



# **BroadWorks Dashboards and Discovery**

## **Installation and Usage Guide**

Release 2.0

Document Version 2.0

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## **BroadSoft® Guide**

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## Content

This document contains instructions to configure Kibana and import the sample visualizations contain in file “BroadWorks Dashboards x.x”.

These instructions assume that Elasticsearch is installed, functional and collecting data from BroadWorks. Kibana should also be installed with its configuration as instructed by the BroadWorks Dashboards and Discovery toolset installation guide.

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## Document Revision History

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### Example

Version	Reason for Change	Date	Author
1	Created document.	<i>September 2016</i>	<i>DES</i>
2.	Updated Document for 2.0 release	<i>March 2017</i>	<i>Harinath Krishnamoorthy</i>

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## 1 Summary of Changes

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This section describes the changes to this document for each release and document version.

### 1.1 Changes for Release 2.0, Document Version 1

This version of the document includes the following changes:

- Added SIP Sequence Diagram
- Updated the User Interface and User Experience
- Added support for Tribe Node Functionality
- Added Log Collector feature - OCI Logs, Tech Support Logs and event happened between the timestamp.

## **2 Installation of Plugins**

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To install the Sip Analyzer and XSI App execute the following on the server where Kibana is installed

- `cd kibana-5.5.2-linux-x64`
- `./bin/kibana-plugin install file:///<Path to SipAnalyzer_x.x.zip>`
- `./bin/kibana-plugin install file:///<Path to XsiEvent_x.x.zip>`

Complete!

### 3 Overview of Broadworks Discovery and Dashboard SIP ANALYZER

SIP Analyzer is a toolkit which extends the Capabilities of Kibana[1]. It is a web application which helps to find information about SIP calls and find the root cause of the issue.

- Display complete call flow by selected criteria: time frame, SIP Method and content.
- Shows the SIP Sequence Diagram for the given call
- Displays the OCI Transaction Details
- Log Collector - Collects entire events happened between the given correlation ID along with OCI Transaction and Tech Support Information.
- Capabilities to find XSI Logs from SIP App.
- Download it for offline analysis or inclusion in TAC ticket.

#### 3.1 Getting Started with SIP ANALYZER

Open Kibana, you will be presented with the following screen – You can choose plugin which has Broadsoft Logo with name ‘SIP Analyzer’

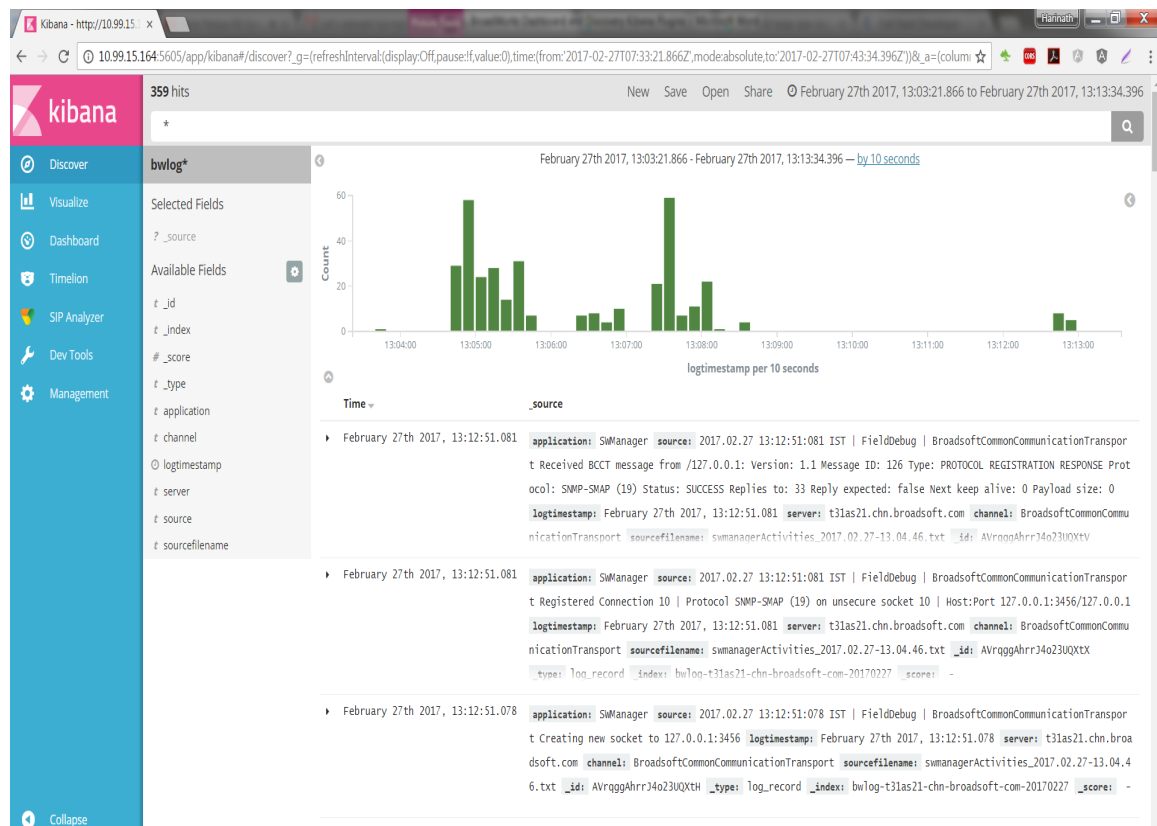


Figure 1 Kibana Discover Screen

Locate the SIP Analyser app from navigation bar by Broadsoft logo

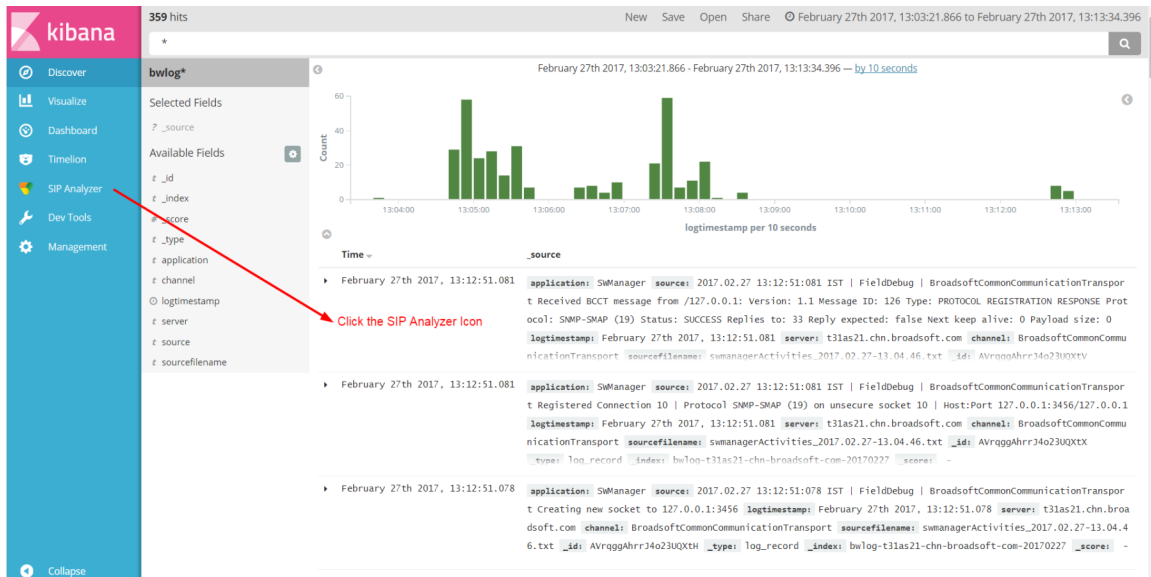
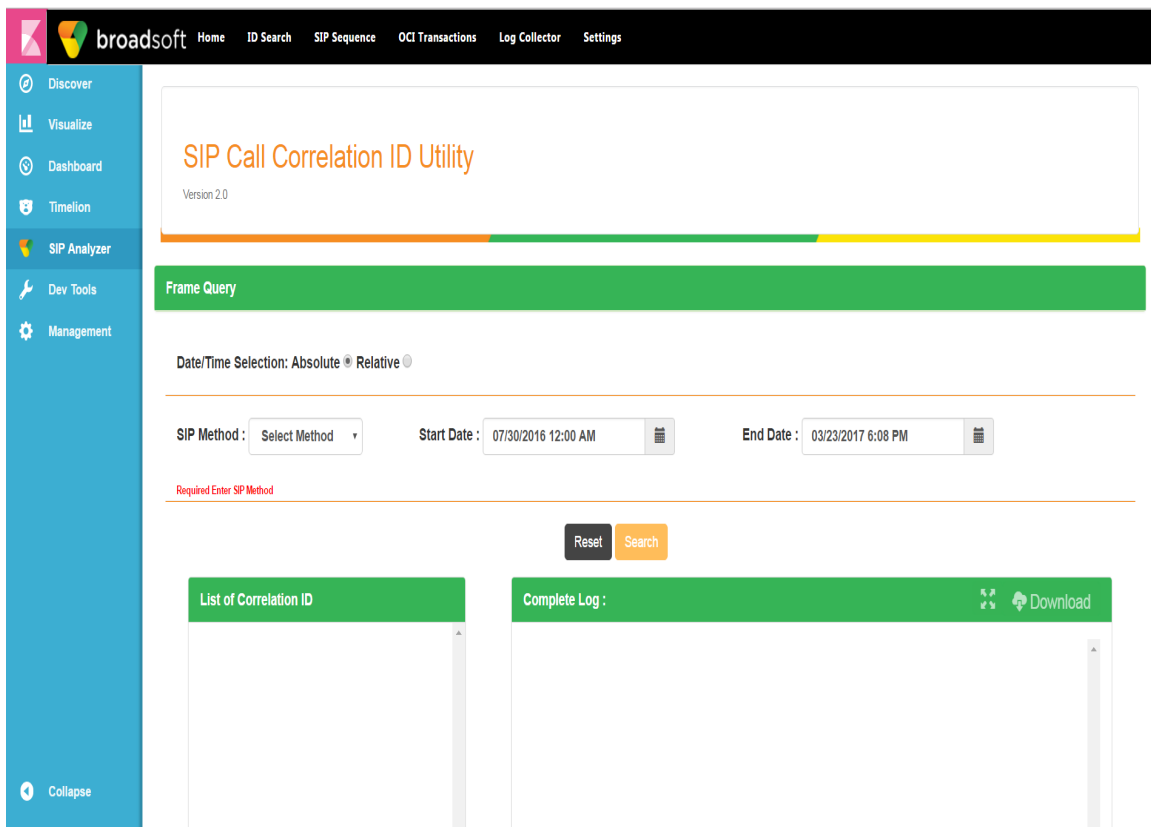


Figure 2 Choosing SIP Analyzer

Click SIP Analyzer Icon to open the SIP App and you will see the below home screen.



The screenshot shows the 'SIP Call Correlation ID Utility' home screen. The interface includes a sidebar with navigation options (Discover, Visualize, Dashboard, Timelion, SIP Analyzer, Dev Tools, Management). The main header displays the Broadsoft logo and navigation links (Home, ID Search, SIP Sequence, OCI Transactions, Log Collector, Settings). The central area features a 'Frame Query' section with a 'Date/Time Selection' dropdown (Absolute/Relative), a 'SIP Method' dropdown, and 'Start Date' and 'End Date' input fields. Below these fields are 'Reset' and 'Search' buttons. The 'List of Correlation ID' table is currently empty, and a 'Complete Log' section with a 'Download' button is visible on the right.

Figure 3 Home Screen of the SIP Analyzer App

You can collapse the side navigation bar by pressing the left arrow icon present in left bottom of the page



### 3.2 Searching Complete Log Flow

The selection criteria are made up several options. The first is selecting the timeframe.

- You can select an absolute time/window or a relative time (last 5 minutes, last 10 minutes etc).
- Then you can select the criteria – SIP Method[2] and content – for example – select INVITE, with the FROM: domain is \*(wildcard). A snapshot is below showing this criteria and the result.
- You can increase the filter by clicking on press button plus (+) next to search box and remove filter by using minus (-) button
- Click on Search button to fetch the details from server.
- Result is displayed on bottom left pane - List of calls found matching the criteria
- When hovering over the call – a tooltip will be displayed showing the From:, To: and RequestURI of the selected call.

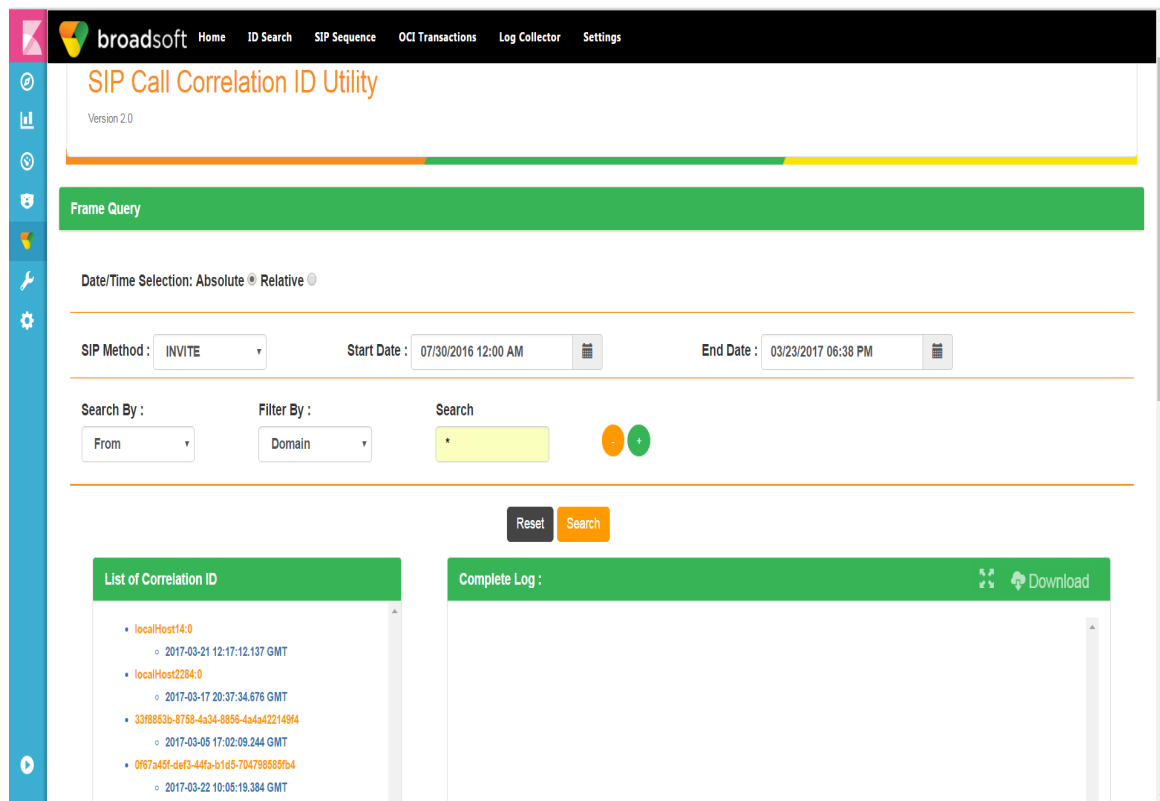
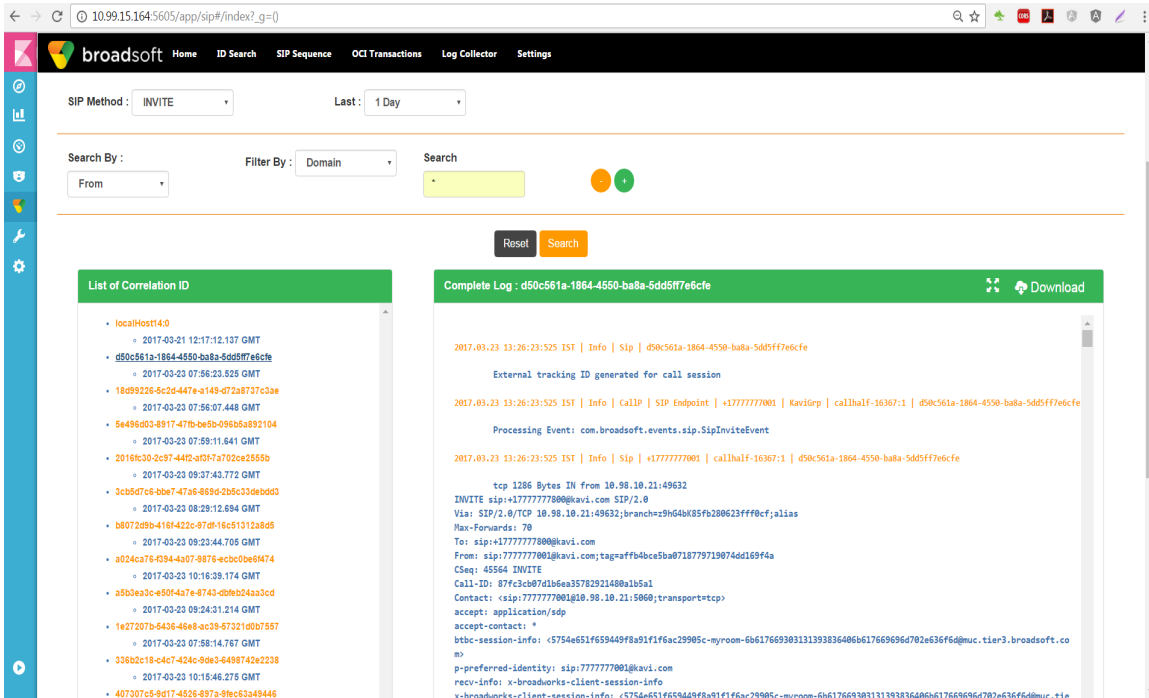


Figure 4 Displaying the List of Correlation ID Matching Input Criteria

By clicking on one of the calls will trigger the loading of the complete call flow.  
An example of that is below:

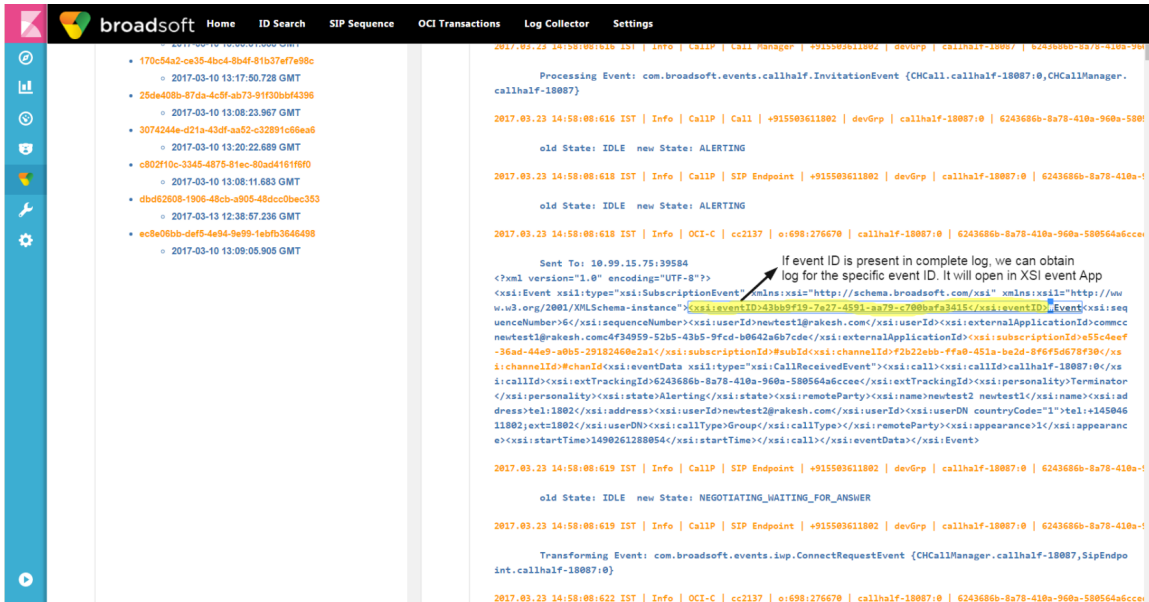


The screenshot shows the Broadsoft Log Collector interface. On the left, there's a sidebar with navigation icons. The main area has a search bar with 'SIP Method' set to 'INVITE' and 'Last' set to '1 Day'. Below the search bar, there's a 'List of Correlation ID' table with several entries. One entry is highlighted: 'd50c561a-1864-4650-ba8a-5dd5f7e6cfe'. To the right of this list, a 'Complete Log' panel displays the detailed log for the selected correlation ID. The log shows various events, including 'Processing Event: com.broadsoft.events.sip.SipInviteEvent' and 'Processing Event: com.broadsoft.events.sip.SipInviteEvent'. The log also includes details like 'tcp 1286 Bytes IN from 10.98.10.21:49632' and 'Via: SIP/2.0/UDP 10.98.10.21:49632;branch=z9hG4bK85f628623fff0cf;alias'. The log is formatted in a structured way, with different colors for different sections.

Figure 5 Showing the Complete Log Flow for selected Correlation ID

### 3.3 Searching XSI Logs

- If complete log message contains EventID, SubscriptionID, ChannelID, click on the hyperlink to display the corresponding logs
- XSI ID are formatted for easy identification



The screenshot shows the Broadsoft Log Collector interface. On the left, there's a sidebar with navigation icons. The main area has a search bar with 'SIP Method' set to 'INVITE' and 'Last' set to '1 Day'. Below the search bar, there's a 'List of Correlation ID' table with several entries. One entry is highlighted: 'd50c561a-1864-4650-ba8a-5dd5f7e6cfe'. To the right of this list, a 'Complete Log' panel displays the detailed log for the selected correlation ID. The log shows various events, including 'Processing Event: com.broadsoft.events.callhalf.InvitationEvent' and 'Processing Event: com.broadsoft.events.callhalf.InvitationEvent'. The log also includes details like 'tcp 1286 Bytes IN from 10.98.10.21:49632' and 'Via: SIP/2.0/UDP 10.98.10.21:49632;branch=z9hG4bK85f628623fff0cf;alias'. The log is formatted in a structured way, with different colors for different sections. An annotation points to a specific event ID in the log, stating: 'If event ID is present in complete log, we can obtain log for the specific event ID. It will open in XSI event App'.

Figure 6 Selecting the EventID to Display corresponding logs

Below is the example of choosing Subscription ID in Complete log message. Which in turn open XSI App.

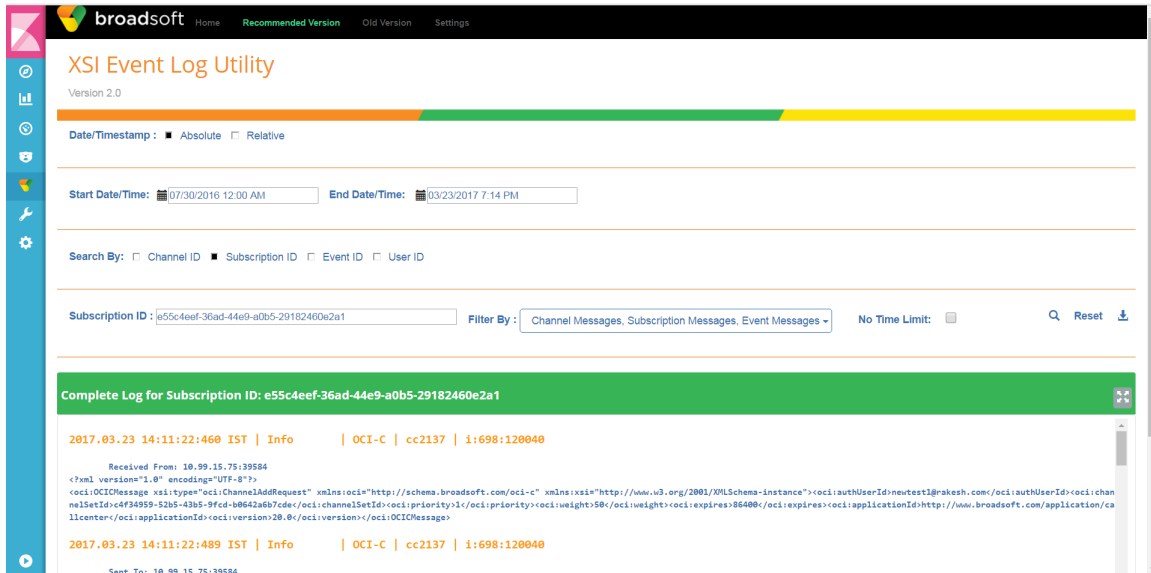


Figure 7 Displaying XSI – Subscription ID Logs

### 3.4 Download Log File and Full Screen Viewing

- Download the log file for the given correlation id by clicking download icon
- View the Complete log container in full screen for distraction free reading.

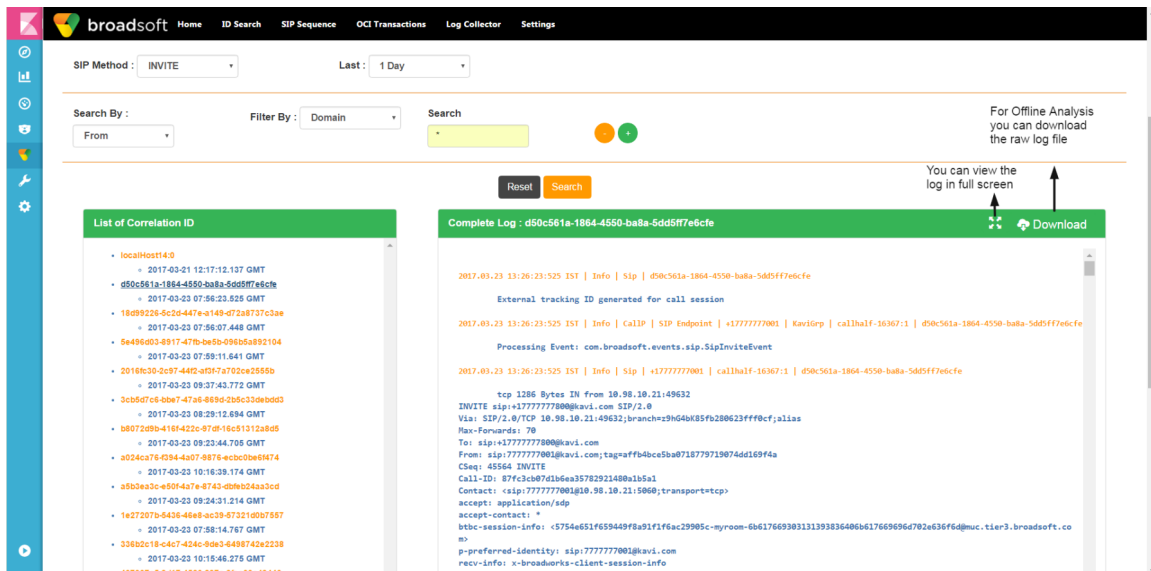


Figure 8 Choosing Full screen Mode and Downloading Log file

### 3.4.1 Action Button

These buttons display on most content panes






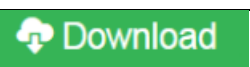
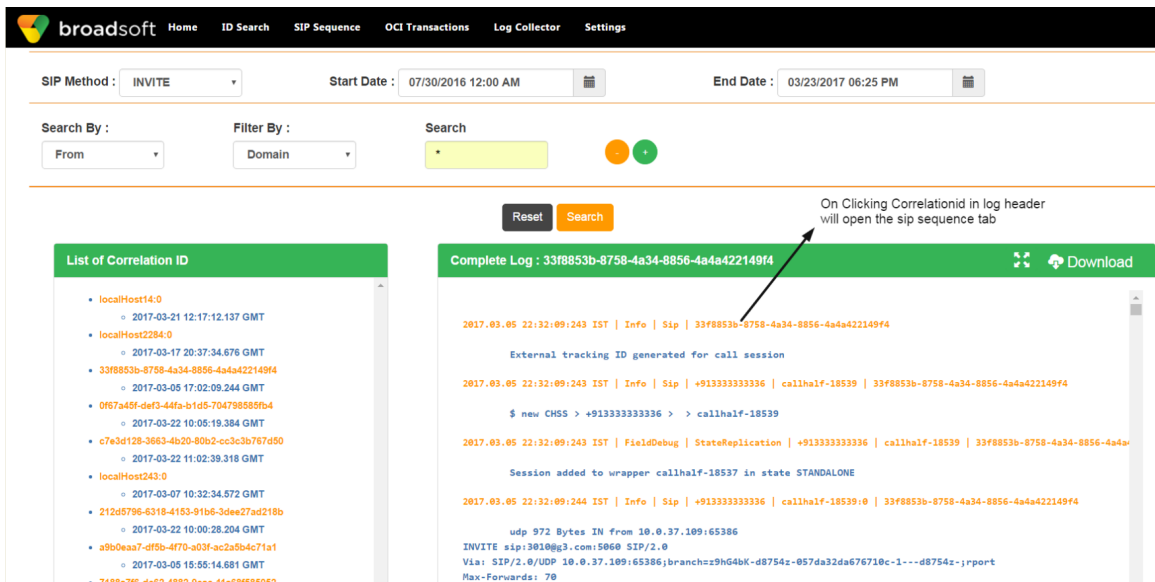
	This button searches for correlation ID Matches the given filtering condition
	This button reset to default values
	This button, remove last filter condition
	This button, add new filter condition
	This button, enables full screen reading Of complete log message
	This button, enables downloading the Complete log message

Figure 9 Buttons

### 3.5 SIP Sequence Diagram

SIP Sequence diagram [3] helps to understand the signal flow happening between the systems. It shows diagrammatic view of the important SIP call flow.

- SIP Sequence diagram can be obtained by clicking the Correlation ID in log header.
- It will open the SIP Sequence tab and display the Call Sequence Diagram.



The screenshot shows the Broadsoft dashboard interface. At the top, there's a navigation bar with links: Home, ID Search, SIP Sequence, OCI Transactions, Log Collector, and Settings. Below this, there are filters for SIP Method (INVITE), Start Date (07/30/2016 12:00 AM), and End Date (03/23/2017 06:25 PM). The main content area is divided into two panels. The left panel, titled 'List of Correlation ID', shows a list of correlation IDs with their corresponding timestamps. The right panel, titled 'Complete Log : 33f8853b-8758-4a34-8856-4a4a422149f4', displays a detailed log message. An arrow points from the correlation ID in the log header to the 'SIP Sequence' tab in the navigation bar, with a note: 'On Clicking Correlationid in log header will open the sip sequence tab'.

Figure 10 Selecting the Correlation ID from Complete Log Flow message

- Call Sequence can also be obtained by providing the Correlation Id in search box.
- You can mouse over the label to get log message for the specific event.
- SIP Call Flow can also be downloaded by clicking download button

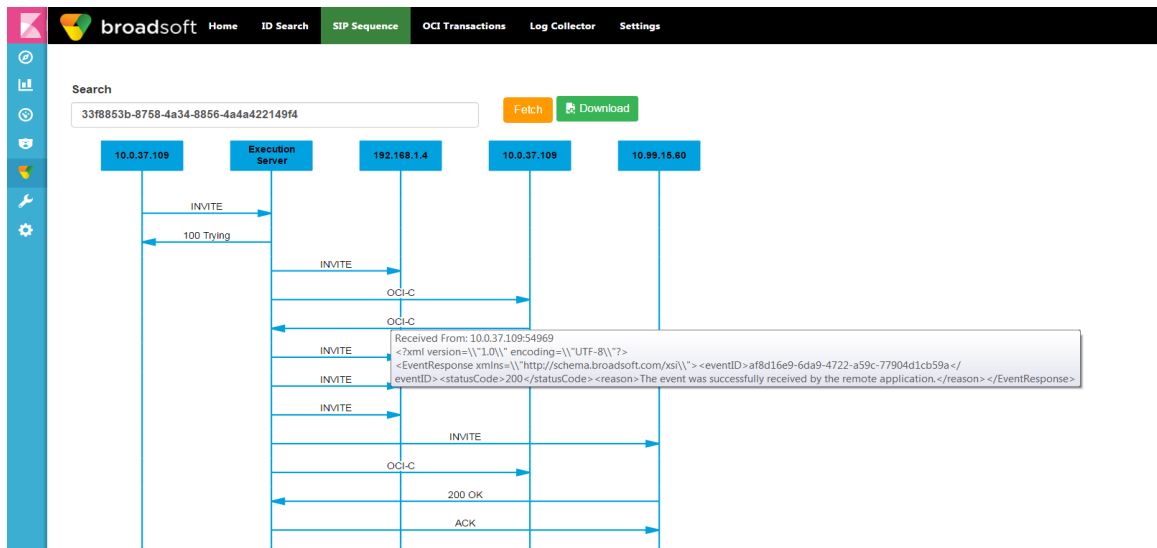


Figure 11 Displaying SIP Sequence Diagram for selected Correlation ID

- You can also get the SIP Sequence Diagram by selecting 'SIP SEQUENCE' tab
- Providing the Correlation ID in input box and press 'FETCH' button

### 3.6 Log Collector

Log Collector is utility which collects various information associated with the given correlation as single file. It does following operation

- Obtains the complete log flow for the given correlation ID
- Collects Query user and query group Transaction information
- Tech support
- List of events happened during the given correlation time interval.

Step 1) Enter the correlation ID

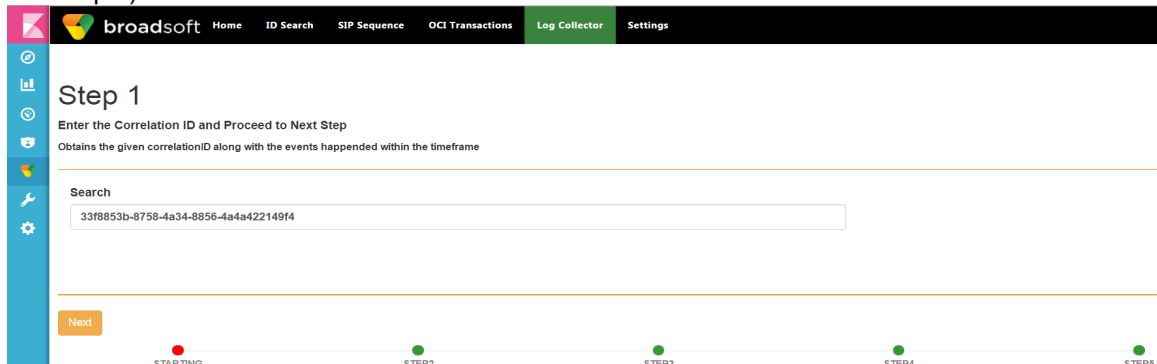
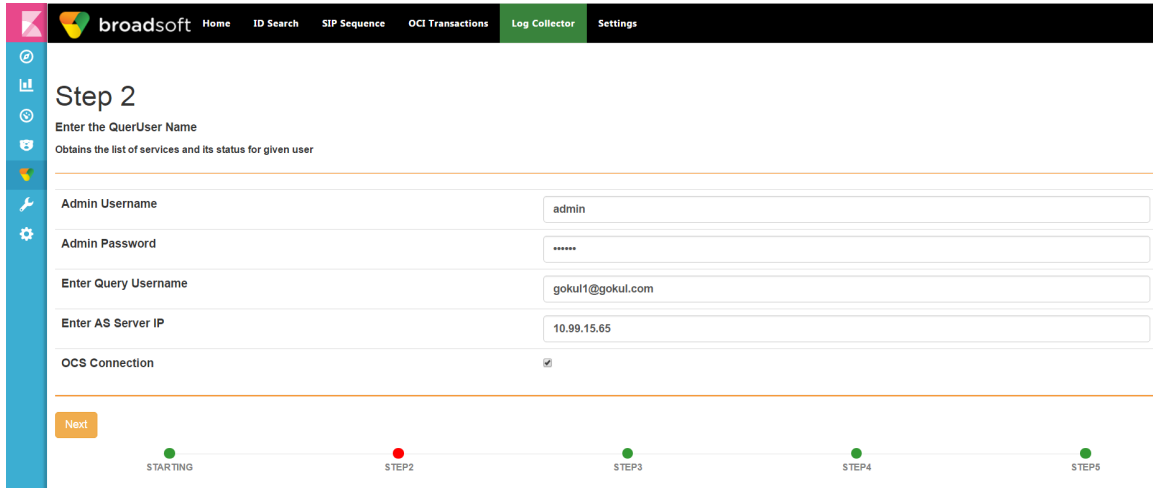


Figure 12 – Phase 1 Enter the Correlation ID

## Step 2) Enter the QueryUser Service credentials

Retrieves corresponding group and service provider/enterprise information and lists the status of all the Broadworks services for the give user ID.

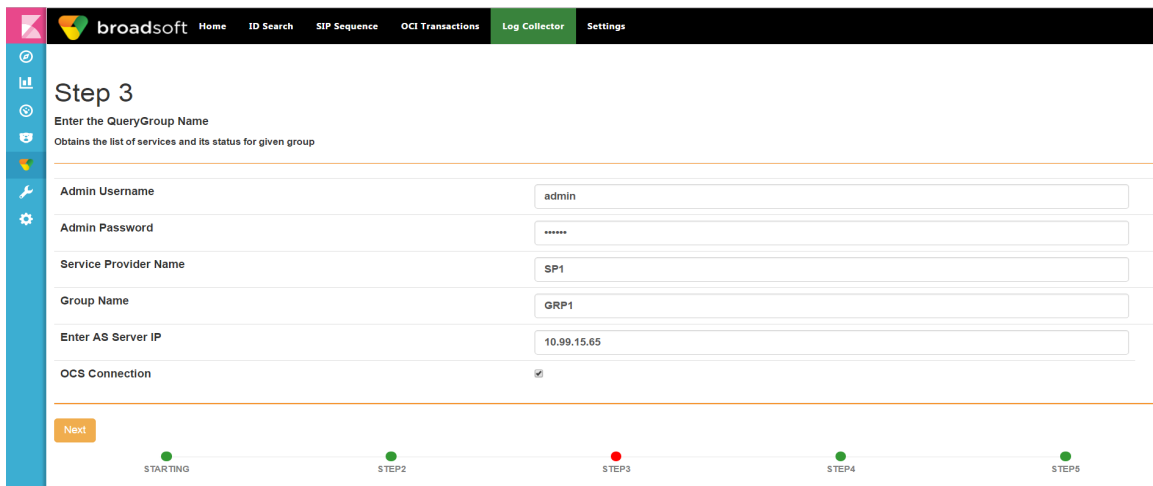


The screenshot shows the 'Step 2' form in the Broadsoft interface. The header includes the Broadsoft logo and navigation links: Home, ID Search, SIP Sequence, OCI Transactions, Log Collector (active), and Settings. The left sidebar contains icons for various functions. The main content area is titled 'Step 2' and includes the instruction 'Enter the QuerUser Name' and 'Obtains the list of services and its status for given user'. The form fields are: Admin Username (admin), Admin Password (masked with asterisks), Enter Query Username (gokul1@gokul.com), Enter AS Server IP (10.99.15.65), and OCS Connection (checked). A 'Next' button is located below the fields. At the bottom, a progress bar shows five steps: STARTING (green dot), STEP2 (red dot), STEP3 (green dot), STEP4 (green dot), and STEP5 (green dot).

Figure 13 QueryUser Form

## Step 3) Enter the Query Group credentials

Retrieves group level information, including the status of Broadworks services for the given group ID.



The screenshot shows the 'Step 3' form in the Broadsoft interface. The header includes the Broadsoft logo and navigation links: Home, ID Search, SIP Sequence, OCI Transactions, Log Collector (active), and Settings. The left sidebar contains icons for various functions. The main content area is titled 'Step 3' and includes the instruction 'Enter the QueryGroup Name' and 'Obtains the list of services and its status for given group'. The form fields are: Admin Username (admin), Admin Password (masked with asterisks), Service Provider Name (SP1), Group Name (GRP1), Enter AS Server IP (10.99.15.65), and OCS Connection (checked). A 'Next' button is located below the fields. At the bottom, a progress bar shows five steps: STARTING (green dot), STEP2 (green dot), STEP3 (red dot), STEP4 (green dot), and STEP5 (green dot).

Figure 14 QueryGroup Form

Step 4) Enter the Tech Support credentials.

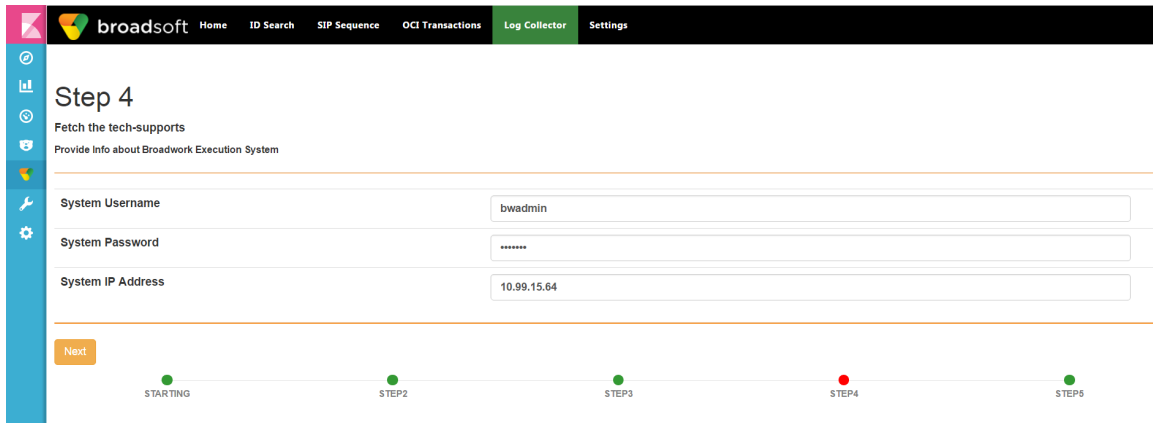


Figure 15 TechSupport Form

Step 5) Press Finish now

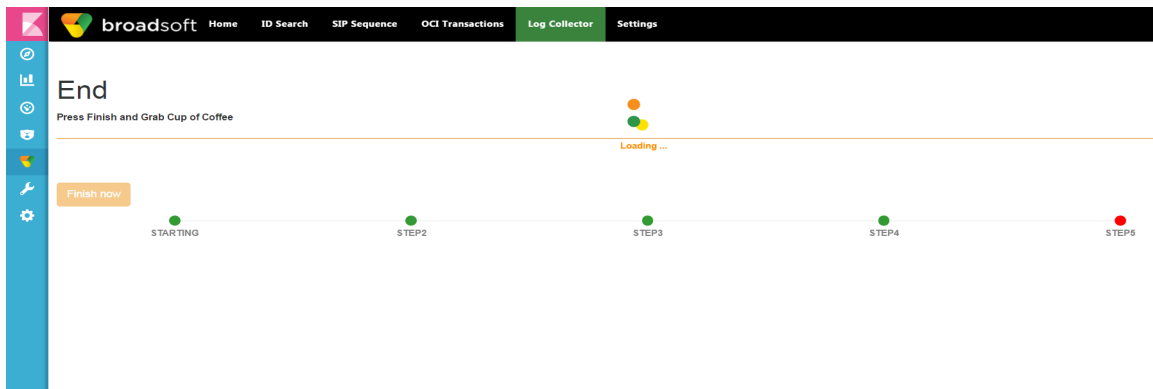


Figure 16 Final Wizard to collect Logs

### 3.7 Tribe Node Configuration

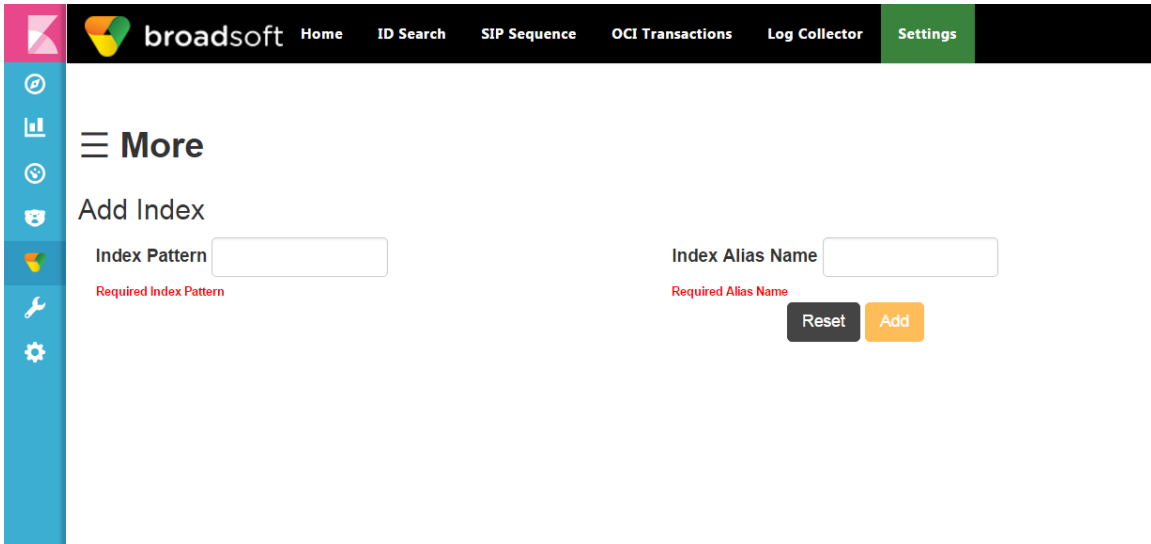
Tribe Node allows to access Elasticsearch instance located at various data center. To use tribe node we need to set index name pattern of various data center Elasticsearch instance[4].

Setting page allows performing following actions

- Adding the Index Pattern
- Selecting Index Pattern
- Updating Index Pattern
- Removing Index Pattern

### 3.7.1 Adding Index Pattern

On clicking Settings tab, it takes to adding Index Pattern



The screenshot shows the Broadsoft dashboard with the 'Settings' tab selected. On the left, a 'More' menu is open, showing 'Add Index' as the selected option. The main content area has two input fields: 'Index Pattern' and 'Index Alias Name'. Below each field is a red error message: 'Required Index Pattern' and 'Required Alias Name'. At the bottom right of the form are 'Reset' and 'Add' buttons.

Figure 17 Adding Index Pattern

Provide the index pattern and index alias name for each example.

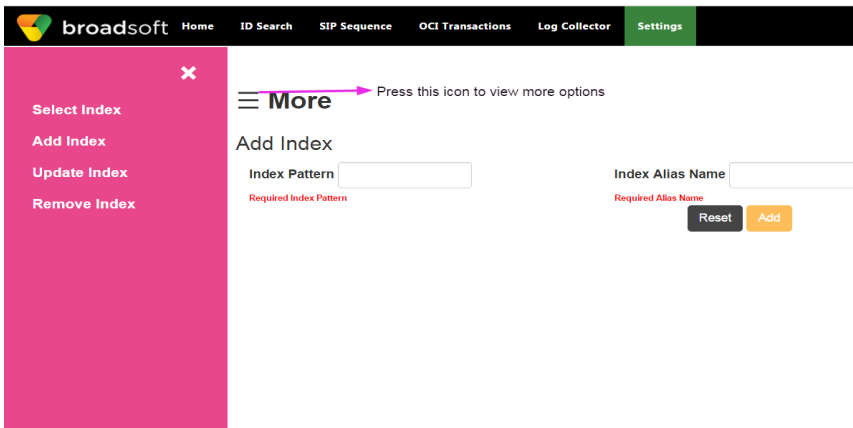
S. No	Index Pattern	Index Alias Name
1	bwlog-t31as21-usa-broadsoft-com-20170309	USA
2	bwlog-t31as21-aus-broadsoft-com-20170309	AUS
3	bwlog-t31as21-chn-broadsoft-com-20170309	CHN

Table 1 Index Pattern and Index Alias Example

After entering click on Add button to add Index pattern.

### 3.7.2 Switching the Actions

You can switch to other action in setting page by pressing the Icon near the more option.



The screenshot shows the 'More' menu open on the left side of the 'Add Index' form. The menu has a close button (X) at the top and four options: 'Select Index', 'Add Index', 'Update Index', and 'Remove Index'. A pink arrow points from the 'More' text to the menu. The main form area is the same as in Figure 17, with input fields for 'Index Pattern' and 'Index Alias Name', error messages, and 'Reset' and 'Add' buttons.

Figure 18 Choosing More Option



You can close the option by pressing close button in top right.

### 3.7.3 Selecting Index Pattern

You can choose '**Select Index**' to select index pattern page, which allows selecting index pattern while searching from SIP APP

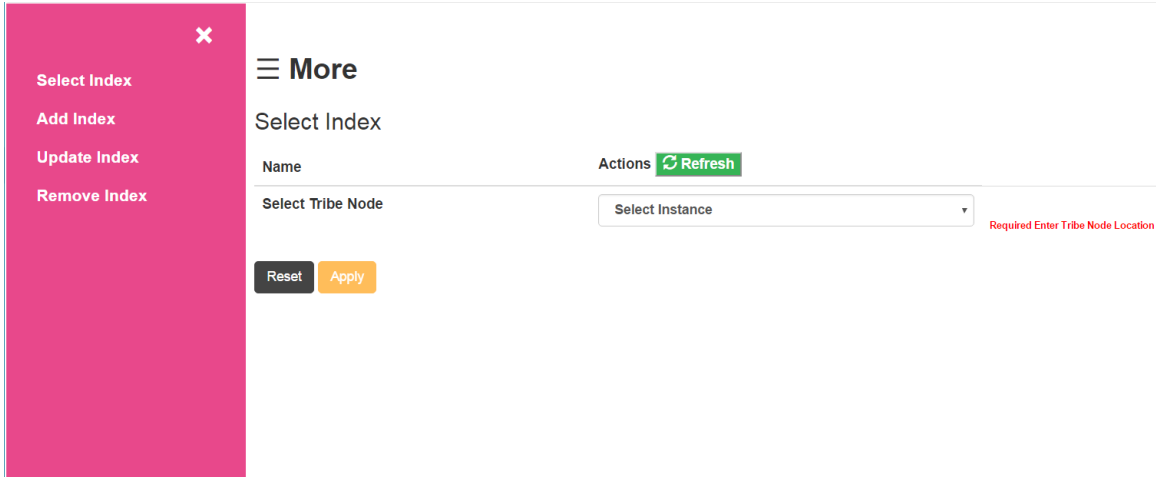


Figure 19 Select Index Patten Page

Press 'Refresh Button' to get the list of Index Pattern available and once you select you can press Apply button to make changes.

### 3.7.4 Updating Index Pattern

Index Alias name can be updated using Update Index Pattern.

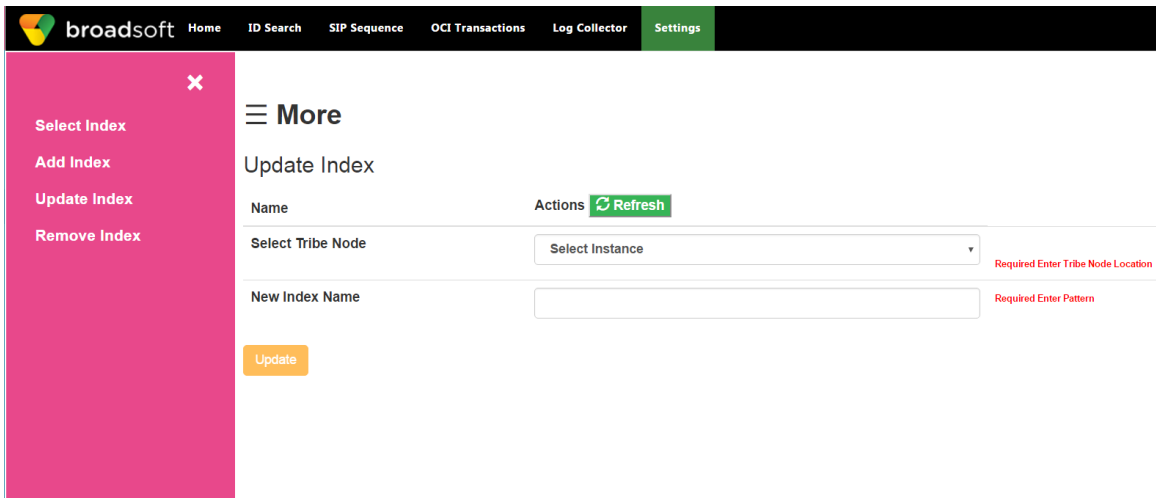


Figure 20 Index Alias Pattern

Note: Only Index Alias name can be updated, not the direct tribe node pattern itself

### 3.7.5 Removing Index Pattern

Index Pattern can be removed using Remove Index Page.

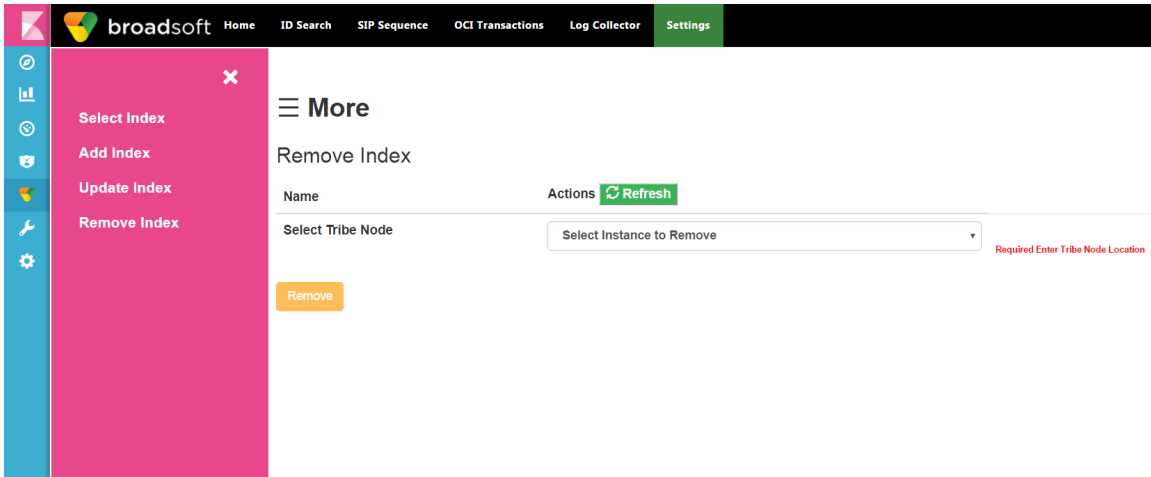


Figure 21 Removing Index Pattern

### 3.8 XSI Analyzer

Select the XSI Analyzer plugin. The following window will be displayed.

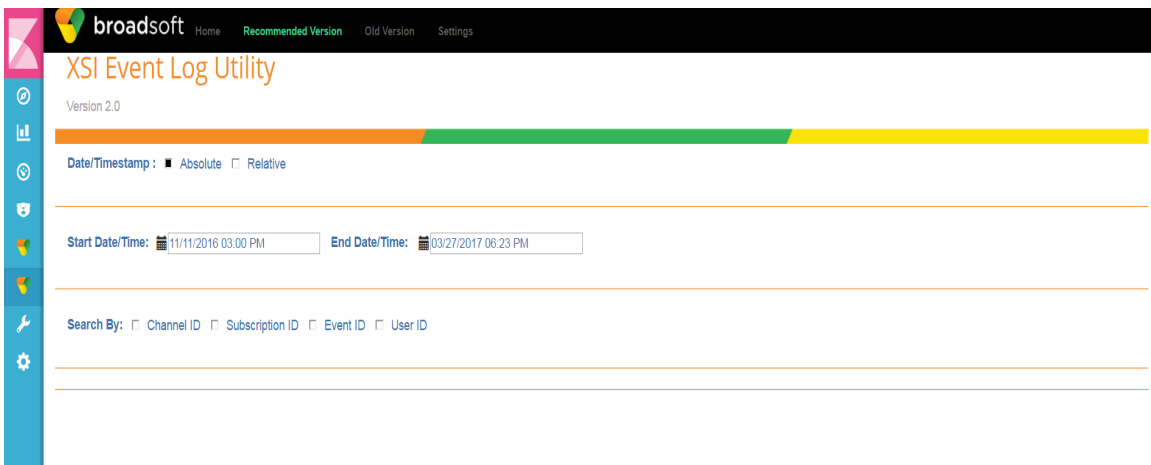


Figure 22 XSI Event Main Page

The same type of options are available. Selecting an Absolute time or timeframe or a relative timeframe. The options following that is to search a User ID/Event/Channel or Subscription ID. Also we have Filter By option to select the type of messages to be displayed.

We can also land up in XSI Event Plugin by clicking on Channel ID/Subscription ID/Event ID displayed in the logs of SIP Analyzer.

A sequential flow of Channel messages, Subscription Messages and Event Messages will be displayed by selecting all type of messages in Filter By column.

We can view the plugin in full screen by clicking on the full screen option. Option to download the log is also available.

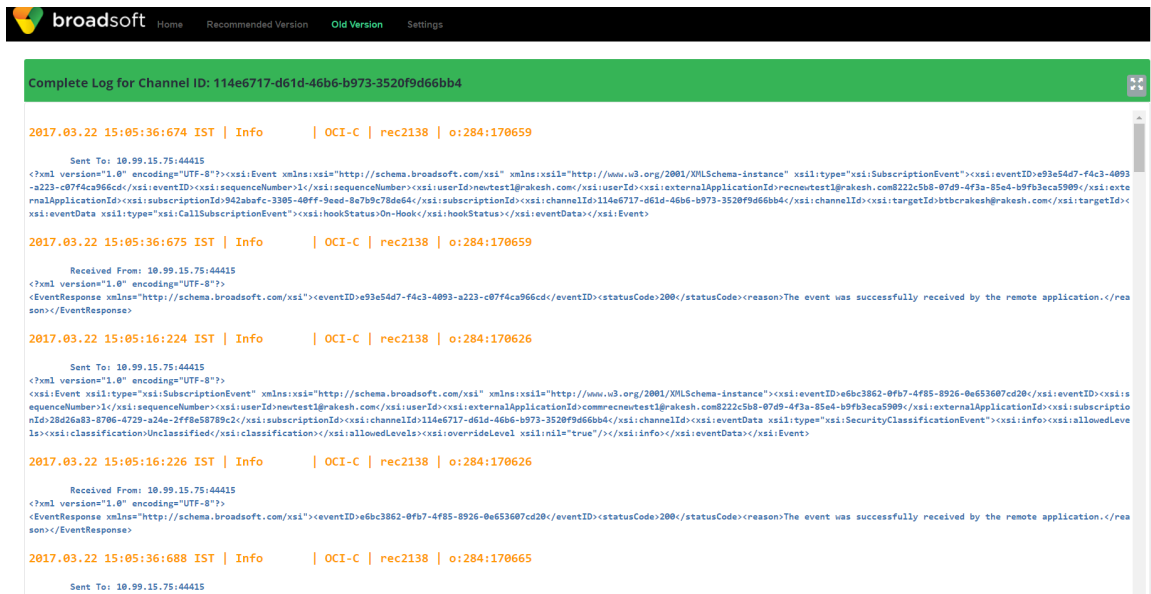


Figure 23 Full screen view of XSI Event plugin

The Old version of XSI Event plugin contains options namely Channel ID and/or Subscription ID, User ID and/or Event ID, User ID and/or Event Name, Correlation ID. In case of User ID and/or Event ID, User ID and/or Event Name, Correlation ID the left pane displays the list of Channel IDs and right pane its corresponding logs.

In case of Channel ID and/or Subscription ID the left pane displays the list of Correlation IDs and right pane its corresponding logs.

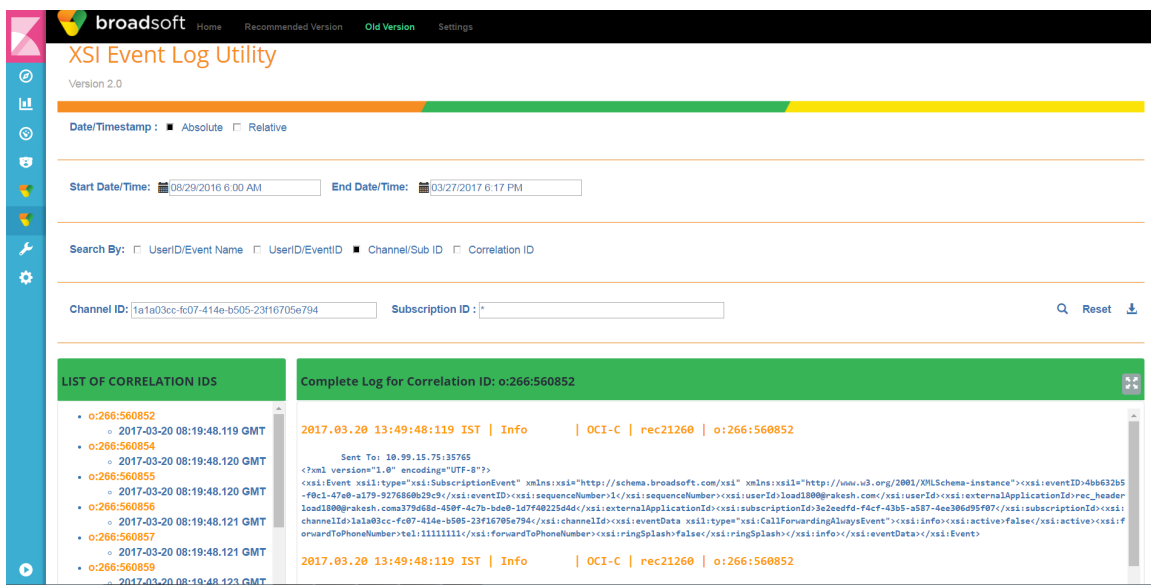


Figure 24 Old Version

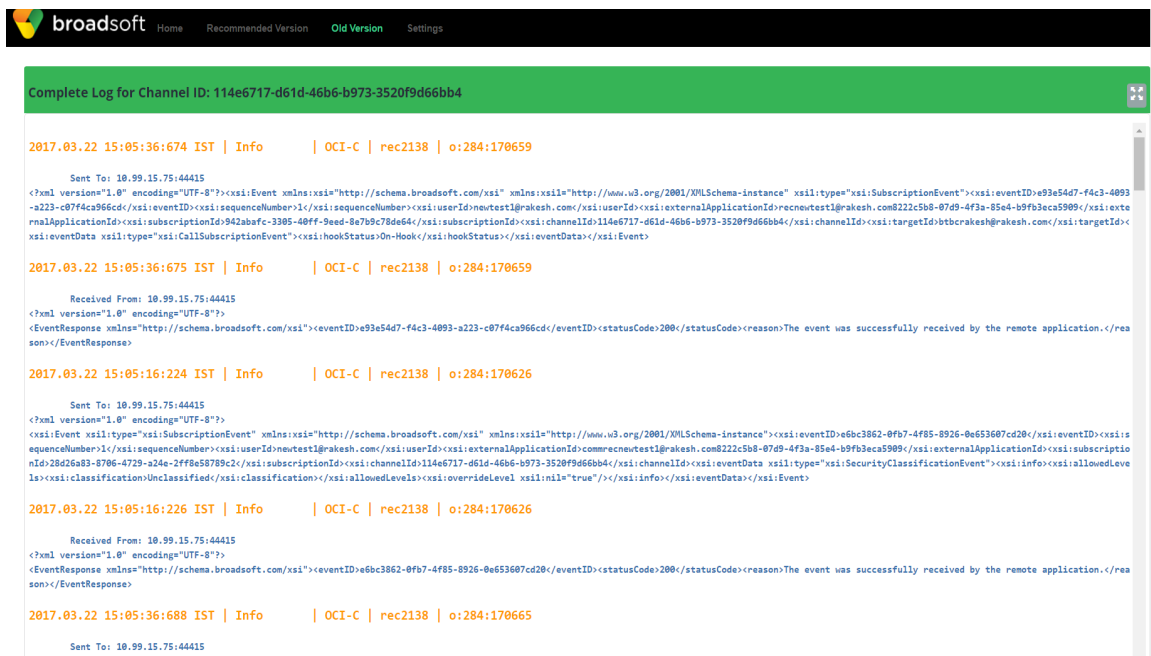


Figure 25 Full screen view in case of old version

Tribe node settings for XSI Event Plugin can be configured through Settings option.

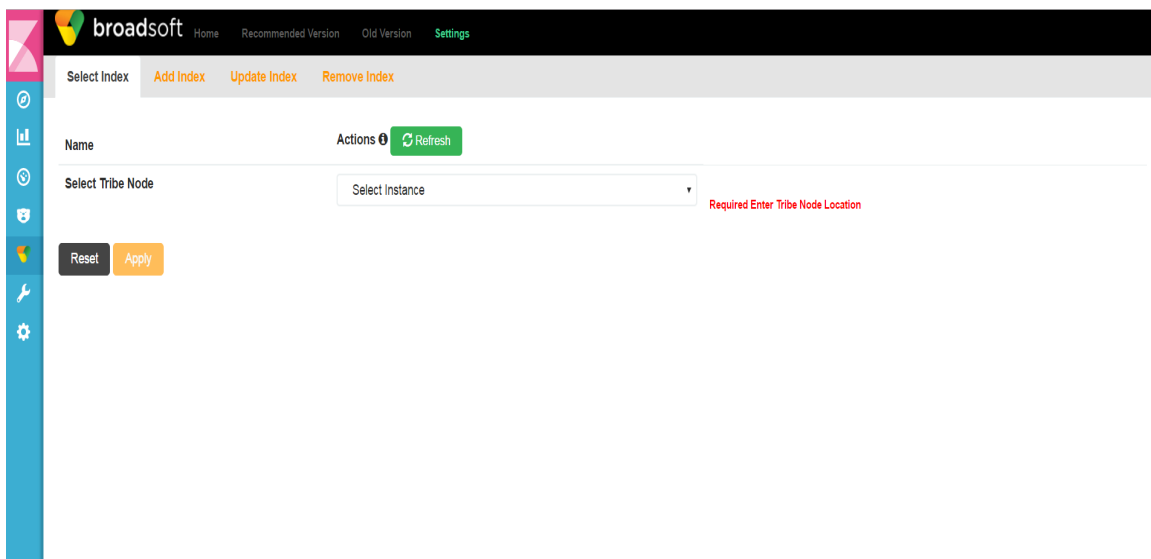


Figure 26 Settings page of XSI Event plugin

## Acronyms and Abbreviations

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This section lists the acronyms and abbreviations found in this document. The acronyms and abbreviations are listed in alphabetical order along with their meanings.

### Example

The following is an example of a list of acronyms and abbreviations.

SIP	Account/Authorization Code
BDD	Broadworks Discovery and Dashboard
XSI	Augmented Backus-Naur Form
OCI	Open Client Interface
OCI-C	Open Client Interface-Call Control
OCI-P	Open Client Interface-Provisioning
OCI-R	Open Client Interface-Reporting
URI	Uniform Resource Identifier
URL	Uniform Resource Locator
VMS	Voice Mail System
VoIP	Voice Over Internet Protocol
XML	eXtensible Markup Language
XS	Execution Server
XSD	XML Schema Definition
Xsi	Xtended Services Interface
Xsp	Xtended Services Platform

## References

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### Examples

- [1] Kibana User Guide [5.2] | Introduction| Elastic  
<https://www.elastic.co/guide/en/kibana/current/introduction.html>.
- [2] List of SIP request methods. (2016, September 21). In Wikipedia, The Free Encyclopedia. Retrieved 07:34, March 27, 2017, from  
[https://en.wikipedia.org/wiki/List\\_of\\_SIP\\_request\\_methods](https://en.wikipedia.org/wiki/List_of_SIP_request_methods)
- [3] RFC 3665 - Session Initiation Protocol (SIP) Basic Call Flow Examples  
<https://tools.ietf.org/html/rfc3665>.
- [4] Tribe node | Elasticsearch Reference [5.2] | Elastic  
<https://www.elastic.co/guide/en/elasticsearch/reference/current/modules-tribe.html>.