

Performance Guide

Voice Alert

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1 Document Overview

This document provides the guidelines for the Voice Alert's Server sizing and usage.

Voice Alert is an alerting solution for Cisco IP Phones which can generate multiple calls and play pre-recorded messages. The alert can be triggered from a phone, a web interface, a dry contact-to-IP or an API. It also checks if the alarm has been listened by the user and regenerates the alarm if not.

Please find the product's datasheet on:

http://www.telisca.com/docs/VCEALRT_EN.pdf

or the admin guide:

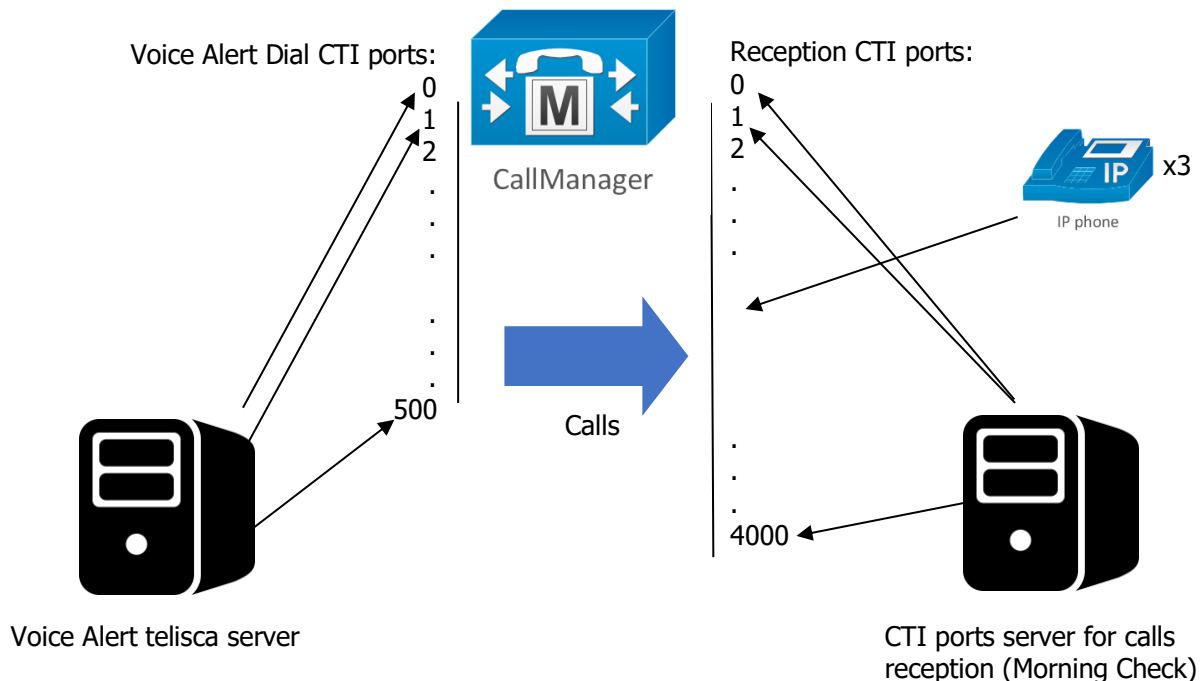
http://telisca.com/docs/VCEALRT_ADMIN_EN.pdf .

The document's goal is to determinate the duration of an alert depending on the number of phones to alert and the resources associated to the server.

2 Study description

2.1 Architecture description

The goal of these tests is to measure how the performance of the application is impacted by the number of phones alerted.



The tests were using two telisca servers and a CUCM server. One of the telisca server is used for launching alerts (with Voice Alert installed on it), the second is registering multiple CTI ports on the CUCM which will be used to receive the alert calls (with Morning Check installed). The telisca server used for the tests has 4GB of RAM and is running Windows server 2016. The tests have been executed with a 1 vCPU server and a 2 vCPU-server.

For the tests, the CUCM server is based on version 11.5, with 2vCPU and 6 GB of RAM. A single publisher server is used without any Subscriber (one node cluster). All the services are managed by a single server which can decrease the performance of the call process. The performance may change in your infrastructure depending on your CUCM configuration. Indeed, the CUCM manages a lot of simultaneous calls during an alert and the call's process time may depend on its resources.

Process to alert phones/CTI ports:

1. The Voice Alert server dials the reception CTI ports
2. The call is automatically answered by Voice Alert application
3. A voice audio message is played during 10s
4. The call is dropped by Voice alert CTI port at the end of the message.

To check the quality of the audio message, three (real) IP phones are alerted with the reception CTI ports during each test.

2.2 Study's Results

2.2.1 Number of CTI Ports

The objective of this chapter is to determine the maximum number of Alert (dial) CTI ports which could be used in parallel by Voice Alert. For this test, the performance of the alert is checked with different number of Voice Alert CTI ports. The performance is measured with the average time to Alert a phone for an alert. A shorter duration per phone means a better performance. To be sure all the dial CTI ports are used one time and only one time, the number of alerted phones (Reception CTI ports) is equal to the number of voice alert CTI ports (Dial CTI ports).

The following tables shows the duration of each alert depending of the number of phones alerted. For our tests, the message duration of the message is around 10 seconds.

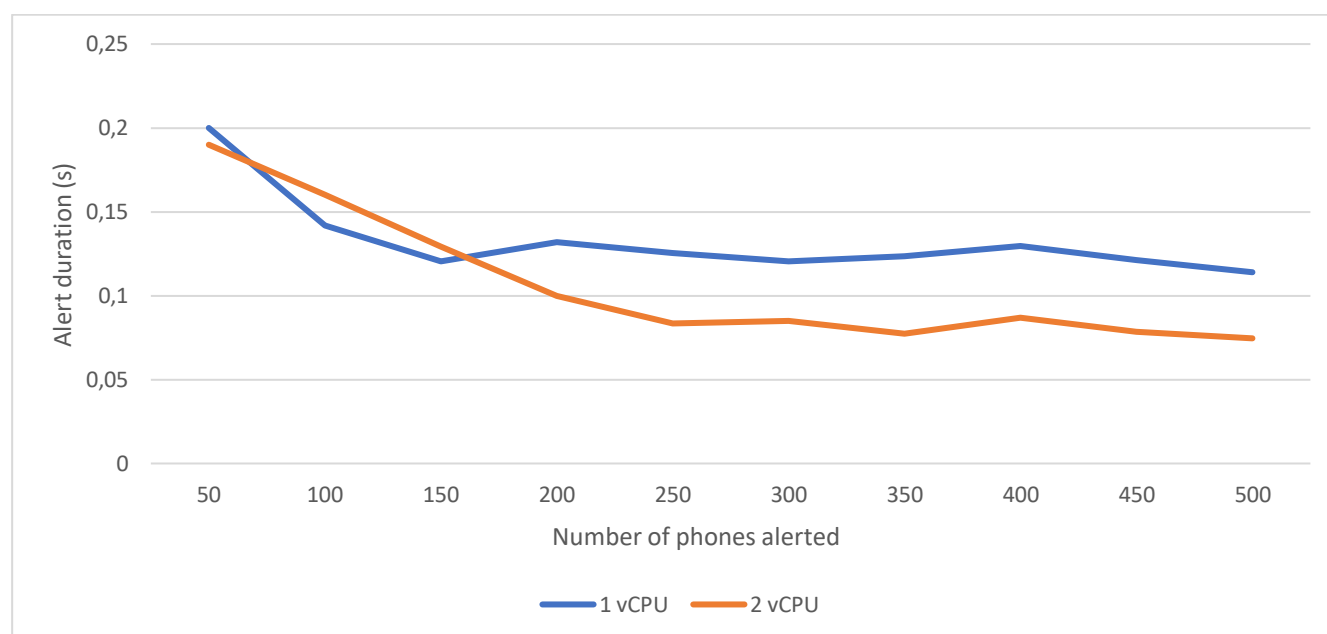
The average duration per phone is calculated by divide the alert duration by the number of Alerted phones.

Nb of CTI Ports	50	100	150	200	250	300	350	400	450	500
Alert duration (s)	10	14,2	18,1	26,4	31,4	36,1	43,3	51,8	54,6	57
Average duration per phone	0,2	0,142	0,120667	0,132	0,126	0,12	0,124	0,13	0,121	0,114

Table 1 Voice Alert tests with a 1 vCPU server

Nb of CTI ports	50	100	150	200	250	300	350	400	450	500
Alert duration	9,5	16	19,4	20	20,9	25,5	27,1	34,7	35,3	37,3
Average duration per phone	0,19	0,16	0,129333	0,1	0,084	0,085	0,077	0,087	0,078	0,075

Table 2 Voice Alert tests with a 2 vCPU server



The sound quality may decrease with the number of phones alerted. For a massive alert, it may have some short blanks during the audio message. For speech messages, it is not affecting the global understanding of the message during our tests. But the messages with music behind the voices must be avoid. Telisca recommends to test the audio quality in your environment for all your alerts.

On the graph, we can see there isn't any decrease of performances due to the number of CTI ports used. So, 500 CTI ports can be created and used by Voice Alert to dial the destinations. The worse performances for few alerted phones (the left part of the graph) is due to the initializing of the alert.

For all the tests, the CPU usage reach 100% at the initializing of the alert. The java process, which is used by the telisca server for the alert stayed under 80% of CPU usage.

Example:

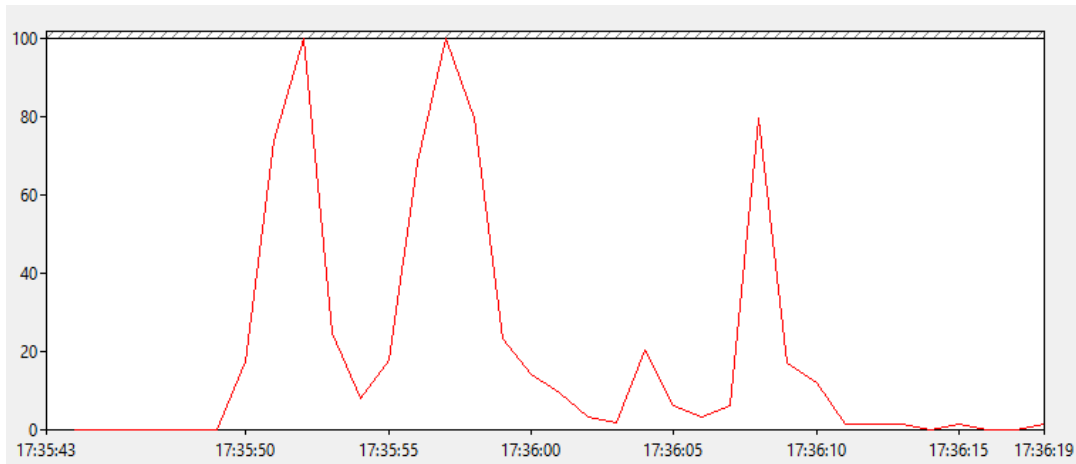


Figure 1: Server's CPU for 50 Phones Alerted

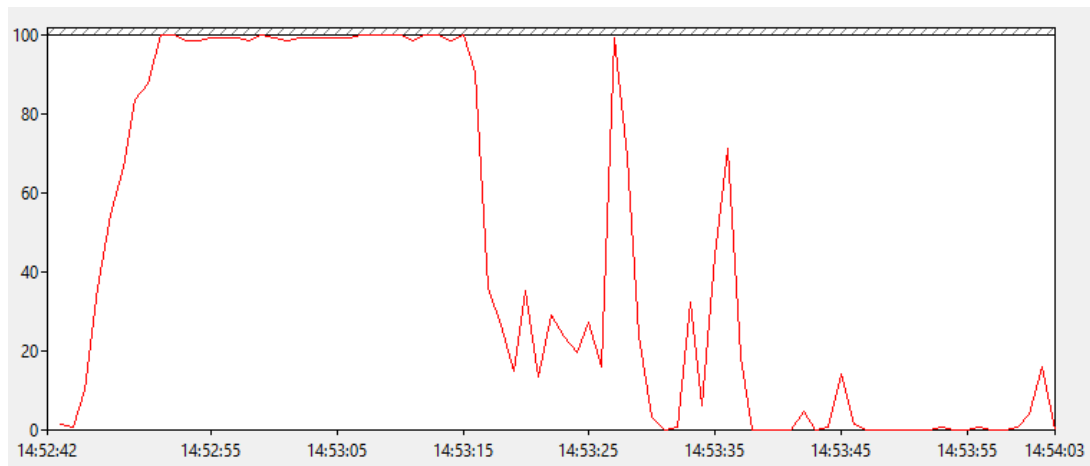


Figure 2: Server's CPU for 500 phones alerted

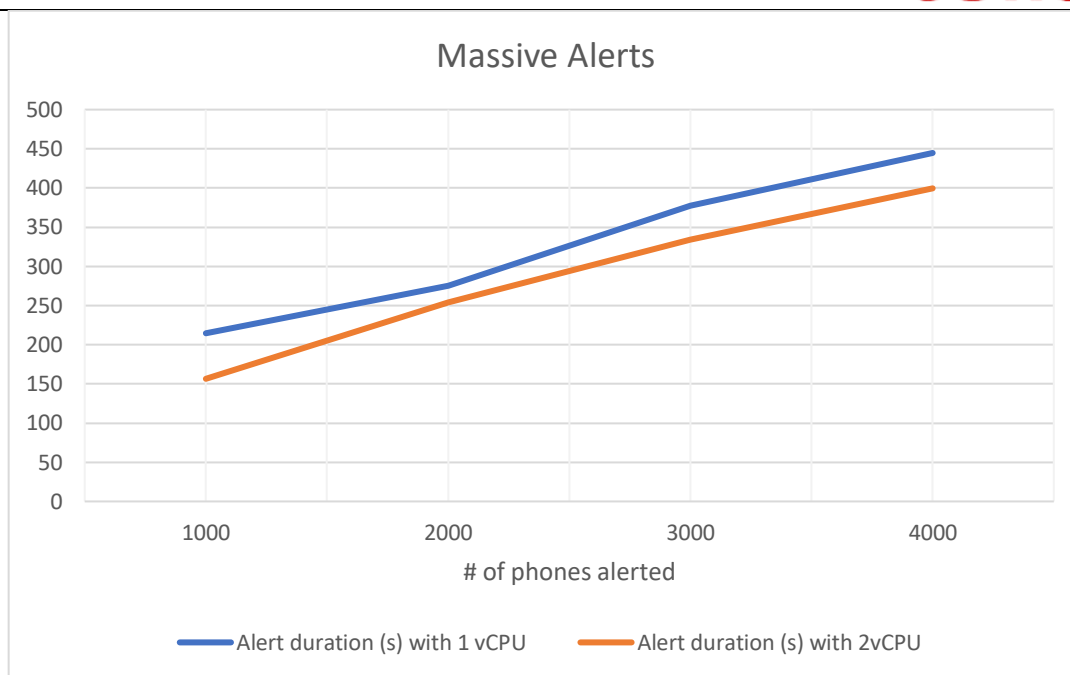
2.2.2 Massive alerts

For these tests, the number of alert CTI ports are fixed and a large number of phone/reception CTI ports are alerted. The message remains the same as the previous tests (10s speech message).

The number of alert CTI ports is fixed to 500.

Nb of phones alerted	1000	2000	3000	4000
Alert duration (s) with 1 vCPU	214,6	275,1	377	444,7
Alert duration (s) with 2vCPU	156,5	254,3	333,9	399,5

Table 3 Massive Alert tests



The duration of the alert is increasing with the number of phones alerted. So, the performances aren't impacted by the number of phones alerted. These tests have been done in the telisca laboratory and the duration may change in your architecture. Please test on your infrastructure to know the duration of a specific alert.

3 Recommendations for Voice Alert

These tests have been done in a laboratory, with a single application server. Voice Alert manage to answer the call as well, which increases the load of the server.

All of these results can vary depending of your CUCM cluster performance, along with the recycling required to reach the phones of your message and the number of applications handled by your telisca server.

Telisca recommends to avoid creating more than 500 alerting CTI ports (at least with a one or two CPUs on the server) to keep a correct audio quality. Tests must be done on your infrastructure to check the audio quality and the duration of each alerts.