Pro-face
by Schneider Electric

Application Note #1238: **Using Gmail's SMTP Server with Pro-Server EX**

Introduction

Based on numerous updates in both the Pro-Server EX software and Gmail's security & functionality, there are several errors that can occur in both new & existing Pro-Server EX project files when using the Writes Data to E-Mail Action. This document (based on similar behavior described in this article [1]) will aid in troubleshooting & resolving those issues. The error messages listed below are what will be displayed in the Pro-Server EX Log Viewer. Once you have the Writes Data to E-Mail Action working properly with Google's Gmail SMTP server, please review the "Sender's Mail Address" section at the end of this document.

Note: *Throughout this document, you will see text formatted like this[n]. These are hyperlinked web pages that will provide additional information regarding the associated topic. The 'n' superscript (n) will be the citation source number. Refer to the **Appendix A: Works Cited** section for more information.*

Default Gmail SMTP Settings

Here are the default Gmail SMTP Settings:
- **Gmail SMTP server address:** "smtp.gmail.com"
- **Gmail SMTP username:** Your full Gmail address (e.g. "yourusername@gmail.com")
- **Gmail SMTP password:** Your Gmail password
- **Gmail SMTP port (TLS):** "587"
- **Gmail SMTP port (SSL):** "465" **(USE THIS PORT)**
- **Gmail SMTP TLS/SSL required:** "yes"

Action Configuration

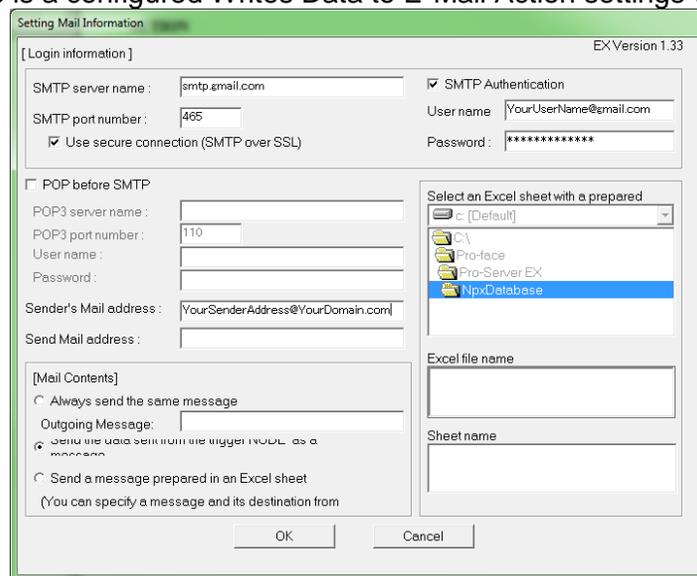As a reference, here is a configured Writes Data to E-Mail Action settings window:

Figure 1: Pro-Server EX Writes Data to E-Mail Action Settings

Example of Pro-Server EX Error

In order to verify if Pro-Server EX actions are operating properly, you will need to access the Log Viewer. To access the Pro-Server EX's Log Viewer, go to **Monitor Status → Log Viewer**.

If you attempt to execute a Writes Data to E-Mail Action in Pro-Server EX and there is an error executing the action, you will receive an error message similar to the following in the Log Viewer:
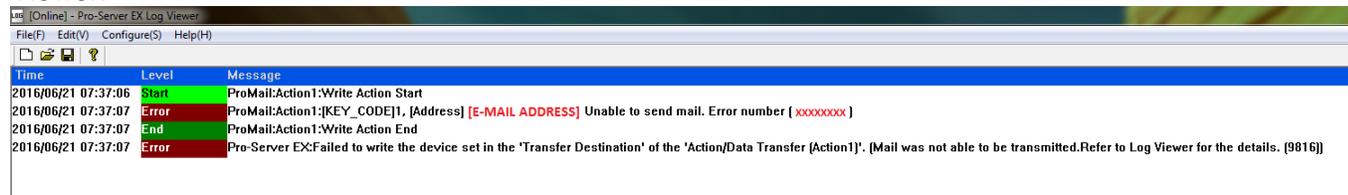

Figure 2: Pro-Server EX Log Viewer window displaying error.

The "[E-MAIL ADDRESS]" field will be the **Recipient's E-mail Address** configured either as a static address in the "Send Mail address" field in the Send Mail Information window, or in the "Address" field of the Excel sheet storing the message information.

The "xxxxxxxxx" string is a custom error code [2] (in hex) that is generated by the Microsoft CDO Library [3]. This the error code that that will be listed in the entries below.

Note: The error code listed in the Pro-Server EX Log Viewer window varies slightly from the error codes listed on the CDO Error Codes page (linked above). The Log Viewer window strips the "0x" from the beginning and the "L" from the end of the error code. In addition, some of the CDO Remarks will contain a percentage sign followed by one or more alphanumeric characters (for example, "%1" or "%hs"), this indicates a variable that will be replaced by text at the time the value is returned.

Most Common Error Codes

CDO Error Value: 80040211
CDO Error Name: CDO_E_SMTP_SEND_FAILED
CDO Remarks: The message could not be sent to the SMTP server. The transport error code was %2. The server response was %1.
Possible Causes: Incorrect Username and/or Password (SMTP Authentication), blank Password (SMTP Authentication), Google Security (see "Google Account Settings" section below).

CDO Error Value: 80040213
CDO Error Name: CDO_E_FAILED_TO_CONNECT
CDO Remarks: The transport failed to connect to the server.
Possible Causes: Incorrect SMTP Server Name and/or SMTP Port Number, "Use secure Connection (SMTP over SSL)" box unchecked.

CDO Error Value: 8004020D
CDO Error Name: CDO_E_FROM_MISSING
CDO Remarks: At least one of the From or Sender fields is required, and neither was found.
Possible Causes: Sender's Mail Address not formatted correctly (e.g. missing "@domain.com").

CDO Error Value: 8004020E
CDO Error Name: CDO_E_SENDER_REJECTED
CDO Remarks: The server rejected the sender address. The server response was: %1.
Possible Causes: "SMTP Authentication" box unchecked.

Google Account Settings

If you have verified that all of your Writes Data to E-Mail Action settings are correct but you are still not receiving any email messages and get the "Unable to send mail. Error Number (80040211)" message in the Pro-Server EX Log Viewer, check your Inbox/Spam/Blocked Mail folders for a message similar to the following:
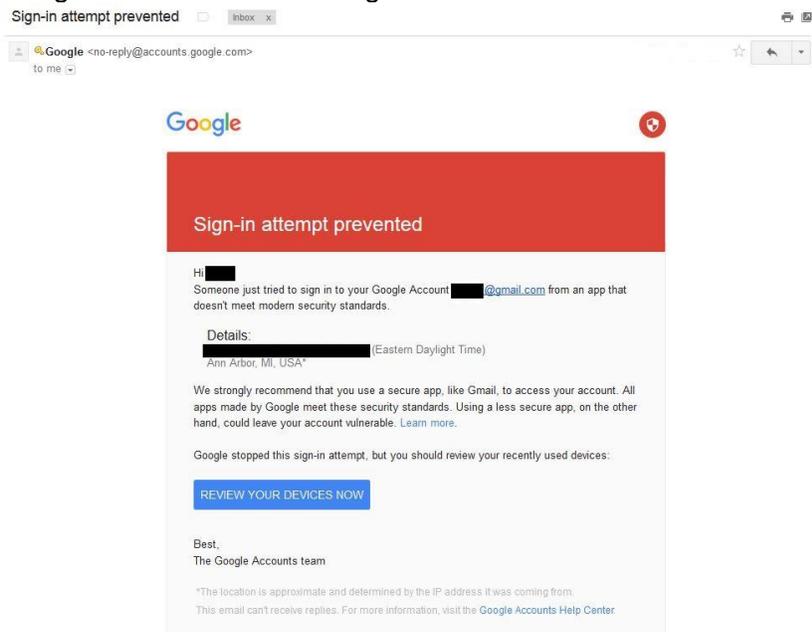

Figure 3: Google Security Notification

This notification from Google states that they had [blocked a sign-in](#) [4] to your Gmail account. This can be due to several different reasons, including an attempt to sign in for a different location or device.

Pro-Server EX is considered a third-part application, and because of this, Google prevents it from accessing the selected Gmail account. In order for Google to authorize a third party server to access your account via SMTP, you have to enable "Less Secure Apps" in your Gmail account. You can read a full explanation of what risks that subjects you to, and get a full explanation [here](#) [5], but essentially, any apps that aren't using security protocols that Google deems mandatory will be blocked unless you enable the ability for less secure apps to access your Gmail account.

CAUTION: *Do not enable this access unless you fully understand what's going on, and what the possible ramifications are.*

If you do choose to enable less secure app access, you can do that on [this page in your Gmail account](#) [6]. If you are unable to use the link above, follow the steps below:

1. Log into your Google/Gmail account.
2. In the upper-right corner, click on your **profile picture** and click on **My Account.**
3. Click on the **Sign-in & security** section on the left.
4. Scroll to the bottom of the page, under the *Connected apps & sites* section you will see the setting for **Allow less secure apps**.
5. If this setting is "OFF", click the slider switch to the right to turn it "ON".

Below are two screen captures of where you'll find the setting, the first using the direct link, and the second using the steps listed.
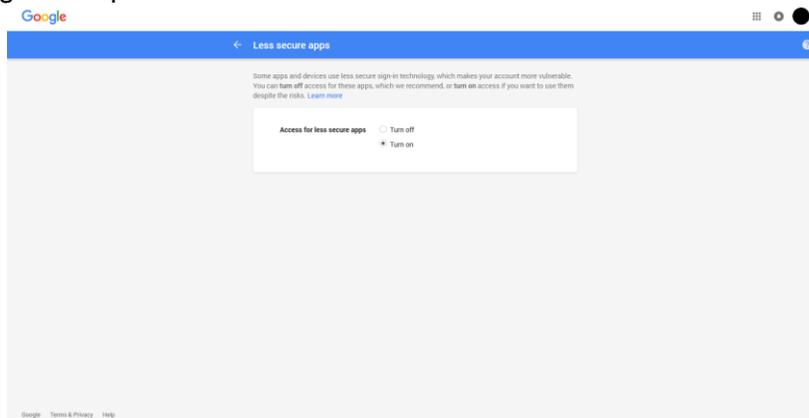

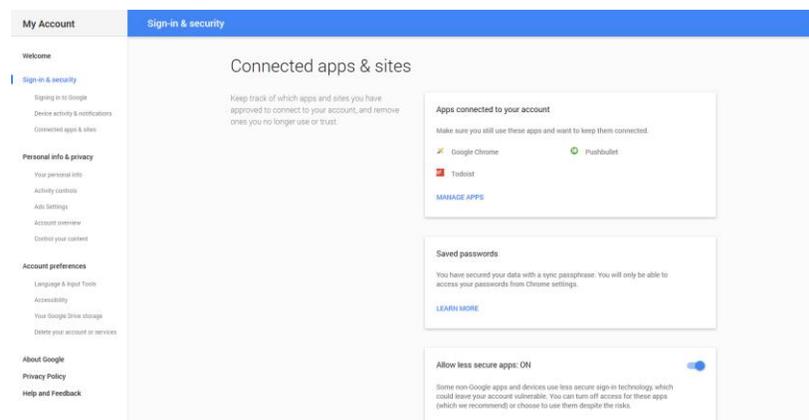*Figure 4: Less Secure Apps screen (direct link access)*

Figure 5: Less Secure Apps screen (step-through access)

Sender's Mail Address

Once you have the Writes Data to E-Mail Action working properly (i.e. sending the correct messages to the correct recipients), you may notice that the From/Sender address in the email you receive may be [incorrect] [7]. For example, you have the following configuration for the Writes Data to E-Mail Action in Pro-Server EX:
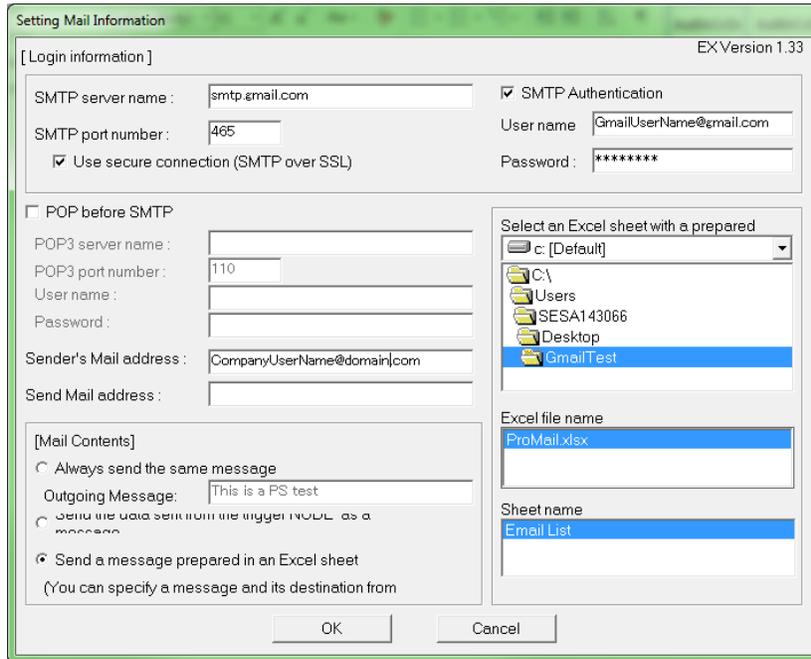

Figure 6: Pro-Server EX Writes Data to E-Mail Action with different Sender's Mail Address & Gmail Credentials

Although the Sender's Mail address is configured as "CompanyUserName@domain.com", the email message that was generated & sent via the Pro-Server EX action shows "GmailUserName@gmail.com" as the sender. This is because Gmail inserts the SMTP Authentication User name as the sender's address on the message. The reason this is done is because it is the credentials (username & password) configured in the "SMTP Authentication" settings that is actually sending the message. So Gmail sets this email address as the sender of the message that the recipient will see. However, if you select to display the original message or display the headers, you will see additional information for the email that looks similar to the following:

```
Return-Path: <GmailUserName@gmail.com>
Received: from ComputerName (mailechanger.recipientdomain.tld [xxx.xxx.xxx.xxx])
        by smtp.gmail.com with ESMTPSA id xxxxxx-xxxxxx-xxx.x.x.x
        for <GmailUserName@gmail.com>
        (version=TLS1 cipher=ECDHE-RSA-AES128-SHA bits=128/128);
        Wed, 22 Jun 2016 07:54:09 -0700 (PDT)
From: GmailUserName@gmail.com
X-Google-Original-From: <CompanyUserName@domain.com>
thread-index: AdHMle44iiRrOUbSTy2BrWaqxLgePQ==
Thread-Topic: Error Code #1
To: <receipent@domain.com>
Subject: Error Code #1
Date: Wed, 22 Jun 2016 10:54:08 -0400
Message-ID: <xxxxxxxx.xxxxxxx@senderdomain.tld>
MIME-Version: 1.0
Content-Type: text/plain;
        charset="us-ascii"
Content-Transfer-Encoding: 7bit
X-Mailer: Microsoft CDO for Windows 2000
Content-Class: urn:content-classes:message
Importance: normal
Priority: normal
X-MimeOLE: Produced By Microsoft MimeOLE V6.1.7601.17609

Error #1 has occurred.  Please notify Tech Support.
```

Figure 7: E-mail Header Example

The email address configured as the "Sender's Mail address" in the Pro-Server EX Writes Data to E-Mail Action will be listed as the "X-Google-Original-From" value (highlighted in the screen capture above).

If you want/require a specific e-mail address as the Sender's Mail address that will be different from the SMTP Authentication credentials, and you do not want the Sender's Mail address (and not the SMTP authentication username) to be displayed as the sender, we recommend creating a new Gmail account that can be used for the purpose of sending emails generated by Pro-Server EX. This option would also reduce the risk of sensitive/unwanted data being captured in the event of a breach due to the security configuration allowing for access by less secure applications.

Alternative SMTP Server

If after evaluating all of the above information, it is determined that Google's Gmail SMTP server will not be the best fit for your needs, we have also used SMTP2GO [8] for testing purposes. It has a free account option available and we have verified that it works with Pro-Server EX's Writes Data to E-Mail Action.

Appendix A: Works Cited

Below is a list of the web pages referenced in this application note (in order of appearance).

[1] R. Sullivan, "Gmail SMTP Settings and New Security Measures Demystified," 18 July 2016. [Online].
Available: https://www.wpsitecare.com/gmail-smtp-settings

[2] "Error Codes," 08 June 2004. [Online].
Available: https://msdn.microsoft.com/en-us/library/ms526287(v=exchg.10).aspx

[3] "Collaboration Data Objects," 14 March 2013. [Online].
Available: https://en.wikipedia.org/wiki/Collaboration_Data_Objects

[4] "Unusual sign-in location detected," [Online].
Available: https://support.google.com/accounts/answer/2506340 [Accessed 29 June 2016].

[5] "Sing-in & Security," [Online].
Available: https://myaccount.google.com/intro/security [Accessed 29 June 2016].

[6] "Lees secure apps - Account Settings," [Online].
Available: https://www.google.com/settings/security/lesssecureapps [Accessed 29 June 2016].

[7] C. Drösser, "Mail creates wrong return email address (Google account)," 17 August 2013. [Online].
Available: https://discussions.apple.com/thread/5244875?tstart=0

[8] "SMTP2Go Homepage," [Online].
Available: https://www.smtp2go.com [Accessed 29 July 2016].

For more information on Pro-face and our full line of HMI, Operator Interface and Industrial PC products please visit our web site at www.profaceamerica.com.

For technical support email: support@profaceamerica.com or call: 800.289.9266.