

Configure Alarm Email Notifications in vManage

Contents

[Introduction](#)

[Prerequisites](#)

[Requirements](#)

[Components Used](#)

[Configure](#)

[Email Threshold](#)

[Logs](#)

[Verify](#)

[Check Email](#)

[Troubleshoot](#)

[Other Validation Checks](#)

[Other Error Logs](#)

Introduction

This document describes how to configure and send email notifications via vManage for events that take place in the network.

Prerequisites

Requirements

Cisco recommends that you have knowledge of vManage and ensure that your vManage version is 18.3.0 and above.

Components Used

This document is not restricted to specific software and hardware versions.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, ensure that you understand the potential impact of any command.

Configure

These steps need to be configured in order to enable email notifications.

1. Edit the Email Notifications from **Administration > Settings**.
2. Configure the Email Notifications from **Monitor > Alarms**.

For Step 1., from vManage Dashboard, navigate to **Administration > Settings > Email Notifications > Edit** and configure the **Enable Email Notifications** section. Here is an example screenshot.

Email Notifications

Enabled

Enable Email Notifications: Enabled Disabled

Security: None SSL TLS

SMTP Server

smtp.gmail.com

SMTP Port

465

From address

vmanage@viptela.com

Reply to address

vmanage@viptela.com

Use SMTP Authentication

Username/Email Address

.....@gmail.com

Password

.....


Save


Cancel

â€f

You can select the From address as per your choice, however, the domain name should match the mail server. As an example, <..username..>@cisco.com and the reply address is noreply@cisco.com. Because, if there is a reply, vManage does not capture it. This scenario is similar to the auto-generated emails that come with a no-reply address.

If the user is using GMail SMTP server, there has been a change with the way GMail integrates with the third party apps. Eg., vManage is a third party app for GMail. We need to make sure that two-step verification and app-password are enabled. You can set this up in the Security tab under Manage your Google account. When you enable SMTP Authentication under vManage settings, make sure to use the app-password.

 Security

 People & sharing

2-Step Verification

On

App passwords

1 password

For Step 2., this includes sub-steps like Severity, Alarm Name, Email-list, and WebHook URL.

Sample screenshots:

Name test2

Notification Configuration

Severity

Critical x Major x Minor x Medium x

Alarm Name

Interface Admin State Change x

Account Details

Email 2 Emails

Email Threshold (Maximum emails sent in a minute)

WebHook

Username

WebHook URL

Select Devices

All Devices Custom

Email List

Email Address (Maximum 10)

1@gmail.com



...@viptela.com



+ Add Email

Update

Webhooks are used by an external system in order to notify the local system about a certain event or update. They are like API calls

in the opposite direction. HTTP POST can be sent from vManage to any service that listens for this. For example, when you set up a webhook in vManage that hits a "serverless" piece of code in AWS, it fires off an event to page a bunch of people in the organization. There are several online services that you can connect to do these things. Refer to <https://testwebhooks.com/>.

Another example is to create something in slack in order to receive vManage webhooks. Refer to <https://api.slack.com/incoming-webhooks>

Email Threshold

There is a threshold field in the Email Notifications page. Navigate to **Monitor > Alarms > Email Notifications**.

This field indicates how many emails you want to receive per minute. By default, a maximum of 5 emails per minute. When the emails go beyond that threshold, you receive the message as shown in the image. The emails are not sent for 5 minutes and then the threshold starts fresh.

Email Threshold (Maximum emails sent in a minute)

The rest of the document captures the usage of "Email Alerts."

Logs

Check the vManage logs: `/var/log/nms/vmanage-server.log`

â€f

```
28-Jul-2018 15:51:41,847 UTC INFO [ts_vmanage] [NotificationsConsumer] (vManage-akka.actor.default-dispatcher-11) |default|
28-Jul-2018 15:51:41,854 UTC INFO [ts_vmanage] [NotificationsConsumer] (vManage-akka.actor.default-dispatcher-11) |default|
28-Jul-2018 15:51:41,894 UTC INFO [ts_vmanage] [NotificationsConsumer] (vManage-akka.actor.default-dispatcher-14) |default|
28-Jul-2018 15:51:41,903 UTC INFO [ts_vmanage] [NotificationsConsumer] (vManage-akka.actor.default-dispatcher-14) |default|
```

Verify

Verify via vManage-Dashboard. Navigate to **Monitor > Audit Log** as shown in the image.

Timestamp	User	User IP	Message	Module	Feature
28 Jul 2018 8:51:44 AM PDT	system	1.1.1.5	Email sent to [redacted]@gmail.com	Email	Email
28 Jul 2018 8:51:43 AM PDT	system	1.1.1.5	Email sent to [redacted]@gmail.com	Email	Email
28 Jul 2018 8:51:42 AM PDT	system	1.1.1.5	Configuration change event - Device in CLI mode...	device-config	device-config-sy...

Check Email

From: v, [redacted]@gmail.com
Subject: [NETWORK EVENT]CriticalInterface_Admin_State_Change
Date: July 28, 2018 at 8:51:41 AM PDT
To: [redacted]@viptela.com
Reply-To: vmanage@viptela.com

*** This is an automatically generated email, please do not reply ***
An event with following details happened in your network:
Severity: Critical
Event: Interface Admin State Change
Devices: [11.1.1.254]
Hostnames: [ts_vedge_w1]
Occurred on: Sat Jul 28 15:51:41 UTC 2018

â€f

Troubleshoot

This section provides information you can use in order to troubleshoot your configuration.

Check Audit-Log:

Currently, there is an issue where vManage Audit-Log might say that email might have been sent, but in fact, the email is not received. You can verify this through the **in/var/log/nms/vmanage-server.log** file as shown in the image.

Timestamp	User	User IP	Message	Module	Feature	Device
28 Jul 2018 11:49:49 AM PDT	admin	128.107.241.169	Email Notification EmailNotifications updated	Email	Email	--
28 Jul 2018 11:48:42 AM PDT	system	1.1.1.5	Email sent to [redacted]@com	Email	Email	--


```
28-Jul-2018 18:48:42,963 UTC INFO [ts_vmanage] [NotificationsConsumer] (vManage-akka.actor.default-dispatcher-13) |default| Sending email....  
28-Jul-2018 18:48:42,970 UTC INFO [ts_vmanage] [NotificationsConsumer] (vManage-akka.actor.default-dispatcher-13) |default| Recipient to ...@co  
vmanage@viptela.com  
28-Jul-2018 18:48:43,286 UTC ERROR [ts_vmanage] [NotificationsConsumer] (vManage-akka.actor.default-dispatcher-13) |default| Sending email noti  
javax.mail.AuthenticationFailedException: 535-5.7.8 Username and Password not accepted. Learn more at  
535 5.7.8 https://support.google.com/mail/?p=BadCredentials x7-v6sm12675153pgk.9 - gsmtp
```

Not all email alerts get generated consistently:

Firstly, it depends on how many alarms are generated for the set of events. vManage tries to combine events to one alarm if they are related. If not, it generates multiple alarms at the same time. For each alarm generated and rule, there is an email. Email notification is tied to alarms, not events.

Secondly, if in the first rule, you see that there are multiple alarms, there is only 1 email sent for that rule match. If you want multiple emails for the individual event, the individual rule needs to be defined.

"Username and Password not accepted" in vmanage-server.logs:

As seen in the screenshot, you might see the error "Username and Password not accepted. Learn more at

535 5.7.8<https://support.google.com/mail/?p=BadCredentials> m92sm8305479qte.50 - gsmtp." Despite this,

it might show on the vManage Audit Log that the email did indeed send.

By default, Gmail accounts are highly secure. When you use the Gmail SMTP from a non-Gmail tool, email is blocked. In order to test this, follow these steps:

1. Log in to Gmail.
2. Access the URL as <https://www.google.com/settings/security/lesssecureapps>.
3. Select **Turn on**.

Email notifications can then be received on the email account specified.

Failure to send email Notification(s):

In some cases, you might see that the generated email is denied by the mail server. This could be if the already provided account configuration might be incorrect or access is not granted. In the logs, you can see this message: **SendAsDeniedException**.

```
03-Dec-2018 15:46:37,177 CST ERROR [ts_vManage][EmailNotiUtil] (default task-84) |default| Sending email STOREDRV.Submission.Exception:SendAsDeniedException.MapiExceptionSendAsDenied; Failed to process message with message Cannot submit message.
```

Another use case is that the number of email messages users can send per day varies from SMTP Server to Server. You might see this log message in vManage:

```
"Sending email notification failed : com.sun.mail.smtp.SMTPSendFailedException: 550 5.4.5 Daily user ser
```

For example, there is a limit if it is Gmail: <https://support.google.com/a/answer/166852>.

If you see either of the below messages, collect a packet capture of the communication between the vManage and the mail server.

1. Verify that there is a response from the mail server.

```
"Sending email notification failed : javax.mail.MessagingException: Could not connect to SMTP host: mail
```

```
"Sending email notification failed : javax.mail.MessagingException: Could not convert socket to TLS;"
```

If you see it fail after the certificate in a similar manner to the below capture,

2. check the validity of the certificate on the mail server.

No.	Time	Source	Destination	Protocol	Length	Info
1	2020-05-30 20:49:55.736316			TCP	74	45798-25 [SYN] Seq=0 Win=14600 Len=0 MSS=
2	2020-05-30 20:49:55.744878			TCP	74	25-45798 [SYN, ACK] Seq=0 Ack=1 Win=14488
3	2020-05-30 20:49:55.744891			TCP	66	45798-25 [ACK] Seq=1 Ack=1 Win=14720 Len=
4	2020-05-30 20:49:55.755094			SMTP	150	S: 220 *****
5	2020-05-30 20:49:55.755109			TCP	66	45798-25 [ACK] Seq=1 Ack=85 Win=14720 Len=
6	2020-05-30 20:49:55.755204			SMTP	94	C: EHLO localhost.localdomain
7	2020-05-30 20:49:55.763506			TCP	66	25-45798 [ACK] Seq=85 Ack=29 Win=14592 Len=
8	2020-05-30 20:49:55.763877			SMTP	266	S: 250 mail 250 PIPELINING 250 AUTH
9	2020-05-30 20:49:55.763915			SMTP	76	C: STARTTLS
10	2020-05-30 20:49:55.772400			SMTP	90	S: 220 Ready to start TLS
11	2020-05-30 20:49:55.772925			TLSv1...	314	Client Hello
12	2020-05-30 20:49:55.783568			TLSv1...	993	Server Hello, Certificate, Server Key Ex
13	2020-05-30 20:49:55.783945			TLSv1...	73	Alert (Level: Fatal, Description: Certif
14	2020-05-30 20:49:55.783980			TCP	66	45798-25 [FIN, ACK] Seq=294 Ack=1236 Win=
15	2020-05-30 20:49:55.792412			TCP	66	25-45798 [FIN, ACK] Seq=1236 Ack=295 Win=
16	2020-05-30 20:49:55.792422			TCP	66	45798-25 [ACK] Seq=295 Ack=1237 Win=17536

```

▶ Frame 12: 993 bytes on wire (7944 bits), 993 bytes captured (7944 bits)
▶ Ethernet II, Src: a2:60:94:00:00:02 (a2:60:94:00:00:02), Dst: Vmware_e7:6c:e1 (00:0c:29:e7:6c:e1)
▶ Internet Protocol Version 4, [redacted]
▶ Transmission Control Protocol, Src Port: 25, Dst Port: 45798, Seq: 309, Ack: 287, Len: 927
▼ Secure Sockets Layer
  ▶ TLSv1.2 Record Layer: Handshake Protocol: Server Hello
  ▼ TLSv1.2 Record Layer: Handshake Protocol: Certificate
    Content Type: Handshake (22)
    Version: TLS 1.2 (0x0303)
    Length: 609
    ▼ Handshake Protocol: Certificate
      Handshake Type: Certificate (11)
      Length: 605
      Certificates Length: 602
      ▼ Certificates (602 bytes)
        Certificate Length: 599
        ▼ Certificate: 30820253308201bc020111300d06092a864886f70d010105... [redacted]
          ▼ signedCertificate
            serialNumber: 17
            ▶ signature (sha1WithRSAEncryption)
            ▶ issuer: [redacted]
            validity
              ▼ notBefore: utcTime (0)
                utcTime: 11-12-15 08:55:49 (UTC)
              ▼ notAfter: utcTime (0)
                utcTime: 20-03-02 08:55:49 (UTC)
  
```

â€f

3. Confirm if the server supports STARTTLS. Currently, this is required for the mail server to work with vManage. Enhancement [CSCvv40941](#) is open for vManage to be able to support servers without STARTTLS

Other Validation Checks

From: [REDACTED]@gmail.com
Subject: [NETWORK EVENT]MajorBFD_TLOC_Down
Date: July 23, 2018 at 5:46:47 PM PDT
To: [REDACTED]@viptela.com
Reply-To: vmanage@viptela.com

*** This is an automatically generated email, please do not reply ***
An event with following details happened in your network:
Severity: Major
Event: BFD TLOC Down
Devices: [11.1.1.254]
Hostnames: [ts_vedge_w1]
Occurred on: Tue Jul 24 00:46:45 UTC 2018

From: [REDACTED]@gmail.com
Subject: [NETWORK EVENT]MediumOMP_Site_Up
Date: July 23, 2018 at 1:07:42 PM PDT
To: [REDACTED]@viptela.com
Reply-To: vmanage@viptela.com

*** This is an automatically generated email, please do not reply ***
An event with following details happened in your network:
Severity: Medium
Event: OMP Site Up
Devices: [11.1.1.3]
Hostnames: [N/A]
Occurred on: Mon Jul 23 20:07:40 UTC 2018

From: [REDACTED]@gmail.com
Subject: [NETWORK EVENT]
Date: July 23, 2018 at 12:20:5
To: [REDACTED]@viptela.com
Reply-To: vmanage@viptela.com

*** This is an automatically generated email, please do not reply ***
An event with following details happened in your network:
Severity: Medium
Event: Interface State Change
Devices: [11.1.1.254]
Hostnames: [ts_vedge_w1]
Occurred on: Mon Jul 23 19:20:5

From: [REDACTED]@gmail.com
Subject: [NETWORK EVENT] Rule has been added in
Date: July 23, 2018 at 10:41:07 AM PDT
To: [REDACTED]@viptela.com
Reply-To: vmanage@viptela.com

*** This is an automatically generated email, please do not reply ***
This is a test email. Rule has been added in

â€f

Other Error Logs


```
23-Jul-2018 02:11:56,216 UTC INFO [ts_vmanage] [NotificationsConsumer] (vManage-akka.actor.default-dispatcher-4) |default| Sending
23-Jul-2018 02:11:56,221 UTC INFO [ts_vmanage] [NotificationsConsumer] (vManage-akka.actor.default-dispatcher-4) |default| Recipient
vmanage@gmail.com
23-Jul-2018 02:11:56,358 UTC INFO [ts_vmanage] [EventDataCollector] (device-event-processing-2) || Configuration change event from
[admin]
23-Jul-2018 02:11:56,358 UTC INFO [ts_vmanage] [DeviceConfigChangeEventManger] (device-config-0) || Received configuration change
23-Jul-2018 02:11:56,423 UTC ERROR [ts_vmanage] [NotificationsConsumer] (vManage-akka.actor.default-dispatcher-4) |default| Sending
com.sun.mail.smtp.SMTPSendFailedException: 530-5.5.1 Authentication Required. Learn more at
530 5.5.1 https://support.google.com/mail/?p=WantAuthError r16-v6sm11748122pfe.173 - gsmtpt
```

```
23-Jul-2018 02:18:27,614 UTC INFO [ts_vmanage] [NotificationsConsumer] (vManage-akka.actor.default-dispatcher-10) |default| Sending
23-Jul-2018 02:18:27,621 UTC INFO [ts_vmanage] [NotificationsConsumer] (vManage-akka.actor.default-dispatcher-10) |default| Recipient
vmanage@gmail.com
23-Jul-2018 02:18:27,836 UTC ERROR [ts_vmanage] [NotificationsConsumer] (vManage-akka.actor.default-dispatcher-11) |default| Sending
javax.mail.AuthenticationFailedException: 534-5.7.9 Please log in with your web browser and then try again. Learn more at
534 5.7.9 https://support.google.com/mail/?p=WebLoginRequired e19-v6sm8747376pgv.48 - gsmtpt
```

```
23-Jul-2018 01:38:37,500 UTC INFO [ts_vmanage] [NotificationsConsumer] (vManage-akka.actor.default-dispatcher-11) |default| Sending
23-Jul-2018 01:38:37,509 UTC INFO [ts_vmanage] [NotificationsConsumer] (vManage-akka.actor.default-dispatcher-11) |default| Recipient
vmanage@viptela.com
23-Jul-2018 01:38:37,885 UTC ERROR [ts_vmanage] [NotificationsConsumer] (vManage-akka.actor.default-dispatcher-11) |default| Sending
javax.mail.AuthenticationFailedException: 535-5.7.8 Username and Password not accepted. Learn more at
535 5.7.8 https://support.google.com/mail/?p=BadCredentials n80-v6sm11951267pfb.95 - gsmtpt
```

```
23-Jul-2018 01:51:50,903 UTC INFO [ts_vmanage] [NotificationsConsumer] (vManage-akka.actor.default-dispatcher-13) |default| Sending
23-Jul-2018 01:51:50,911 UTC INFO [ts_vmanage] [NotificationsConsumer] (vManage-akka.actor.default-dispatcher-13) |default| Recipient
vmanage@viptela.com
23-Jul-2018 01:51:51,204 UTC ERROR [ts_vmanage] [NotificationsConsumer] (vManage-akka.actor.default-dispatcher-13) |default| Sending
javax.mail.AuthenticationFailedException: 534-5.7.9 Application-specific password required. Learn more at
534 5.7.9 https://support.google.com/mail/?p=InvalidSecondFactor 87-v6sm14806588pfn.103 - gsmtpt
```

â€¦

The email is sent from vManage IP (Public-IP of VPN0 Transport Interface).

```
Return-Path: <[REDACTED]@gmail.com>
Received: from localhost.localdomain (ec2-[REDACTED]us-west-2.compute.amazonaws.com)
  by smtp.gmail.com with ESMTPSA id h62-v6sm22947040pfa.146.2018.10.30.12.
  for <[REDACTED]@gmail.com>
  (version=TLS1_2 cipher=ECDHE-RSA-AES128-GCM-SHA256 bits=128/128);
  Tue, 30 Oct 2018 12:32:23 -0700 (PDT)
From: [REDACTED]@gmail.com
X-Google-Original-From: vmanage@viptela.com
Date: Tue, 30 Oct 2018 19:32:09 +0000 (UTC)
Reply-To: vmanage@viptela.com
To: [REDACTED]@gmail.com
Message-ID: <499401607.28.1540927929205@localhost>
Subject: [NETWORK EVENT]MajorBFD_TLOC_Down
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit
```