

# EXAMPLE - IPTOINT Function

This examples illustrates how you can convert IP addresses to numeric values for purposes of comparison and sorting.

## Functions:

Item	Description
IPTOINT Function	Computes an integer value for a four-octet internet protocol (IP) address. Source value must be a valid IP address or a column reference to IP addresses.
IPFROMINT Function	Computes a four-octet internet protocol (IP) address from a 32-bit integer input.

## Source:

Your dataset includes the following values for IP addresses:

IpAddr
192.0.0.1
10.10.10.10
1.2.3.4
1.2.3
http://12.13.14.15
https://16.17.18.19

## Transformation:

When the above data is imported, the application initially types the column as URL values, due to the presence of the `http://` and `https://` protocol identifiers. Select the IP Address data type for the column. The last three values are listed as mismatched values. You can fix the issues with the last two entries by applying the following transform, which matches on both `http://` and `https://` strings:

<b>Transformation Name</b>	Replace text or pattern
<b>Parameter: Column</b>	IpAddr
<b>Parameter: Find</b>	<code>`http%?://`</code>
<b>Parameter: Replace with</b>	<code>''</code>

**NOTE:** The `%?` Pattern matches zero or one time on any character, which enables the matching on both variants of the protocol identifier.

Now, only the `1.2.3` value is mismatched. Perhaps you know that there is a missing zero at the end of it. To add it back, you can do the following:

<b>Transformation Name</b>	Replace text or pattern
<b>Parameter: Column</b>	IpAddr
<b>Parameter: Find</b>	<code>`1.2.3[end]`</code>

<b>Parameter: Replace with</b>	'1.2.3.0'
<b>Parameter: Match all occurrences</b>	true

All values in the column should be valid for the IP Address data type. To convert these values to their integer equivalents:

<b>Transformation Name</b>	New formula
<b>Parameter: Formula type</b>	Single row formula
<b>Parameter: Formula</b>	IPTOINT(IpAddr)
<b>Parameter: New column name</b>	'ip_as_int'

You can now manipulate the data based on this numeric key. To convert the integer values back to IP addresses for checking purposes, use the following:

<b>Transformation Name</b>	New formula
<b>Parameter: Formula type</b>	Single row formula
<b>Parameter: Formula</b>	IPFROMINT(ip_as_int)
<b>Parameter: New column name</b>	'ip_check'

### Results:

X	ip_as_int	ip_check
192.0.0.1	3221225473	192.0.0.1
10.10.10.10	168430090	10.10.10.10
1.2.3.4	16909060	1.2.3.4
1.2.3.0	16909056	1.2.3.0
12.13.14.15	202182159	12.13.14.15
16.17.18.19	269554195	16.17.18.19