



V-Spark Review and Analysis Guide

Version 4.0

July 2020

Abstract

This document explains monitoring, searching, and analyzing transcribed audio files using applications and reports in V-Spark.

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Introduction to V-Spark

The purpose of the V-Spark system is to provide a powerful yet intuitive interface for transcribed audio data. With this speech analytics solution, you have a bird's eye view of overall call statistics, and the ability to specialize the metrics. You can search for words or phrases in the database of transcripts, and pull up any call's audio and transcript to follow the text as you listen.

Intended Audience

This information was written for V-Spark users with view permissions for a company or organization. No specialized knowledge of speech analysis or programming is required.

Tools You Will Need

Here's what you need to get started:

- A desktop or laptop computer with a secure power supply and a fast, reliable network connection
- The latest version of the Google Chrome web browser installed on that computer
- The IP address of your V-Spark server, and the username provided to you when your account was registered with the system

Monitoring Your Calls

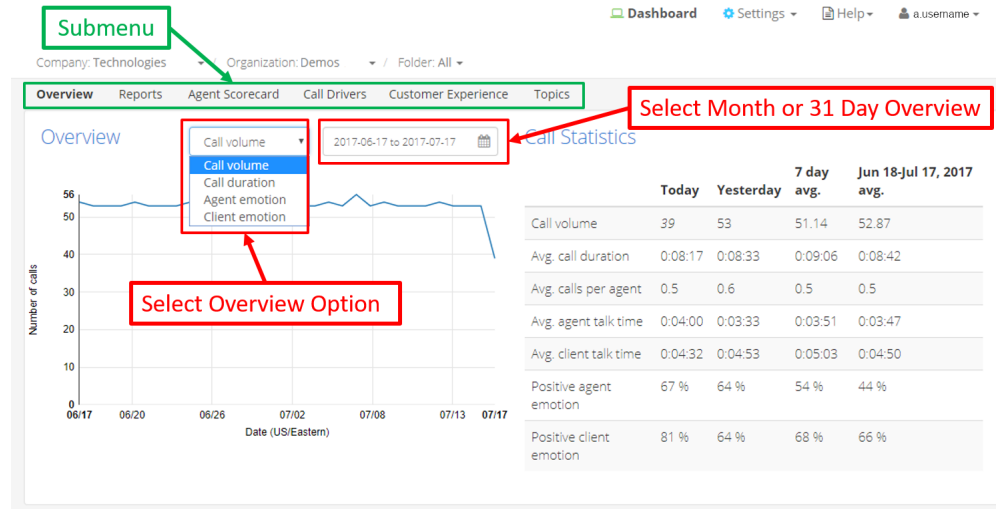
V-Spark enables you to monitor your incoming calls and gives you both textual and visual analysis of your audio data. This section will show you the different mechanisms for demonstrating current patterns and forming predictions.

Long-Term Vision: Overview Chart

On the **Dashboard**, choose **Overview** from the submenu to view a graph of call information over time, and determine patterns in your call data.

V-Spark provides several ways to examine data that has already processed.

Figure 1. V-Spark Dashboard Overview



- 1 Select the company, organization, and folder to view, then choose Overview from the submenu.
- 2 Select the date range for the Overview. This defines the horizontal axis of the graph. Choose one of these options:
 - **Last Month Overview** - If there is data in the last month, the graph will display that date range by default. The number of calendar days that are considered part of this range will vary based on the length of the current month. The date picker contains a quick link to return to this view after exiting.
 - **Calendar month** - If there is no data in the last month, by default the graph will display the last calendar month with data. The date picker enables you to select any calendar month. To help you identify months containing data, days with data are displayed with enlarged numbers.

3 Select options from the drop-down menu to use different graph types to view your data. Select from:

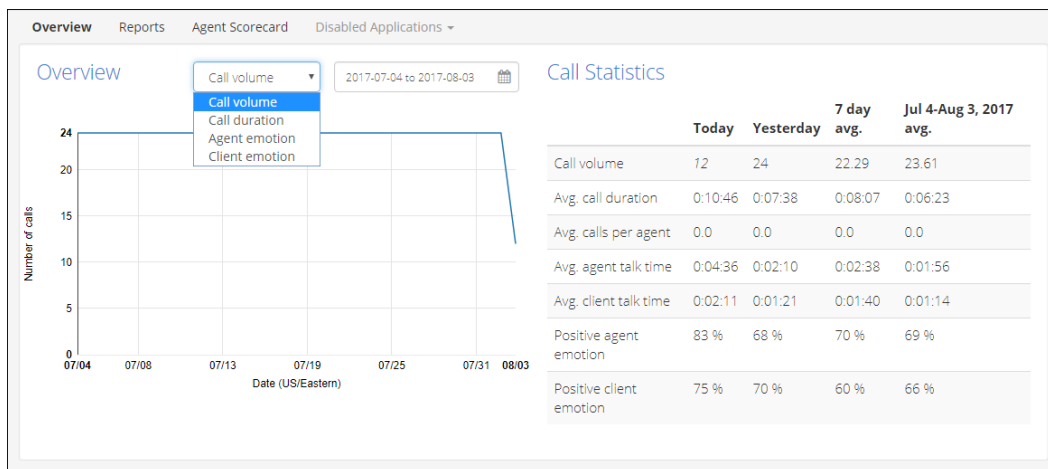
- Call volume
- Call duration
- Agent emotion
- Client emotion

Short-Term Analysis: Call Statistics & Daily Charts

Depending on the Overview drop-down option selected, either a **Call Statistics** or **Daily Charts** section is shown to the right of the Overview chart.

Call Volume

Figure 2. Call Volume



Call Statistics shows the stats over the last month across several metrics related to call volume. These include:

- Call volume
- Avg. call duration
- Avg. calls per agent
- Avg. agent talk time

- **Avg. client talk time**
- percentage of **Positive agent emotion**
- percentage of **Positive client emotion**

The default view displays information for the following time periods: **Today**, **Yesterday**, **7 day avg.**, and **last month**. For the last month average, the date range is displayed. If a specific calendar month is selected, then selected month and year are displayed.

Clicking a different point on the graph changes **Today** to the date selected, and **Yesterday** changes to **Previous Day**.

7 day average is calculated based on the last 7 days, including the selected date. **Month average** is calculated to include all days in the selected date range.

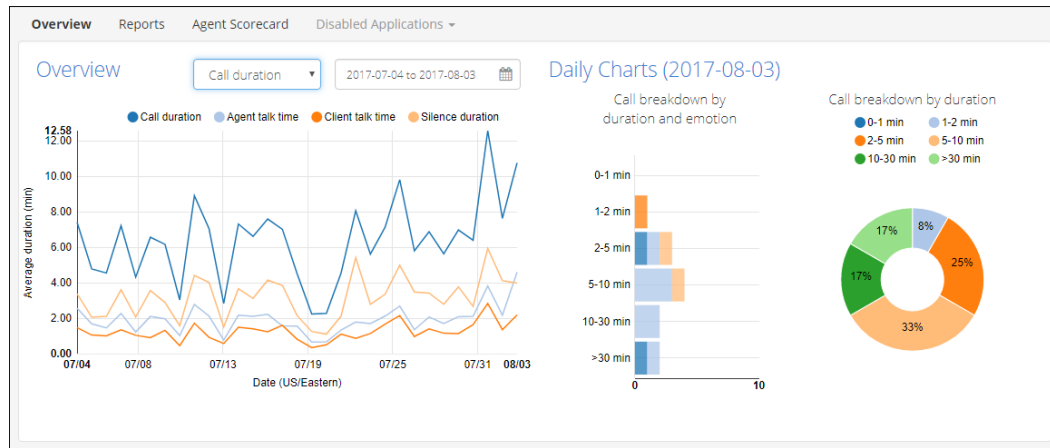
Figure 3. Default view after selecting a month

	Today	Yesterday	7 day avg.	Aug 2017 avg.
Call volume	--	--	--	23.61
Avg. call duration	--	--	--	0:06:23
Avg. calls per agent	--	--	--	2.0
Avg. agent talk time	--	--	--	0:01:56
Avg. client talk time	--	--	--	0:01:14
Positive agent emotion	--	--	--	69 %
Positive client emotion	--	--	--	66 %

After selecting a month via the date picker, only the month’s average will be populated in the default view as seen above. The rest of the statistics will be populated when a date is selected by clicking a data point on the graph.

Call Duration

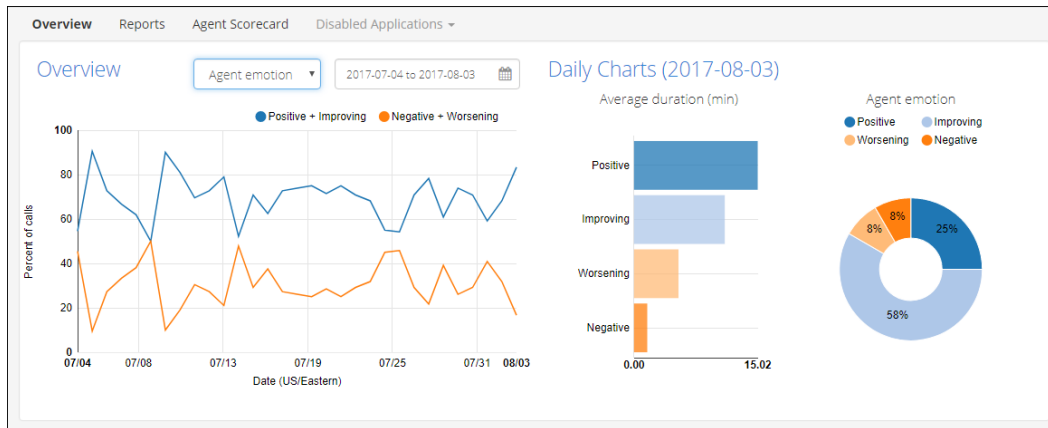
Figure 4. Call Duration



The Overview chart can be clicked to display the daily call breakdown. Daily Charts include a histogram of calls by call duration and emotion and also duration by percentage of overall calls. Emotion is broken down into four groups: Positive, Improving, Negative, and Worsening. Each call falls into one emotion group. Clicking on the Daily Chart graphs will trigger a search in the Files view below.

Agent Emotion

Figure 5. Agent Emotion

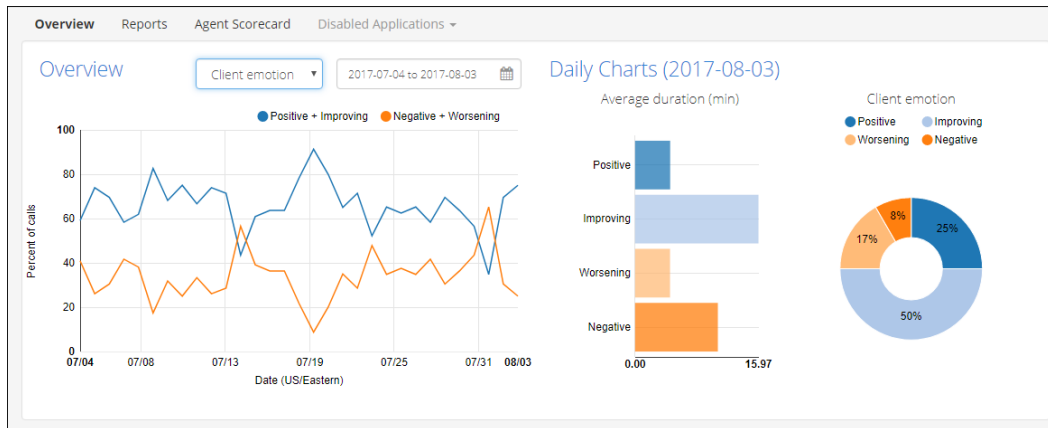


The Overview chart can be clicked to display the daily agent emotional state. Daily Charts include average call duration by emotion and percentage of calls of a given emotion. Clicking on the Daily Chart graphs will trigger a search in the Files view below. Emotion values include:

- percentage of calls with **Positive and Improving agent emotion**
- percentage of calls with **Negative and Worsening agent emotion**

Client Emotion

Figure 6. Client Emotion



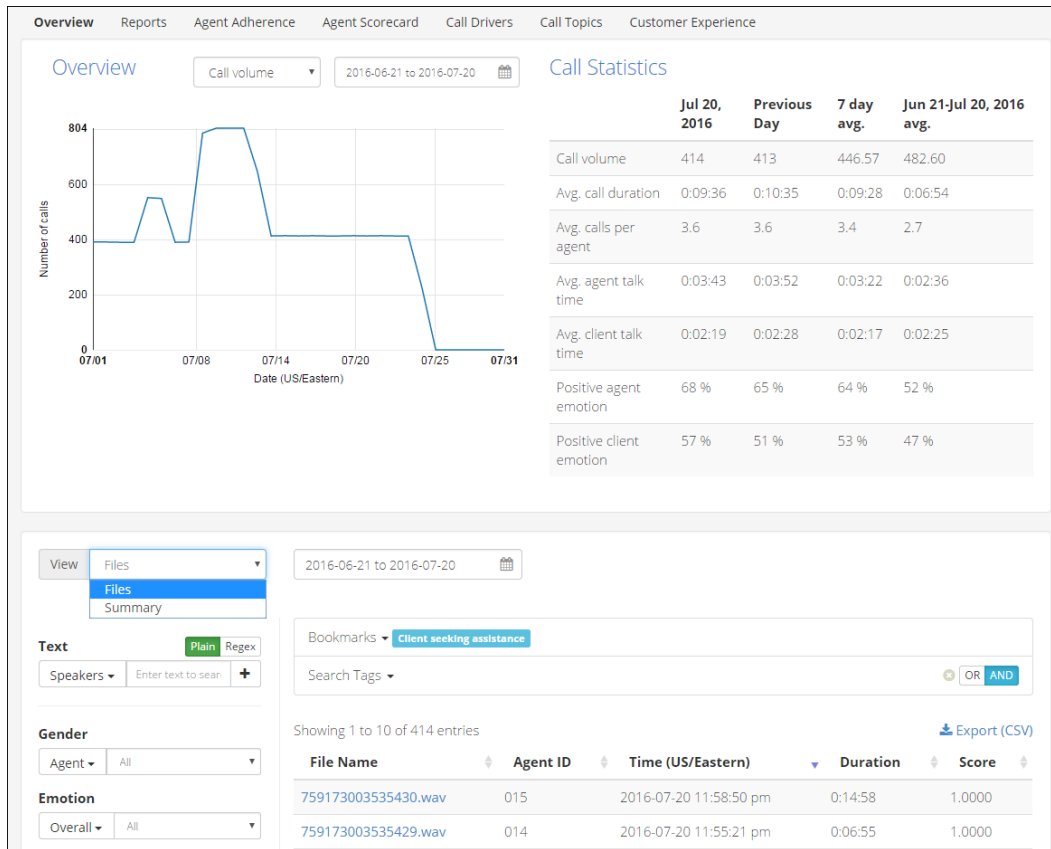
The Overview chart can be clicked to display the daily client emotional state. Daily Charts include average call duration by emotion and percentage of calls of a given emotion. Clicking on the Daily Chart graphs will trigger a search in the Files view below. Emotion values include:

- percentage of calls with **Positive and Improving** client emotion
- percentage of calls with **Negative and Worsening** client emotion

Views

While the **Overview** provides high-level visualizations of the audio, the **Views** section allows the user to interact with the data on the level of individual calls, clients, or dates. There are two types of views: the **Files View** and the **Summary View**. Each view provides a close-up look at the files through a variety of metrics over a customizable date range. Select a view by clicking on the drop-down menu next to **View**, below the chart on the **Overview** screen.

Figure 7. Dashboard Overview View Options



Summary View

The Summary View displays a table with call statistics by day. The available metrics are the same as those shown in the Call Statistics table ([Call Volume](#)), and include the following:

- Call volume
- Average call duration
- Average agent talk time

- Average client talk time
- Positive agent emotion
- Positive client emotion

Clicking on a date takes the user to the Files View ([Files View](#)), with the date picker set to include only calls from that date.

Figure 8. Summary View

Date	Call volume	Avg. call duration	Avg. agent talk time	Avg. client talk time	Positive agent emotion	Positive client emotion
2017-09-25	5	0:09:52	0:02:57	0:02:43	60 %	40 %
2017-09-26	6	0:12:10	0:03:47	0:03:21	100 %	83 %
2017-09-27	5	0:06:12	0:02:23	0:01:32	100 %	50 %

Showing 1 to 3 of 3 entries

Files View

The **Files View** enables you to search for, view, filter, and manage individual audio files. Search filters can constrain results on an ad-hoc basis.

File Name	Agent ID	Time (US/Eastern)	Duration	Silence Time	Overtalk	Overall Emotion	Agent Emotion	Score
759173003539100.wav		2019-08-09 11:29:24 am	0:15:28	33.55%	14.29%	Positive	Positive	1.0000

- 1 The **left sidebar** filters search results based on specified attributes. Note that search terms can be either plain text or regular expressions.
- 2 The **date dropdown** filters results by recording date.
- 3 The **bookmarks** section enables you to save search terms.

- ④ The **search terms section** shows the terms that are currently being used to filter the file list.
- ⑤ The **bulk tagging toggle** shows or hides a toolbar that allows you to select multiple files and then to add or remove tags from the selected files.
- ⑥ The **search results section** displays metadata columns for each of the files returned by your search.
- ⑦ The **export button** enables you to save search results in .CSV format. Use the export dialog to filter the files and metadata fields to be included in the exported file.
- ⑧ The **show/hide columns button** enables you to select metadata columns to show or hide in the search results section.
- ⑨ The **delete button**, located on the rightmost side of each search result row, enables you to remove individual files from the system. Once you click the x and confirm the removal, V-Spark queues the file for deletion. A system under heavy load may take several minutes to fully delete the file, but this situation is unlikely.

File Details page

Clicking on a file in the [Files View](#) list takes you to the **File Details** page which provides an overview of the selected audio file.

File Details Tab

Figure 9. File Details

The screenshot displays the File Details page for the audio file 759173003539435.wav. The interface includes a playback control (1) at the top left, download options (2) for MP3, JSON, and Text, and a transcript (3) on the right. The transcript shows a search term 'Alright, good day long out.' (4) highlighted in red. The left sidebar contains metadata such as Recording Date (Friday, March 23, 2018, 2:00:01 AM EDT), Transcript ID (27765), Request ID (ccdb102f-faee-4e3d-b1ee-70718de351c6), and controls for Show Emotion and Skip Silence. The duration is 0:19:48 and the silence percentage is 49.1%.

The controls on this page enable you to:

- ① Play the entirety of the audio file, use the slider, or navigate to specific moments by clicking on a section of the transcript.
- ② Download the file in audio MP3 format, and the transcript in text or JSON formats.
- ③ Read the transcript, taking advantage of highlighted search terms.

④ Select tabs to switch between viewing File Details including call metadata and emotion, Application Scores, and Tags.

When folders are created, folder options define what type of audio will be added to the folder and how the audio should be broken down in the transcript.

- Transcripts of two-channel, stereo audio with one speaker on each channel are divided into "speaker turns" that show you who was speaking during each part of the transcript.
- Transcripts of one-channel, mono audio files with a single speaker are broken up into "utterances" to make them easier to read and to simplify drilling down into a single utterance.
- Transcripts of one-channel, mono audio files with two speakers may display speaker turns due to V-Spark's "diarization" feature. However, if diarization does not detect multiple speakers to trigger different speaker turns, the transcript will display all audio as a single speaker, broken up into utterances.

Highlighted areas within a transcript use different colors to indicate the following:

- **green** - positive emotion identified
- **grey** - both positive and negative emotional content
- **red** - negative emotion identified
- **(none)** - no detectable emotion

Bold words in the transcript identify those words or clauses that have emotional content.

Clicking on a section of the transcript will also allow you to listen to the audio at that point in the conversation. The audio player skips over sections of silence longer than 10 seconds when **Skip Silence** is turned on. In the previous screenshot, **Show Emotion** is ON and **Skip Silence** is OFF.

For 2-channel audio calls that receive an overtalk score greater than 0%, the score is highlighted by blue text. When speaker overtalk occurs within a transcript, the affected speaker turns will display a solid blue border on the left-hand side so that they can be easily spotted and reviewed if necessary.

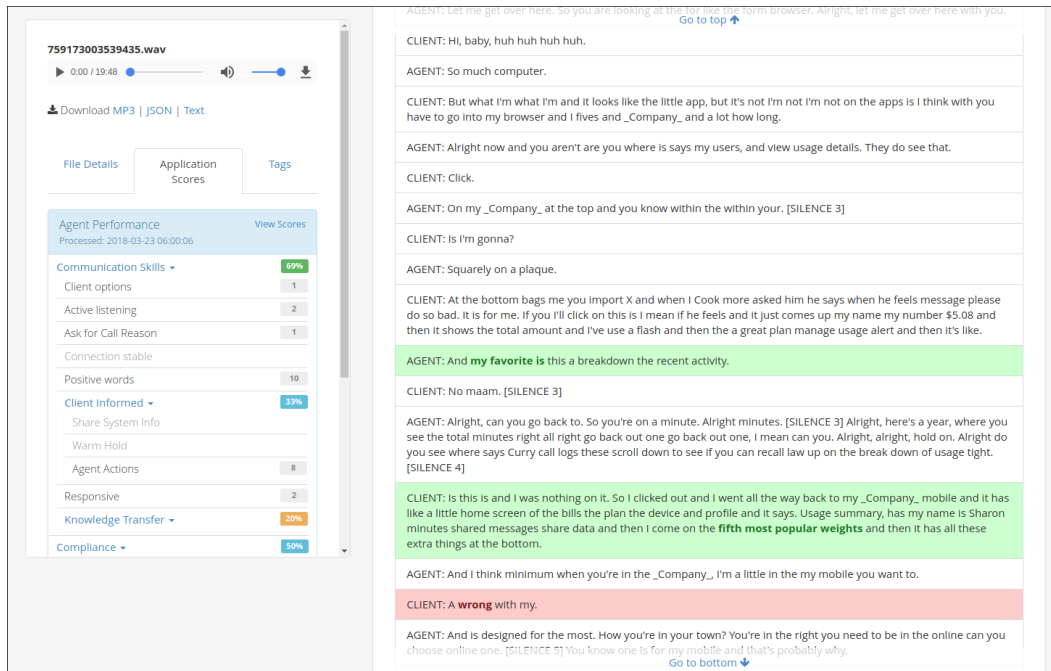
If you navigate to the File Details page after conducting a search, your search terms appear highlighted in yellow, and arrows on the right hand side enable you to navigate between instances of your search terms.

Silence time is visualized in the transcript as [SILENCE (*length of silence in seconds*)]. For example, [SILENCE 4] indicates 4 seconds of silence. Only silence lasting longer than 3 seconds will be marked. You can filter calls based on the percentage of silence time using the **Call Silence Time** slider in the Files View of the Dashboard. See [Filter Searches](#) for more details.

Application Scores Tab

Application scores are also accessible for individual call transcripts. If there are multiple applications with scores for the file, they will all be displayed in the side panel.

Figure 10. Application Scores



Selecting an application category will allow you to drill down into lower-level categories. For leaf-level categories you will see the Count scores listed to the right. Clicking on that number will highlight the instances of that category's phrases in the transcript.



NOTE

Count scores are the number of matches at the leaf-level. They may not always match the number of highlighted phrases. More information about count scores can be found in the V-Spark Application Development Guide.

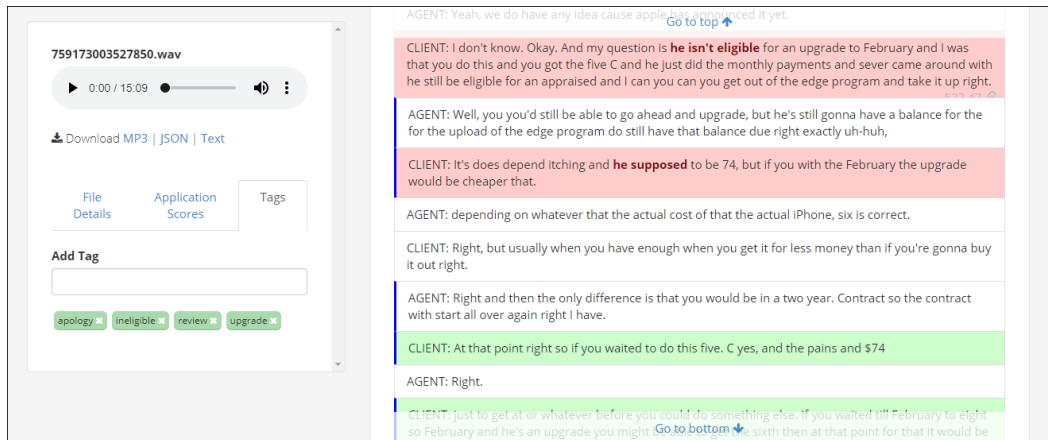
For more information about viewing application scores. see [Viewing Application Scores](#).

Tags Tab

V-Spark enables you to identify specific transcripts or the results of previous searches by adding a logical label called a **tag** to the transcript's file details. You can then search for transcripts that are associated with that tag. Tags are displayed on the **Dashboard** beneath the **File Name**.

Apply tags to multiple files in bulk using the **Bulk tag toolbar** on the **Dashboard** (see [Tagging Multiple Search Results](#)). Modify the tags associated with an individual file using the **Tags** tab on the File Details page.

Figure 11. Tags



Add a tag to the file by typing the name of the tag into the **Add Tag** field. As you type, tags that contain letters that you have previously typed and are already applied in other files will be displayed in a menu below the field. Choose one of these tags to complete the tag, or finish typing to complete a new tag, then press **Enter** to add the tag. V-Spark will display "Tag added successfully!" beneath the **Add Tag** field, and the tag will be visible in the list of tags.

You may add a maximum of 100 tags to any file. Tag names may not contain punctuation or other special characters, but may contain any combination of numbers and letters.

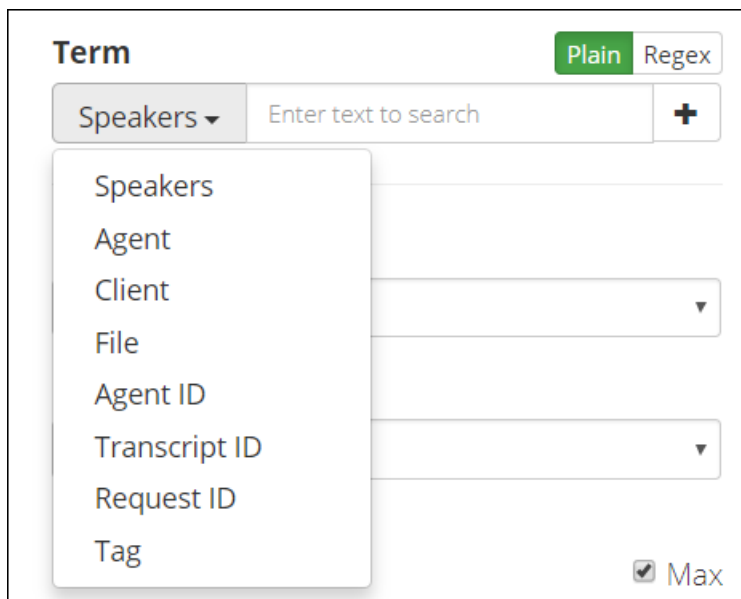
Remove a tag from the file by selecting the **x** button on the tag you want to remove. The tag will be removed in the list of tags, and V-Spark will display "Tag removed successfully!" beneath the **Add Tag** field.

Searching Your Files

The Files View ([Files View](#)) provides a function for searching your files. This section discusses how to perform **Plain Text** and **Regular Expression** searches, perform **Metadata** searches, perform **OR/AND** searches, **Bookmark** search terms, and filter through results.

Plain Text and Regular Expression Search

Figure 12. Search Term Input



The screenshot shows a search interface with the following elements:

- Term**: The search input field.
- Plain/Regex**: A toggle button at the top right, with 'Plain' selected (green) and 'Regex' (orange).
- Speakers**: A dropdown menu on the left of the input field, currently showing a list of search categories: Speakers, Agent, Client, File, Agent ID, Transcript ID, Request ID, and Tag.
- Enter text to search**: The placeholder text inside the search input field.
- +**: A plus sign icon to the right of the input field.
- Max**: A checkbox at the bottom right of the search area, which is checked.

The search term input field supports both the *Plain and Regex* (Regular Expression) text search methods. The desired type of search is selected using the green/orange **Plain/Regex** toggle button at the top right of the search field. Plain search can consist of words or phrases and can use the special characters shown in [Plain Text Search](#), while regex searches only search a single word and support the special characters discussed in [Regular Expression Search](#).



NOTE

All dashboard searches are case insensitive.

The search function can be used to search for words, phrases, or regular expressions. The search can be applied over all turns in all transcripts, the agent speaker turn or the client speaker turn of transcripts, as well as by File Name, Agent ID, Tag, Transcript ID, Request ID, and any custom metadata fields that have been configured for the folder. This type of filtering is selected using the drop-down menu to the left of the search text box, and is discussed in the next section.

Search Fields and Default Values

The **Plain/Regex** toggle button determines how a search is performed based on the text and special characters that you enter. The **Term** drop-down enables you to identify the field within a transcript that is searched for the specified value. Different fields are different data types, and therefore have built-in defaults for how they are searched. The fields on the **Term** drop-down and their associated default search behavior are the following:

- **Speakers** - searches within strings that have been identified as any spoken text in the transcript, both **Agent** and **Client**.
- **Agent** - only search within strings that are identified as **Agent** speech in the transcripts.
- **Client** - only search within strings that are identified as **Client** speech in the transcripts.
- **File** - enables you to search file names, and automatically includes a '*' wildcard on either side of the term that you are searching for. This will match any file names that contain the search term as a substring.
- **Agent ID** - searches within any strings that have been identified as the *Agent ID* field in custom metadata that you provided
- **Transcript ID** - an integer value that can only be searched for explicitly. No special characters are permitted.
- **Request ID** - a string value that can be searched for explicitly or using the special characters that are associated with the type of search that you are performing.
- **Tag** - a string value associated with a file that can be searched for explicitly or using the special characters that are associated with the type of search that you are performing.
- **custom metadata fields** - searches within any strings that have been identified as fields in any custom metadata that you provided. These custom metadata fields are folder-specific, and a list of them is appended to the bottom of the **Term** drop-down.

Plain Text Search

Plain text search may be used to search for single or multi-word phrases, while a regular expression search accepts only single words such as "frustrat*". The following table shows characters that may be used to perform special functions when using plain text search.

Table 1. Special Search Characters for Plain Text Search

Character	Function	Example	Meaning
- (minus)	Exclude	-not happy	Files that do not contain "not happy"
&	AND	cell phone & tablet	Files containing both "cell phone" and "tablet"

Character	Function	Example	Meaning
	OR	cell phone tablet	Files containing either "cell phone" or "tablet"
*	Wildcard for 0+ characters	help*	Will return results for help, helping, helpful, and other variants of the word stem. Does not work with multi-word searches.
?	Single character wildcard	th???	Will return results for "there", "thank", "those". Does not work with multi-word searches.
~n	Search for phrases appearing up to <i>n</i> words apart within the same speaker turn	cancel account ~4	Files containing "cancel" and "account" within the same speaker turn and no more than 4 words apart. For example, "cancel your, the account", "cancel my daughter's membership account", and so on.
~t	Search for phrases appearing within the same speaker turn	cancel account ~t	Files in which "cancel" and "account" appear in the same speaker turn
^	Search for phrases found at the beginning of a speaker turn	^ thank you	Files containing "thank you" at the beginning of a speaker turn
\$	Search for phrases found at the end of a speaker turn	account number \$	Files containing "account number" at the end of a speaker turn

**NOTE**

The ^ (beginning of line) and \$ (end of line) characters were added in V-Spark Version 3. Data uploaded prior to Version 3 cannot be searched using these characters.

Time-based Search & Limitations

Time-based searches can be used to find phrases that occur within a specified time period from the start or end of the call. Examples of time-based searches are shown in the following table.

Table 2. Time-Based Search Terms

Search Term	Meaning
phone ~s<30	Files that have "phone" in the first 30 seconds of call
cancel account ~s>30	Files that have "cancel account" anywhere except the first 30 seconds of call
thank you ~e<30	Files that have "thank you" in the last 30 seconds of call

Search Term	Meaning
upset ~e>30	Files that have "upset" anywhere except the last 30 seconds of call
-thank you ~e<30	Files that don't have the search term "thank you" in the last 30 seconds of the call

One consequence of time-based search requires explanation. Since time-based search only evaluates speaker turn start times, some matches may be missed or incorrectly marked. For example, if the search phrase is "Client: phone ~s<30" and the Client's turn begins at 28 seconds, but the phrase "phone" doesn't occur until 40 seconds after the start time, then a match will still be signified since the start of the speaker turn fell within the correct interval.

**NOTE**

Time-based searches were not allowed in 2.2.x data searches, and will return results for the search phrase located anywhere in the file.

Searching for Numbers

Depending on whether or not a phrase triggers number translation, numbers can appear either written out (two) or as digits (2) in transcripts. The application phrases and dashboard searches only look for exact matches, so if you search for (2) you won't see results for (two). If you are looking for all instances of a number, you can use the OR "|" search operator. For example, searching "2 | two" will provide you with all files containing the number two.

Regular Expression Search

Regular expression (regex) queries search text using pattern matching. V-Spark regex syntax is briefly described in the following sections. Regex searches can be performed in the [Dashboard Files View](#) by selecting the Regex option for search text. Regex queries in V-Spark will only match whole terms as with plain text queries. There are no partial matches.

**NOTE**

Regex queries operate on individual terms and cannot be used to match multi-word phrases. For each regex query, the search engine scans the list of terms in the inverted index to find all matching terms. It then retrieves all documents for each term.

This means that running a regex query that matches many unique terms can be very resource intensive. Users should avoid using a pattern that starts with a wildcard (for example, *.foo).

For more information on regex syntax as used in V-Spark, refer to the [documentation for Elasticsearch 1.4](#).

Anchoring

Most regex search engines will match any part of a word. In these cases ^ and \$ are used to anchor searches to the beginning and end of a word, respectively. However, since V-Spark regex searches will only match whole words, these special anchors are not required and not valid except as literal characters. As an example, for the word "abcde":

```
ab.* # match
abcd # no match
^abcd # no match
abcd$ # no match
```

Allowed Characters

Any Unicode characters may be used in the pattern, but certain characters are reserved. The reserved characters are:

```
. ? + * | { } [ ] ( ) # @ & < > ~" \
```



NOTE

^ and \$ are not reserved characters.

Search Characters and Example Queries

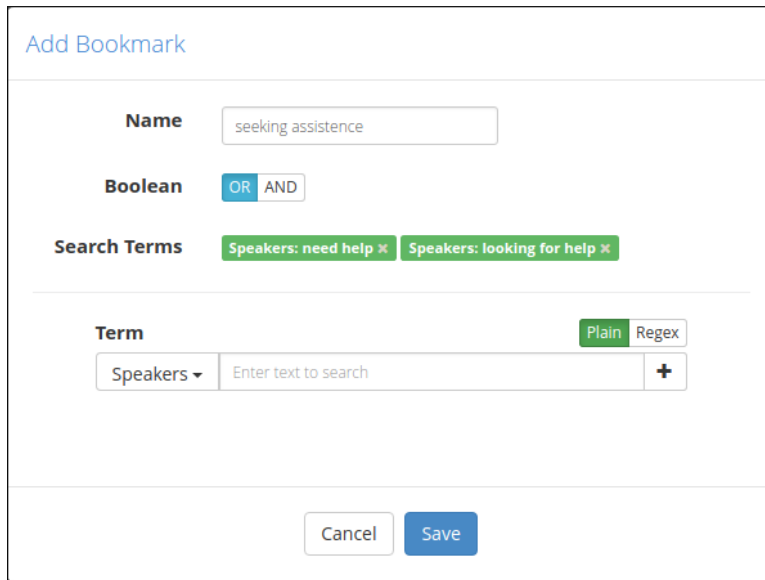
Character	Meaning	Example Text	Example Queries	Match?
.	Match any character	ab	a.	Yes
+	Match preceding shortest pattern 1 or more times	aaabbb	a+b+	Yes
		aaabbb	a+b+c+	No
*	Match the preceding shortest pattern 0 or more times	aaabbb	a*b*	Yes
		aaabbb	a*b*c*	No
?	Match the preceding shortest pattern 0 or 1 times	aaabbb	aaabbbc?	Yes
{n}	Indicate a minimum number of times the preceding shortest pattern should match	aaabbb	a{3}b{3}	Yes
			a{4}a{4}	No

Character	Meaning	Example Text	Example Queries	Match?
{n,n}	Indicate a minimum and maximum number of times the preceding shortest pattern should match	aaabbb	a{2,3}b{2}	Yes
()	Group characters to form subpatterns	ababab	(ab)+	Yes
	OR (applies to the <i>longest</i> pattern on either side)	aaabbb	a+ ccc aaa bbb	Yes No
[]	Indicate lists or ranges of characters. ^ negates characters.	abc	[a-z]* [^a-z]	Yes No
~	Negate the following shortest pattern	abcdef	abc~df ab~ef	Yes No
< >	Range of numeric values	99	<1-100> <100-101> <99-100>	Yes No Yes
&	AND - text must meet conditions on both sides	aaabbb	aaa.+&.+bbb aaa&bbb	Yes No
@	Match any word	hello	@ @&~(hello)	Yes No

Bookmark Searches

If you conduct a particular search regularly, you can bookmark your search terms to quickly repopulate the terms at a later time. Click **Add to Bookmark** in the **Search Terms** drop-down menu to display the **Add Bookmark** dialog.

Figure 13. Add Bookmark



The screenshot shows a dialog box titled "Add Bookmark". It contains the following fields and controls:

- Name:** A text input field containing "seeking assistance".
- Boolean:** Two buttons, "OR" (selected) and "AND".
- Search Terms:** Two green tags: "Speakers: need help ✕" and "Speakers: looking for help ✕".
- Term:** A section with a dropdown menu set to "Speakers", a text input field containing "Enter text to search", and a "+" button. To the right are "Plain" (selected) and "Regex" buttons.
- Buttons:** "Cancel" and "Save" buttons at the bottom.

Additional search terms can be added to the bookmark using a search term input similar to the one used for search. A name must be provided for the bookmark, and **AND/OR** search can be toggled as needed. After the bookmark is saved, it can be found in the list to the right of **Bookmarks**. Clicking the blue bookmark tag will reset the search to contain only the search terms saved in the bookmark. Bookmarks may be modified or deleted by clicking on **Manage Bookmarks** in the **Bookmarks** drop-down menu.

Figure 14. Bookmark Example



The screenshot shows a search interface with the following elements:

- Bookmarks:** A dropdown menu showing "seeking assistance" and "greetings" as saved bookmarks.
- Search Terms:** A dropdown menu showing "Speakers: need help ✕" as a saved search term.
- Boolean:** "OR" and "AND" buttons.

Filter Searches

Figure 15. Search Filters

The screenshot displays the search filter configuration panel. At the top, it shows the current date range '2018-06-27 to 2018-07-26' and a 'Refresh search' button. Below this, there are sections for 'Term' (with 'Plain' and 'Regex' options), 'Speakers' (with a search input), 'Gender' (with 'Agent' and 'All' options), 'Emotion' (with 'Overall' and 'All' options), 'Call Duration' (with a range from '0:00:00' to 'Max' and a 'Max' checkbox), 'Overtalk' (with a slider from '0%' to '100%'), 'Call Silence Time' (with a slider from '0%' to '100%'), 'Agent Voice Clarity' (with a slider from '0%' to '100%'), 'Client Voice Clarity' (with a slider from '0%' to '100%'), and 'Diarization' (with a slider set to 'Greater than 0%').

In addition to the text filtering options described above, there are several other valuable **Search Filters**. Each setting is described in detail below:

- **Date range:** Search within a particular date range. The default date range is the last month with data.
- **Gender:** Search based on Agent or Client gender: Male, Female, or All.
- **Emotion:** Search based on Overall or specific Agent or Client emotion: Positive, Negative, Improving, or Worsening. Positive calls begin positive and remain positive or neutral through most of the call. Negative calls begin negative and remain negative or neutral through the call. Improving calls go from mostly negative to positive by the end of the call. Worsening calls go from positive or neutral to negative.
- **Call Duration:** Search within calls with durations that are within a call duration range.
- **Overtalk:** Search within calls with overtalk percentages that are within a range of percentages. Overtalk occurs when speakers talk over one another. The overtalk slider filters based on the percentage of Agent overtalk. This is the count of the Agent-initiated overtalk turns as a percentage of the total number of Agent speaking turns. In other words, out of all of the Agent's turns, Overtalk measures how many turns interrupted a Client's turn. 100% region has the most overtalk.

- **Call Silence Time:** Search within calls with percentages of silence that are within a range of percentages. Silence is equal to all non-speech time, calculated as the total audio duration minus the sum of the durations of each word. If music and noise are not decoded to word-events, they are counted as silence. Calls with 100% silence contain the most silence.
- **Agent Voice Clarity:** Search within calls with levels of clarity in the Agent audio that are within a range of percentages. Agent voice clarity measures how clear the agent sounds in the recorded audio. Agents with 100% clarity are the clearest, while low clarity is defined by poor signal, background noise, or difficulty of comprehension due to accent or enunciation.
- **Client Voice Clarity:** Search within calls with levels of clarity in the Client audio that are within a range of percentages. Client voice clarity measures how clear the client sounds in the recorded audio. Clients with 100% clarity are the clearest, while low clarity is defined by poor signal, background noise, or difficulty of comprehension due to accent or enunciation.
- **Diarization:** Search within calls with diarization scores that are within a range of values. When mono (1 channel) audio has multiple speakers, diarization is done to separate the speakers for analysis. The diarization score is a value between 0 and 1 that identifies how completely the call can be divided into individual speakers. A score of 2 means the call cannot be diarized. Diarization technology is not perfect, and to find calls where diarization is done well, set the slider closer to one than to zero. The tradeoff is that fewer calls will be retrieved.

Tagging Multiple Search Results

V-Spark makes it easy to identify specific transcripts or the results of previous searches by enabling you to apply a **tag** (a logical label) to them and then subsequently search for transcripts that are associated with that tag. Tagging multiple items in a single operation is generally referred to as *bulk tagging*.

Tagging selected results is done from the **Dashboard**, using the **Bulk tagging button** and the **Bulk tagging toolbar** that displays under the **Bulk tagging button** once it has been selected.

Figure 16. Bulk Tagging Button and Toolbar

The screenshot shows a search interface with various filters and a results table. On the left, there are filters for Term (Speakers), Gender (Agent), Emotion (Overall), and Call Duration (0:00:00 to Max). On the right, there are search terms and a 'Bulk tagging' button (tag icon) with a callout '1'. Below the button is a 'No files selected' dropdown menu with a callout '2'. The results table shows one entry: 759173003539094.mp3, Agent ID, Time (2017-08-30 11:30:23 am), and Duration (0:05:25).

The callouts in image above highlight the following:

- ❶ The **Bulk tagging button**. Select this button to toggle display of the **Bulk tagging toolbar**.
- ❷ The **Bulk tagging toolbar**. Enables you to select multiple files at one time, and to add and remove tags.

To tag results:

1. Use V-Spark's search capabilities to locate the transcripts that you want to tag
2. Click the **Bulk tagging button** to open the **Bulk tagging toolbar**
3. Click **No files selected**. A drop-down menu displays. To select files, click one of the following:
 - **All (up to 1000)** - select all of the matching results (if there are 1000 or less matching results)



TIP

If more than 1000 matching result are available and you want to tag all of them, you will need to tag the first 1000, then select results that match but do not have that tag, tag the next 1000, and so on.

- **All in view** - select the matching results that are shown on the current page

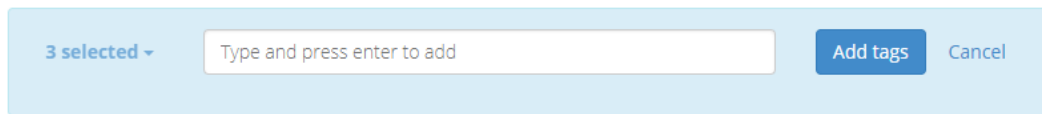
You can also select individual files manually by clicking the checkbox beside their names.

After selecting one of these menu commands or selecting files manually, the matching transcripts are highlighted.

You can also use other commands on this menu to deselect all selected items, or only deselect those that are shown on the current page.

4. After selecting the transcripts that you want to tag, the **Bulk actions menu** displays. Click that menu header to display the **Add tags** and **Remove tags** menu items. Select **Add tags**. A textbox displays.

Figure 17. Add Tags Textbox When Adding Tags



5. Type the tag(s) that you want to apply to the selected transcripts. Tag names cannot begin with a hyphen (dash). As you type, a drop-down menu displays existing tags that match what you have typed. Select a tag from the menu to complete the tag name, or finish typing the tag name. You can add multiple tags at the same time by pressing the enter key after each tag that you want to add. You can only add up to 20 tags at one time.



NOTE

You can cancel adding tags at any time before adding them by selecting **Cancel** from the Bulk tagging toolbar.

6. When you are finished entering the tag(s) that you want to apply, click **Add tags**. The tags that you have added to the selected transcripts display at the bottom of each selected transcript.

Once you have tagged transcripts, you can easily locate them again by selecting **Tag** from the **Term** drop-down in the search term input area, entering the name of the tag that you want to search for in the text input area, and pressing enter or the add (+) button. The search term input is discussed in [Plain Text and Regular Expression Search](#).



NOTE

There can be a slight delay between the time that you initiate a bulk tagging operation and the point at which tagged versions of all matching results are displayed. You can click the **Refresh Search** button at any time to force the display to be updated.

You can also double-click any displayed tag to automatically add that tag as a search term and filter the file list.

Removing Tags from Multiple Search Results

The process of removing tags from multiple search results in a single operation is similar to the process of adding tags to multiple search results, except that you:

1. Select **Remove tags** from the **Bulk actions menu**. After selecting this menu option, the tags area is pre-populated with the tags that occur on the selected transcripts. Only up to 20 tags can be displayed.
2. Click the **x** in any of the available tags to schedule them for deletion. The tag changes from green to red to make it easy to see that it is scheduled for deletion, and the **x** changes to an undo button, which you can click to remove that tags from the list of those that are planned for deletion.

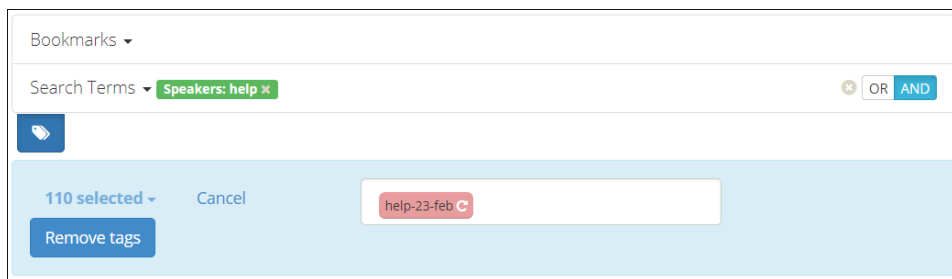


NOTE

You can cancel removing tags at any time before adding them by selecting **Cancel** on the Bulk tagging toolbar.

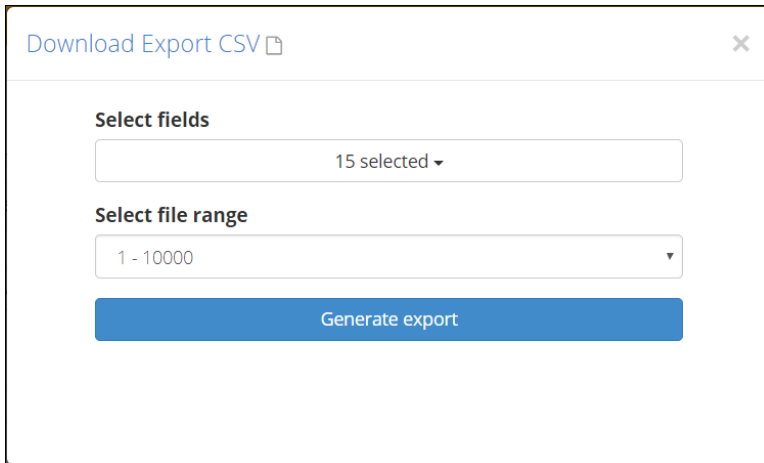
3. Once you have identified all of the tags that you want to remove from the selected transcript, click **Remove tags** to remove those tags.

Figure 18. Removing tags



Exporting Search Results in CSV Format

Search results can be exported to Comma-Separated Value (CSV) files using the **Export to CSV** button on the top right hand side of the Files view. Clicking this button displays the **Download Export CSV** dialog.

Figure 19. Exporting and Downloading Search Results

The screenshot shows a dialog box titled "Download Export CSV" with a close button in the top right corner. Inside the dialog, there are two sections: "Select fields" with a dropdown menu showing "15 selected" and a small downward arrow, and "Select file range" with a dropdown menu showing "1 - 10000" and a small downward arrow. At the bottom of the dialog is a blue button labeled "Generate export".

This dialog enables you to specify the following:

- **Select Fields** - Enables you to specify the application, standard metadata, or custom metadata fields whose values should be included in the exported CSV file. You can also choose **Select all** to include the data for all fields in your CSV output.
- **Select file range** - Enables you to specify the maximum number of files in your search results within the current folder for which CSV output will be produced. Possible ranges are displayed in increments of 10,000 files. Only ranges that are relevant to your search results are displayed - if your search results only match up to 9,999 files, the only range that you will see is **1 - 10000**.

After customizing these values, click **Generate export** to generate a CSV file that includes the selected fields for the selected range of matching search results. The name of the generated file displays at the bottom of the **Download Export CSV** dialog. Clicking the name of this file downloads it to your system.

Exporting data in CSV format can be very useful because it enables importing V-Spark data into other applications and standardizing that data in all analyses performed.

Applications

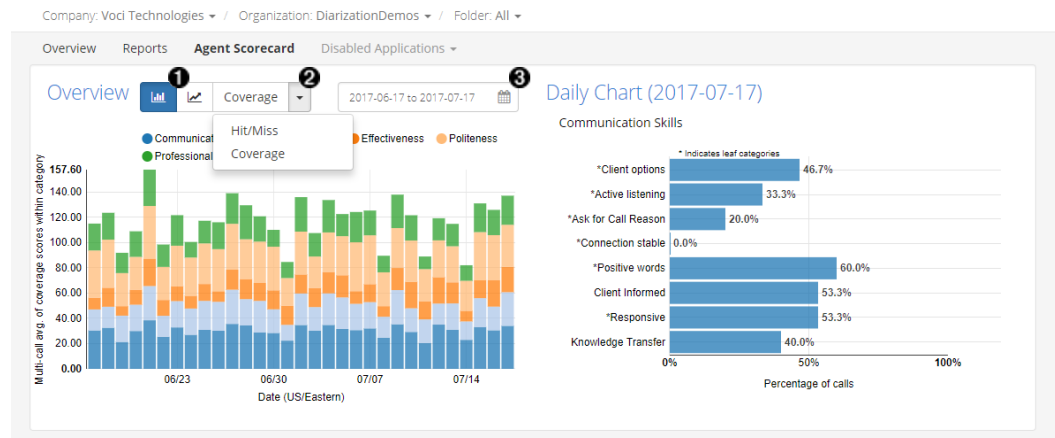
While the **Dashboard Overview** focuses on giving a high level view of the calls coming into V-Spark , defined **Applications** permit the user to focus on specific aspects of the data for deeper analysis. Available *Applications* are listed by name in the submenu. Applications use the linguistic and acoustic properties of calls to evaluate different metrics.

Long-Term Vision: Overview Chart

The **Overview Chart** on the top left side of the screen breaks down a scorecard by category for each day over the past 31 days. Each **category** is made up of **lower-level categories**. You can choose to view the chart according to the percentage of all calls that meet the requirements for a certain category (Hit/Miss), or according to the average percentage of calls per lower-level category (Coverage).

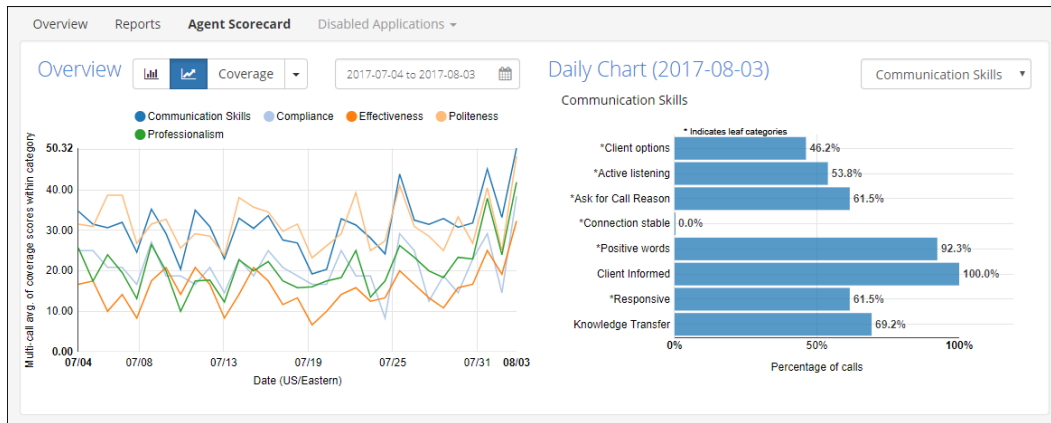
Each colored bar and each colored line is clickable, and each changes the **Daily Chart** view to show the upper-level categories' lower-level categories for more thorough analysis. The Overview chart stacks the scores for each category so an overall score can be compared on a daily basis.

Figure 20. Application Overview Chart - Bar Graph



- ❶ Select bar or line graph
- ❷ Select Score type to view
- ❸ Select Month Overview or 31 Day Overview

Figure 21. Application Overview Chart - Line Graph

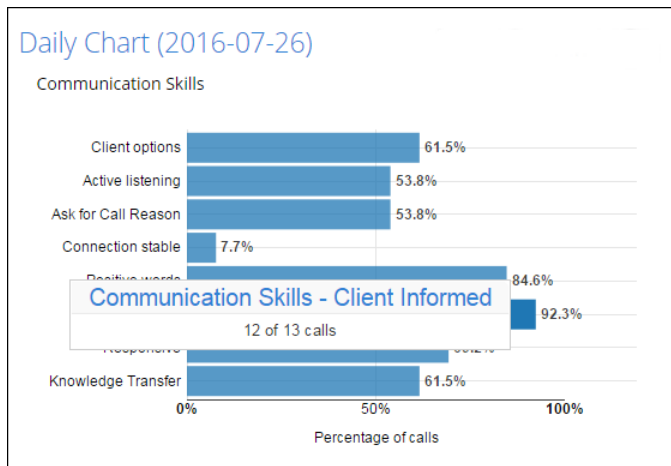


Short-Term Analysis: Daily Chart

V-Spark’s **Daily Chart** focuses on showing the scores for each lower-level category of a selected category. (Categories are selected by clicking a bar in the Overview Graph.)

The graph is clickable, and each category can be analyzed on a per-call level. The file list below adjusts to display calls that fall within the current category. If the View is currently set to "Files", selecting a leaf-level category in the Daily Chart navigates down to the file list. Phrases that represent that category will be highlighted in the search results. The number of calls scored for each lower-level category can be seen by hovering over the corresponding portion of the graph.

As you navigate down through lower-level categories, the percentages displayed are calculated from the number of calls that passed through the immediate upper-level category and not the total number of calls uploaded for that day.

Figure 22. Application Category Daily Chart

Viewing Application Scores

V-Spark enables you to view application scoring information from a number of different locations in the UI. Application scores and phrase match data may also be retrieved using the API as described in the `/appmatches` section of the V-Spark API Reference. Once you understand how applications are designed and constructed, you will understand what the application is measuring, how the application is measuring, and what the application metrics mean.

Note that in some cases, a "low" score may indicate a positive outcome, and a "high" score may indicate a negative outcome. For example, if an application measures the use of impolite language by Agents, a "high" score could indicate that some Agents are speaking rudely to callers.

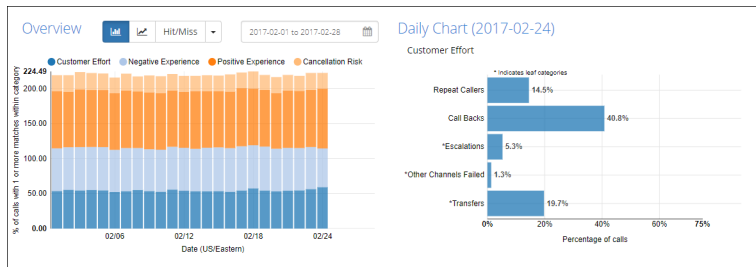
Using the Application Dashboard

After you've selected a company and organization from the breadcrumb menu, select an application from the submenu to view its dashboard. The primary way that the application dashboard enables you to view and analyze application scores is with the dashboard graphs. These graphs enable you to quickly visualize your application results and compare category results by month.

The Application Overview graph displays Coverage and Hit/Miss scores for top-level categories by day, while the Application Daily Chart enables you to drill down into lower-level categories.

Clicking on a data point on the Overview graph updates the Daily Chart on the right to provide a more detailed display of scores for lower-level categories. Likewise, selecting a data point on the Daily Chart updates the Files, Agents, or Summary View below this chart. If the selected category contains its own lower-level categories, then the chart is updated to also show the scores for those categories.

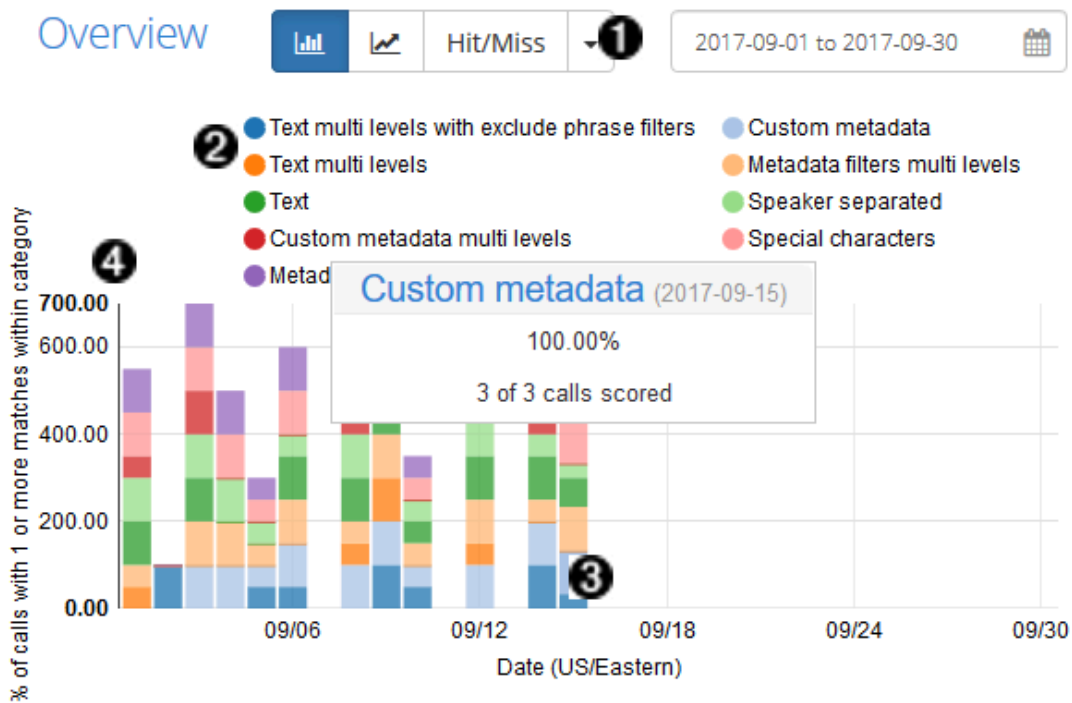
Figure 23. Application Dashboard Graphs



Using the Application Overview Graph

The bar chart version of the Overview graph shows you how many calls each day received scores based on the application's categories.

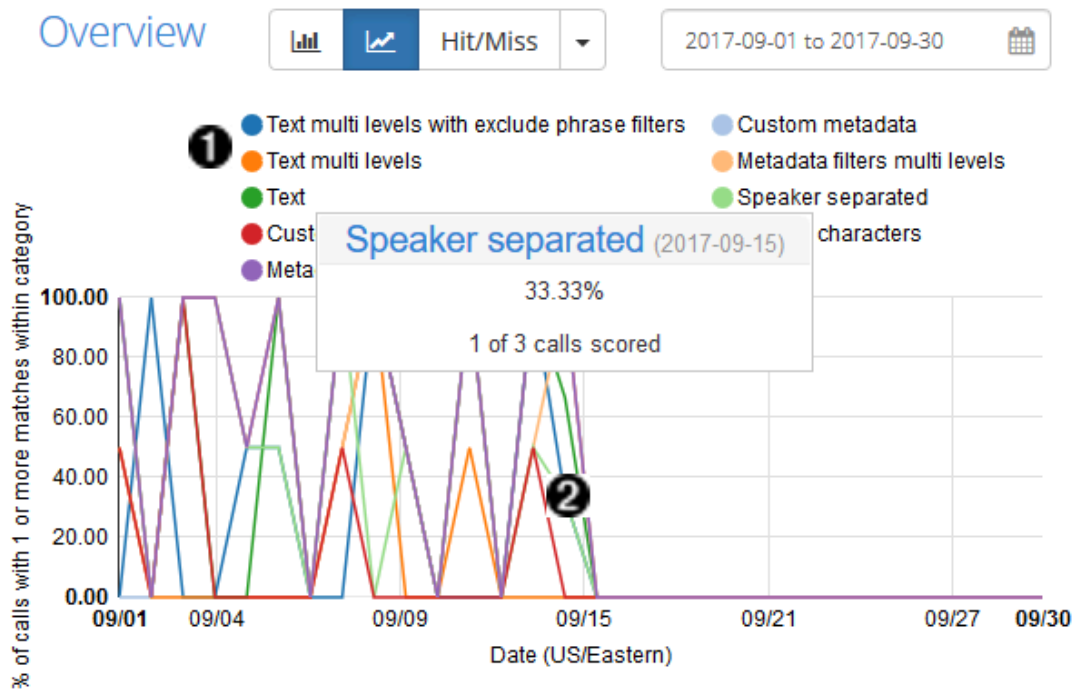
Figure 24. Bar Chart Version of the Application Overview Graph



1. Choose "Hit/Miss" from the drop-down menu to display only hit/miss score data on the graph, or choose "Coverage" from the drop-down menu to display more-nuanced coverage data.
2. The key above the Overview graph assigns a color to each top-level category. Each day's vertical bar is divided into categories using these colors. Select a color in the key to hide that category's data so that it is not displayed in the graph.
3. Hover the pointer over a division to see a tool tip that displays the name of the category, the date represented by the bar, the percentage of files that received scores from that category on that day, the number of files that received scores from that category on that day, and the total number of files recorded that day.
4. The total height of each bar is measured against the vertical axis, and is the total of all the percentages that day. The relative heights of the bars over time enable you to compare the effectiveness of the application on each day.

The line graph version shows you the effectiveness of each category over time.

Figure 25. Line Graph Version of the Application Overview Graph



1. The key above the Overview graph assigns a color to each top-level category. Each category is represented as a line that follows the percentage of files each day that received scores from that category. Select a color in the key to hide that category's data so that it is not displayed in the graph.
2. Hover the pointer over a single-day point in the graph to see a tool tip similar to the one described for the bar chart.

Selecting a graph division in the bar chart (or a single-day point in the line graph) also filters the view below to only those files that match the same date and that received scores in the selected category.

Using the Application Daily Chart

Select a graph division in the bar chart (or a single-day point in the line graph) to break that category's scores out into lower-level category scores in the Daily Chart. This bar chart shows you the percentage of files for that day that received scores from each lower-level category within the category you selected. Tool tips on each bar show how many files received scores from that lower-level category. You will be able to compare the effectiveness of the different lower-level categories, since every lower-level category is shown even if it did not score any files that day. If a lower-level category is not a leaf category, select it in the chart to drill down further into the data. The category hierarchy that leads to the data you are displaying is shown above the Daily Chart. Select higher levels in the hierarchy to navigate back up to the top.

Selecting a lower-level category in the Daily Chart also filters the view below to only those files that match the specific date and that received scores in the selected category.

Using the Files View

In addition to narrowing your search results using the Dashboard graphs, you can also conduct searches using the filters for Dashboard application metrics and the other search functions based on the Application Files View. Additionally, you can use Boolean OR/AND searches to find calls that meet more than one category or that meet at least one of a subset of categories. These combined search capabilities give you the power to break down and analyze your data in highly flexible ways for deeper insights into your customer interactions. The following image shows the results of an OR search performed for "Communication Skills" or "Verification".

Figure 26. Application Files View

The screenshot shows the 'Application Files View' interface. On the left, there are search filters for Term, Gender, Emotion, and AgentScorecard. The main area displays a table of application files with columns for File Name, Agent ID, Time (Poland), Duration, Silence Time, Overtalk, Diarization, Agent Clarity, Client Clarity, Agent Gender, Client Gender, Overall Emotion, and Agent Emotion. A search bar at the top allows for filtering by term and gender.

File Name	Agent ID	Time (Poland)	Duration	Silence Time	Overtalk	Diarization	Agent Clarity	Client Clarity	Agent Gender	Client Gender	Overall Emotion	Agent Emotion
759173003539995.wav	061	2018-12-04 2:09:35 pm	0:03:21	44.46%	7.14%	N/A	90.33%	82.55%	Female	Male	Improving	Positive

Figure 27. Application Category Score Filters

The screenshot shows the 'Agent Scorecard' interface with a dropdown menu open for the 'Communication' category. The dropdown menu lists four filter options: 'All', 'High Coverage score greater than 67%', 'Medium Coverage score greater than 33%', and 'Low Coverage score less than 33% (does not include 0)'. Below the dropdown, there are buttons for 'All' for each category: Communication, Professionalism, and Sales.

This Files View is similar to the Files View of the Dashboard Overview. Perform simple searches by entering search terms in the **Term** field and by selecting the + button to add those terms to the **Search Terms** list. Choose built-in or custom metadata fields from the **Term** drop-down menu to search for a specific value/field pair. Remove active search terms from the list by selecting the x on the term's tag. Switch between plain text and regular expression searches by using the **Plain/Regex** toggle.

There is an additional search filter section for category scores. If there is a + button next to a category, select that button to display the lower-level categories beneath that specific category. Check the checkbox next to a category to filter the list and display only the files that received scores from that specific category.

When multiple check boxes are selected, use the search query Boolean function to find the intersection of the metrics. Select which type of Boolean search to perform by using the **OR/AND** toggle. Boolean "AND" searches only include files receiving scores from *all* of the selected categories. Boolean "OR" searches include files receiving scores from *any* of the selected categories. For each category, you can choose to filter by all or some of the lower-level categories or by certain ranges of scores.

- **All:** Displays all calls with coverage scores greater than 0%.
- **High:** Displays all calls with coverage scores greater than 67%.
- **Medium:** Displays all calls with coverage scores greater than 33%.
- **Low:** Displays all calls with coverage scores less than 33% and excludes scores of 0.
- **None:** Displays all calls with coverage scores of 0%, or calls that are unscored.

Using the Agents View

The Agents View enables you to compare application results by date range on an agent-by-agent basis.

Figure 28. Application Agents View

Agent ID	Overall	Professionalism	Communication Skills	Compliance	Effectiveness	Politeness
001	100.00	100.00	100.00	66.67	66.67	100.00
006	100.00	100.00	100.00	100.00	100.00	100.00
007	100.00	100.00	100.00	100.00	100.00	100.00
011	100.00	100.00	100.00	100.00	50.00	100.00
012	100.00	0.00	66.67	100.00	33.33	100.00
018	100.00	100.00	100.00	100.00	100.00	100.00
020	100.00	100.00	100.00	100.00	100.00	100.00
022	100.00	100.00	100.00	100.00	100.00	100.00
025	100.00	100.00	100.00	100.00	0.00	100.00
028	100.00	100.00	100.00	90.00	50.00	100.00
Overall (Avg.)	98.40	88.66	96.73	79.92	78.50	98.40

By default, the Agents View is sorted by Agent ID, or can be sorted by any alternative column by clicking on the header for the column by which you want to sort. This makes it easy to examine agent performance in various ways. For example, in an application that scores agent performance, you can click twice on the header for the **Overall** column to sort the view from lowest overall score to highest. You can then select the **Agent ID** entry of the poorest-performing agent to explore audio or transcripts of the individual calls of that agent.

The Agents View also provides ways to refine the data that you are displaying. The Agents View's Search box enables you to search for a particular agent to specifically evaluate their progress. To see the calls for a specific agent by date range, users can either:

- Click the Agent ID to display all of the calls for that agent. You can then drill down to do an individual examination of agent performance on specific dates.
- Use the date picker at the center of the screen to refine the calls that are displayed on the Agents View screen. Clicking the Agent ID then displays all of the calls for that agent during the selected time period.

As you move the cursor over any cell in the table, a pop-up identifies the number of calls from which the displayed percentage is derived. This can help you determine the significance of that percentage. For example, 50% derived from 1 out of 2 calls has a different meaning than 50% derived from 50 out of 100 calls. The first can be an aberration; the second is more likely to indicate a pattern. Clicking on any of the values in the table displays a **Files View** that is populated with the files used to compile that value.

The Blue toolbar shown in the Agents view provides multiple ways of refining the data that is displayed in the Agents view. From left to right:

- **LEVEL 1** - this drop-down enables you to select a complete (**All**) selection of top-level entries to display, or choose a top-level (Level 1) category that identifies a specific aspect of a call. Top-level/Level 1 categories are the same as the columns displayed in the Application Overview graph when you first explore the Application Overview Dashboard.

Once you have selected a specific top-level (**LEVEL 1**) category, you can also select a **LEVEL 2** category. A leading asterisk (*) next to a category name in the select list indicates a leaf-level category, meaning that you cannot drill down any further into associated data for the item.

Clicking a **LEVEL 2** item that is not a leaf-level category (and is therefore not preceded by an asterisk) displays a **LEVEL 3** drop-down category. A leading asterisk (*) next to a category name in the select list indicates a leaf-level category, meaning that you cannot drill down any further into associated data for the item.

- **DATA** - this drop-down enables you to specify the primary way by which the data shown in the table is calculated and organized. Possible options are:
 - **Hit/Miss Score** - indicates whether or not matches were found in a category's lower-level categories. Matches are based on the categories and category hierarchies that were defined in the application that produced this agents view.
 - **Avg. call duration** - indicates the average call duration, which is the time period between answering and terminating the call
 - **Avg. call silence** - indicates the average amount of silence that occurred during a call
 - **Coverage Score** - indicates the average score of all lower-level categories within the current highest level category. Matches are based on the categories and category hierarchies that were defined in the application that produced this agents view.

Finally, the **Agents View** enables exporting agent scores to a CSV file that includes all the categories currently shown in the table and facilitates more in-depth analysis of agent performance. All pages of the table will be exported.

Figure 29. Agents View: Export and Score Display Controls

Agent ID	Overall	Professionalism	Communication Skills	Compliance	Effectiveness	Politeness
001	100.00	100.00	100.00	66.67	66.67	100.00
006	100.00	100.00	100.00	100.00	100.00	100.00
007	100.00	100.00	100.00	100.00	100.00	100.00
011	100.00	100.00	100.00	100.00	50.00	100.00
012	100.00	0.00	66.67	100.00	33.33	100.00
018	100.00	100.00	100.00	100.00	100.00	100.00
020	100.00	100.00	100.00	100.00	100.00	100.00
022	100.00	100.00	100.00	100.00	100.00	100.00
025	100.00	100.00	100.00	100.00	0.00	100.00
028	100.00	100.00	100.00	90.00	50.00	100.00
Overall (Avg.)	98.40	88.66	96.73	79.92	78.50	98.40

After reviewing or refining the agents, time period, categories, and levels for which you want to see results, select **Export Table as CSV** to export current data in *Comma-Separated Values* format. More in-depth analysis of agent performance is possible using other tools where CSV is a supported input format.

Using the Summary View

The application **Summary View** enables you to compare application scores day by day. You are able to define categories to measure common call attributes, such as an increase in calls about Billing, a decrease in callback rates, or improvements in Agent Performance. It is then possible to identify changes in call distribution relating to those attributes.

The Summary View table contains a column for each top-level category in the application. Overall averages for each scored date in the selected date range are at the bottom of each column. Sort the table according to a particular category's scores by selecting the column heading of that category. Select a date in the **Date** column to switch the view below to the Files view and filter it to only show files from that date.

The Summary View also gives you the option to switch between viewing Coverage or Hit/Miss Scores for top-level categories.

Figure 30. Summary View: Export and Score Display Controls

Date	Professionalism	Communication Skills	Compliance	Effectiveness	Politeness
2018-12-04	35.00	45.83	50.00	40.00	71.43
2018-12-05	0.00	0.00	0.00	0.00	0.00
Overall	17.50	22.91	25.00	20.00	35.72

Showing 1 to 2 of 2 entries

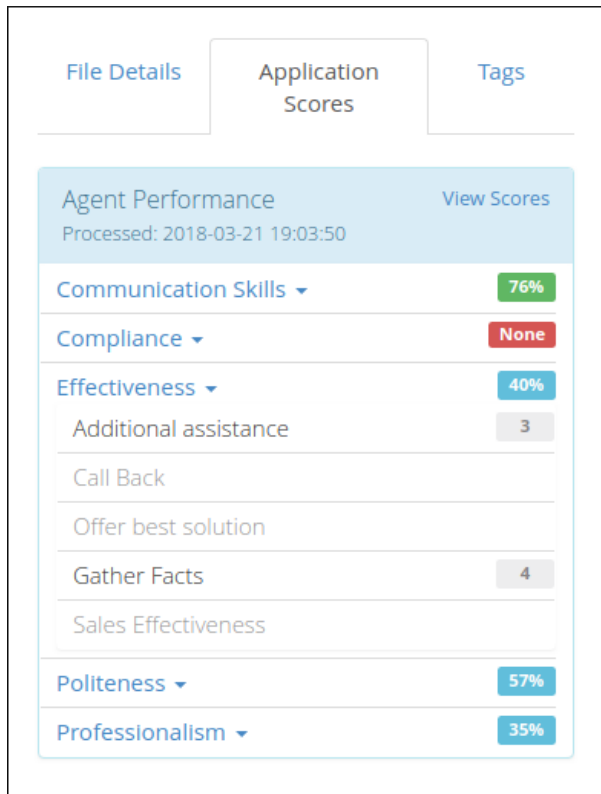
Choosing **Hit/Miss** scores displays the percentage of calls on that date that received scores in that category.

Choosing **Coverage** scores displays the average coverage score of calls on that date that received scores in that category.

Viewing Transcript Scores

You can also view the application scores of individual transcripts. To view the scores for a particular application from the File Details page, first select the **Application Scores** tab, then select **View Scores** next to the application name. The File Details Page displays Coverage Scores for all upper-level categories and Count Scores for leaf-level categories. Hit/Miss scores for a category can be inferred from the presence (Hit) or absence (Miss) of scores.

Figure 31. Application Scores on the File Details Page



Expand a top-level category to see the breakdown of lower-level category scores. These scores are updated each time the application is reprocessed.

Figure 32. Transcript with Application Scores and Highlighting

759173003527854.wav

0:00 / 6:31

Download MP3 | JSON | Text

File Details | Application Scores | Tags

AppStatsGold View Scores
Processed: 2019-05-23 05:59:18 UTC

Text multi levels with exclude phrase filters - None

Custom metadata - 25% 1

- supervisor name exclude BROKEN should be 12
- site include 3
- site exclude BROKEN should be 8
- supervisor name include 3

Text multi levels - None

Metadata filters multi levels - 100%

Text - 20%

- leaf no include 6 - 100%
- thank you for 6 - 100%

single text with leaf no matching exclude 10

AGENT: Alright and once it's completely now [Go to top](#) leave it off about 15 to 20 seconds and then powered back up.

CLIENT: Okay. [SILENCE 13] Well, I'm waiting for that, you know on this particular phone the front glass screen name is Chandra

AGENT: I'm sorry.

CLIENT: and that would just be replaced or.

AGENT: Do you have insurance? [SILENCE 7] Do you have insurance on the devise?

CLIENT: I do have a lot.

AGENT: Do you have insurance on your device [SILENCE 5] with no insurance if the screen is cracked um, what I would recommend you know cause and I have the account pulled up to see exactly do you know when you upgrade, date is. [SILENCE 3]

CLIENT: Know, they've I know the company has a lot of time. So I was just curious if this thing to be replaced or not.

AGENT: Yeah, the screen can be replaced. However, you would have to like take it to like a kiosk like in most maza have a little key. I said like you know, they can make sure screen Allan things like that, but with physical damage Samsung is not gonna actually replaced it out under the main factors warranty and with no insurance we will be looking at either at full retail a certified pre, owned devise or possibly you know going through a third party to have that screen replaced.

CLIENT: Okay, so I should try to be honest.

AGENT: Yeah, I always I tell people to try kiosk in a heartbeat because paying \$7580 have a screen fixed gonna be allowed to and a \$610 for another like full retail price of the phone.

CLIENT: Yes. Okay with that help me and I got me out of safe mode.

AGENT: Alright, so we're good to go.

CLIENT: We're good to go. Thank you for.

AGENT: Alright. No problem. Thank you so much you have a good one

CLIENT: Too bye.

AGENT: bye bye.

CLIENT: Okay.

Go to bottom

1. Select a score to highlight (in the transcript) the category phrase that the application scored on. You may need to scroll the transcript view up or down before the highlighted part of the transcript is visible. This highlighting enables you to see the part of the transcript that contains the phrase that the application scored on.
2. If more than one phrase in the transcript is highlighted, V-Spark will also display blue up and down arrows in the right margin of the transcript. Use these arrows to step between highlighted phrases within the transcript.

Select the score again to turn off highlighting for that score.

Application scores are also included in the JSON transcript for each call under `app_data` within the `scorecard` object. JSON transcripts contain Coverage and Count Scores for the entire application.

**NOTE**

The sample JSON files in this document use *ellipses* (. . .) to indicate where more than one of a certain type of section can be present in a JSON file of that type.

To download the JSON file of a transcript while viewing a file's File Details page, select **JSON** from the file download choices listed beneath the audio control. Your web browser will save the JSON file to your local computer.

Figure 33. JSON Scorecard Object

```
"scorecard": {
  "AppStatsGold": {
    "Text multi levels with exclude phrase filters": {
      "subcategories": {
        "lvl 1 Communication Skills": {
          "subcategories": {},
          "score": 1
        },
        "lvl 2 Client Informed": {
          "subcategories": {
            "lvl 2 Share Info": {
              "subcategories": {},
              "score": 1
            },
            "lvl 2 Warm Hold": {
              "subcategories": {},
              "score": 1
            },
            "lvl 3 Agent Actions": {
              "subcategories": {},
              "score": 0
            }
          }
        },
        "score": 0.666667
      },
      "lvl 1 Compliance": {
        "subcategories": {},
        "score": 0
      }
    },
    "score": 0.555556
  },
  ...
},
...
}
```

Categories and lower-level categories are contained within fields for each application. The score for the category is contained in the `score` field at each level. Higher-level categories show the average of all the scores of their lower-level categories, and leaf-level categories display their count scores.

JSON files that are exported from the File Details page always contain the most recent scores. JSON files that are exported in bulk from the Folders page or via the API may only contain the application scores from the first time that the file was transcribed unless the **update JSON** option was selected during application reprocessing.

Reports

The **Submenu** of the Dashboard also contains the **Reports** tab. There are two types of reports generated by V-Spark: **Monthly** and **Daily**. The reports in the list are ordered by date. Daily reports are generated at 12:05 AM (according to the time zone that was chosen for the organization) and summarize the activity of the previous day. Monthly reports are generated at 12:05 AM on the first day of the calendar month, and provide statistics about the previous month.

If the system is not running when a report is scheduled to be generated, that report will not be generated and will not appear in the list. Reports only incorporate data that was present when the report was scheduled to be generated. If you load or re-upload historical data for a day, that day's report will not be re-generated. If that day is in the current calendar month, however, the data will be incorporated into the monthly report when it is generated.

Figure 34. Location of Reports

Day	Report
2016-07-14	2016-07-14.csv
2016-07-13	2016-07-13.csv

Each CSV data file provides the name of each audio file with its corresponding Agent ID, date, time, and duration. These report files, which can be imported into a spreadsheet program for viewing, provide “big picture” summaries of the data.

The CSV file has multiple tables, each with their own headers that describe what each column contains. The following sections detail the indicators measured in each table.

Calls per Hour Table

Hours/#Calls, Day 1, Day 2, Day 3: This section lists the number of calls made each hour of the day. There are 24 rows, one for each hour, and one column for each day of the reporting period for a monthly report.

Agent ID, Longest Average Call Durations, Shortest Average Call Durations: This section lists the top and bottom 20 Agent IDs in terms of their average call durations, both shortest and longest.

Agent ID, Highest #Calls, Average Call Duration: This section lists the top 20 Agent IDs with the most number of calls along with their average call durations.

Figure 35. Calls per hour Table

	A	B
1	Hour / #Calls	3/16/2015
2	0	0
3	1	0
4	2	0
5	3	0
6	4	0
7	5	0
8	6	0
9	7	0
10	8	0
11	9	0
12	10	100
13	11	0
14	12	0
15	13	0
16	14	0
17	15	0
18	16	0
19	17	0
20	18	0
21	19	0
22	20	0
23	21	0
24	22	0
25	23	0
26	Total	100
27		

Emotion Tables

Average call duration (Agent/Client emotion): These tables list the average duration of calls according to agent and client emotion. The four emotional values are positive, negative, improving, and worsening. These values are sorted alphabetically by emotion.

% of calls (Agent/Client emotion): This table lists the percent of calls for each emotion experienced by agents and clients. The four emotional values are the same as those in the table above, and are sorted alphabetically by emotion.

Figure 36. Emotion Tables

64	Avg. call duration (Agent emotion: improving)	Avg. call duration (Agent emotion: negative)	Avg. call duration (Agent emotion: positive)	Avg. call duration (Agent emotion: worsening)
65	0:03:28	0:04:09	0:03:46	0:03:29
66				
67	Avg. call duration (Client emotion: improving)	Avg. call duration (Client emotion: negative)	Avg. call duration (Client emotion: positive)	Avg. call duration (Client emotion: worsening)
68	0:03:53	0:04:00	0:03:49	0:03:24
69				
70	% of calls (Agent emotion: improving)	% of calls (Agent emotion: negative)	% of calls (Agent emotion: positive)	% of calls (Agent emotion: worsening)
71	29.53	25.17	28.86	16.44
72				
73	% of calls (Client emotion: improving)	% of calls (Client emotion: negative)	% of calls (Client emotion: positive)	% of calls (Client emotion: worsening)
74	26.85	29.19	24.16	19.8
75				

Call Averages Tables

Agent ID, Highest Avg. Silence %, Agent ID, Lowest Avg. Silence %: This table lists the top and bottom 20 Agent IDs on the basis of the average percentage of silence in their calls. Percentage of silence is calculated as total non-speech duration divided by total call duration.

Agent ID, Most Speech Clarity, Agent ID, Least Speech Clarity, Agent ID, Most Overtalk Agent ID, Least Overtalk: This section lists the top and bottom 20 Agent IDs on the basis of the average agent-initiated overtalk in their calls. Agent-initiated overtalk is when the agent starts talking while the client is still talking. This section also lists the top and bottom 20 Agent IDs on the basis of their overall speech clarity. Speech clarity scores measure the V-Spark system's confidence that it has correctly identified the words that were spoken. The higher the score, the clearer the speech.

Agent ID, Highest Avg. Talk Time, Agent ID, Lowest Avg. Talk Time: This section lists the top and bottom 20 Agent IDs on the basis of their average talk time per call. This is different than the Average Call Duration indicator, which measures length of call regardless of speech duration.

Avg. Agent Talk Time, Avg. Client Talk Time: This section displays the average talk time across all calls for agents and for callers.

Male Agent #Calls, Female Agent #Calls, Male Client #Calls, Female Client #Calls: This section lists the number of calls with male agents vs. with female agents, as well as male clients vs. female clients.

Male Agent Avg. Call Duration, Female Agent Avg. Call Duration, Male Client Avg. Call Duration, Female Client Avg. Call Duration: This section displays the average call duration for all calls when the agent is male vs. when the agent is female, and also for when the client is male vs. when the client is female.

Figure 37. Tables: Average Talk Time, Number of Calls by Gender, and Duration of Calls by Gender

554	Avg. Agent Talk Time	Avg. Client Talk Time		
555	0:02:01	0:01:29		
556				
557	Male Agent #Calls	Female Agent #Calls	Male Client #Calls	Female Client #Calls
558	19	81	32	68
559				
560	Male Agent Avg. Call Duration	Female Agent Avg. Call Duration	Male Client Avg. Call Duration	Female Client Avg. Call Duration
561	0:08:17	0:05:09	0:07:17	0:05:02
562				

Subscribing to Email Reports

V-Spark allows subscriptions to **Email reports**. CSV files can be received as attachments to email so that reports can be reviewed regularly. This automation removes the need to log into V-Spark to download individual reports.

There is a drop-down menu at the top of all V-Spark pages that displays your user name. Choose **Profile** from that menu to display the **User settings** page, then scroll down to the **Email reports** section.

Figure 38. Email reports section of the User settings page

The screenshot shows the 'Email reports' configuration interface. It features two sections: 'Monthly' and 'Daily'. Each section has a dropdown menu with 'None selected' as the current choice. At the bottom of the section is a blue button labeled 'Save changes'.

The **Monthly and Daily** drop-down menus contain a list of all of the folders to which your account has access. If your account has access to multiple companies and organizations, the list of folders is separated into groups by organization short name. Each group also has an **All** choice that enables you to receive a single report for all of that organization's folders. Check the folders for which you would like to receive monthly (or daily) reports. As you choose folders, their names (or "All") are displayed on the button for the drop-down menu. If you select four or more items, the number of reports is displayed instead. Uncheck a folder to stop receiving monthly (or daily) reports for that folder.

Press the **Save changes** button to save your choices to your V-Spark account. You will receive the selected reports as email attachments the next time those reports are generated.