensions.

User \*

admin

User who will receive this token.

Audience \*

Ipinfo.io

Purpose of the token.

Expiration

Relative Time ▾

+100d

Examples: +10m,+20h,+30d

Not Before ?

Relative Time ▾

+1m

Examples: +10m,+20h,+30d

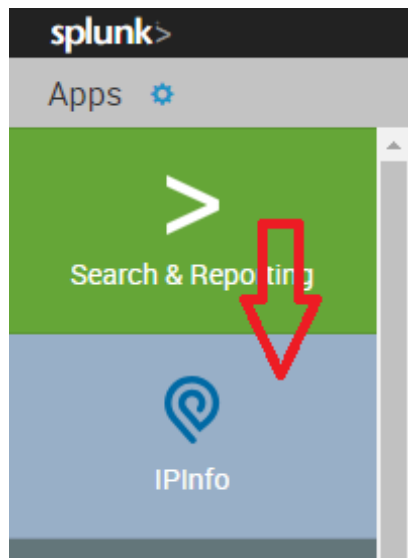
Token

Token appears here after creation and is no longer accessible after you close this window.

Cancel

Create

## 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 -----

```
| makesresults 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)

```
| makesresults 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)

```
| makesresults 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)

```
| makesresults 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 -----

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

----- rangesinfo -----

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

----- domaininfo-----

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



## IPINFO BASIC

splunk> App: IPInfo Messages Settings Activity Help Find

IPInfo Search ipinfo.io Edit Export ...

139.130.188.239 Hide Filters

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.  
UPGRADE

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

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

splunk> App: IPInfo Messages Settings Activity Help Find

IPInfo Search ipinfo.io Edit Export ...

139.130.188.239 Hide Filters

139.130.188.239  
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Postal



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

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

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

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## IPINFO PRO (NO CARRIER)

splunk> App: ipinfo Messages Settings Activity Help Find

IPInfo Search ipinfo.io

139.130.188.239 Hide Filters

**139.130.188.239**  
IP Address


**zet1364080.lnk.telstra.net**  
Hostname

**Clarkson**  
City

**Western Australia**  
Region

**AU**  
Country

**6030**  
Postal



ASN		COMPANY		CARRIER	
Key	Value	Key	Value	Key	Value
ASN	AS1221	NAME	Telstra Internet	NAME	N/A
NAME	Telstra Pty Ltd	DOMAIN	telstra.com.au	MCC	N/A
DOMAIN	telstra.net	TYPE	isp	MNC	N/A
ROUTE	139.130.0.0/16				
TYPE	isp				

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splunk> App: ipinfo Messages Settings Activity Help Find

IPInfo Search ipinfo.io

139.130.188.239 Hide Filters

**139.130.188.239**  
IP Address


**zet1364080.lnk.telstra.net**  
Hostname

**Clarkson**  
City

**Western Australia**  
Region

**AU**  
Country

**6030**  
Postal



ASN		COMPANY		CARRIER	
Key	Value	Key	Value	Key	Value
ASN	AS1221	NAME	Telstra Internet	NAME	N/A
NAME	Telstra Pty Ltd	DOMAIN	telstra.com.au	MCC	N/A
DOMAIN	telstra.net	TYPE	isp	MNC	N/A
ROUTE	139.130.0.0/16				
TYPE	isp				

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## IPINFO PRO (WITH CARRIER)

splunk App: IPInfo Messages Settings Activity Help Find

IPInfo Search ipinfo.io Edit Export

105.4.5.193 Hide Filters

105.4.5.193  
IP Address


N/A  
Hostname

Germiston  
City

Gauteng  
Region

ZA  
Country

1401  
Postal



ASN		COMPANY		CARRIER	
Key	Value	Key	Value	Key	Value
ASN	AS37168	NAME	NEOTEL GGSN2	NAME	Cell C
NAME	Cell C (Pty) Ltd	DOMAIN	neotel.co.za	MCC	655
DOMAIN	celic.co.za	TYPE	isp	MNC	7
ROUTE	105.4.0.0/14				
TYPE	isp				

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splunk App: IPInfo Messages Settings Activity Help Find

IPInfo Search ipinfo.io Edit Export

105.4.5.193 Hide Filters

105.4.5.193  
IP Address


N/A  
Hostname

Germiston  
City

Gauteng  
Region

ZA  
Country

1401  
Postal



ASN		COMPANY		CARRIER	
Key	Value	Key	Value	Key	Value
ASN	AS37168	NAME	NEOTEL GGSN2	NAME	Cell C
NAME	Cell C (Pty) Ltd	DOMAIN	neotel.co.za	MCC	655
DOMAIN	celic.co.za	TYPE	isp	MNC	7
ROUTE	105.4.0.0/14				
TYPE	isp				

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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.

**Incident Review Events**

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

i		Time ▾	Security Domain ▾	Title ▾	Urgency ▾	Status ▾	Owner ▾	Actions
▼	<input type="checkbox"/>	7/19/21 1:20:07.000 PM	Threat	Threat - Testing_Files - Rule	<span style="color: green;">●</span> Low	New	unassigned	▼

**Description:**  
unknown  
  
**Additional Fields**  
Severiry unknown  
Source IP Address 172.39.10.197

**Action**  
▼  
▼

**Related Investigations:**  
Currently not investigated.  
  
**Correlation Search:**  
[Threat - Testing\\_Files - Rule](#)  
  
**History:**  
[View activity for this Notable Event](#)  
[Responses](#)

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

[Response Invocations](#)

Steps defined.

**Event Details:**  
event\_id FBI A6C9D-87F2-4A38-B420-94F217ICE493@notable@@cc8b045c1ad61d26ca2cf7180310c09e  
event\_hash cc8b045c1ad61d26ca2cf7180310c09e

The screenshot shows the Splunk Enterprise Security interface. At the top, there's a navigation bar with tabs for Security Posture, Incident Review, Investigations, Glass Tables, Security Intelligence, Security Domains, Audit, Search (active), and Configure. Below this is a 'New Search' section with a search bar containing the query: `| makeresults 1 | eval ip_add="172.39.10.197" | ipinfo ip_add`. The results show 1 result for the time range 'before 7/19/21 1:29:05.000 PM'. The results are displayed in a table with columns for time, IP address, location (city, region, country, loc), and various ASN-related fields. The first result shows the IP 172.39.10.197 is located in New York City, US, with ASN AS21928 (T-Mobile USA, Inc.).

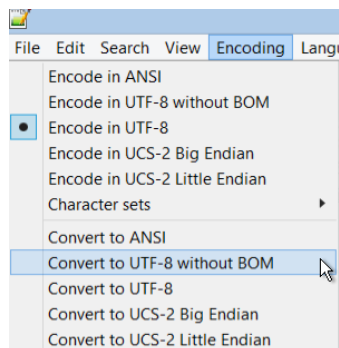
_time	ip_add	ip	city	region	country	loc	hostname	postal	org	subscription	asn_asn	asn_name	asn_domain	asn_route
2021-07-19 13:29:07	172.39.10.197	172.39.10.197	New York City	New York	US	40.7143,-74.0060		10004	pro		AS21928	T-Mobile USA, Inc.	t-mobile.com	172.32.0.0/11

## 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  
'\ufe00\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:



THANK YOU