

SMTP Status Codes & SMTP Error Codes Reference

There comes a time in the life of a Computer Consultant where, one day, he/she will have to deal with email server problems. It is inevitable. Sometimes these problems will be with the interfacing of the mail server with the ISP, in particular an inability to send mail. After checking the usual suspects such as lack of connection (your broadband line is dead), faulty router, firewall problems, DNS problems, or an incorrect SMTP server name (thanks to some clever ISP changing its SMTP server name without informing anyone – it happens!!), you will likely start delving a little deeper by checking if your email server reports any errors.

Depending on the actual problem it is encountering, your mail server may not be able to provide detailed help on how to resolve the problem, and may instead only be able to provide you with an SMTP Status Code in your server's log (these codes are also known as SMTP Error Codes or SMTP Reply Codes). It is just for such cases that we have produced this document (we use it too !! ☺).

So, use this document as a quick reference to common SMTP status codes or SMTP error codes for SMTP mail servers such as AA Mail Server, Alt-N MDAemon, ArGoSoft Mail Server, Axigen Mail Server, Barracuda Spam Firewall, CMail, CMailServer, E-Mail Anywhere, FTGate, GMS Mail, Internet Anywhere, Kerio MailServer (KMS), Lotus Notes, MailEnable, MailMax, Mailtraq, Merak Mail Server, Microsoft Exchange (Exchange Server 2003 NDR, Non-Delivery Report, error codes), Novell GroupWise, Qmail, PostCast Server, PostConf, PostFix, PowerMTA, QK SMTP Server, Rockliffe MailSite, SendMail, SurgeMail, TFS Secure Message Server, VisNetic Mail Server, WinMail, Zimbra, or any other SMTP / ESMTP standards compliant e-mail MTA.

Note : the following list of SMTP reply codes can also be used to troubleshoot Eudora or FoxMail email problems, Outlook error codes, Outlook Express error codes (Windows 2000/XP), Windows Mail Error Codes (Vista), Thunderbird problems, or other email program problems when those programs send and collect emails directly to and from the Internet as opposed to through a corporate email system. The error codes returned are the same.

SMTP Status Codes	What the message may mean
101 – Cannot open connection	<p>SMTP Error 101 : Typically your SMTP server or email program is unable to even start an SMTP session. Typical replies will be “SMTP Error 101, Error opening connection” or “SMTP Error 101, cannot open SMTP stream”.</p> <p>All <i>SMTP Error 101</i> errors usually point to a configuration problem, such as an incorrectly spelt SMTP server, or an IP address that does not exist, or an SMTP port that does not exist or which the recipient will not accept SMTP connections on, or some other process is already using the default SMTP port, port 25.</p>
211 – System Status message or System Help Reply	<p>SMTP Status 211 : Code which prefaces a message about the Mail Server status or a System Help reply to the user requesting help information.</p>
214 – Help Reply message	<p>SMTP Status 214 : This is usually in reply to the “HELP” command. It displays information about the server, usually a URL to the FAQ page of the SMTP software running on the server.</p>
220 – <Server Name> service is running	<p>SMTP Status 220 : This is normally the first message you will get back from the server. It means the mail service is running (ie. your mail server is running). It will normally contain a welcome message and/or the title of the SMTP software.</p>
221 – The domain service is closing the transmission channel	<p>SMTP Status 221 : The server is ending the mail session – it is closing the conversation with the ISP as it has no more mail to send in this sending session.</p>
250 – Requested mail action OK completed	<p>SMTP Status 250 : The mail server has successfully delivered the message!</p>
251 – User not local will forward	<p>SMTP Status 251 : The email account is not local to the ISP server but the ISP server will accept the email and will forward it (the server will RELAY your message, this is the most common action for ISP Mail servers – the recipient will see your ISP in the mail header as one of the first hops on the way to the recipient’s email system).</p>
252 – Cannot VRFY the user – will accept and attempt to deliver	<p>SMTP Status 252 : The user account appears to be valid but could not be verified, however the server will try to deliver the message.</p>
354 – Start mail input end with <CRLF>.<CRLF>	<p>SMTP Error 354 : This is normally in response to the DATA command. The server has received the From and To information and is now asking for the “Message Body”, the main part of the message which should be ended by two blank lines separated by a dot (period).</p>
421 – <Server name> Service not available.	<p>SMTP Error 421 : The Mail transfer service is unavailable. This can be caused by many things such as a server administrator stopping the mail service, or rebooting the mail server. This message normally indicates a problem with the email server or the ISP.</p>

SMTP Status Codes	What the message may mean
<p>450 – Requested action not taken – The mailbox was unavailable.</p>	<p>SMTP Error 450 : The server could not access the mailbox to deliver the message. This could be caused by a process on the remote server <i>tidying up the mailbox</i>, or the remote mailbox could be corrupt, or the remote mailbox may be stored on another server which is currently offline, or the network connection went down while sending, or the remote mail server does not want to accept mail from your server for some reason (IP address, blacklisting, etc..).</p> <p>In general SMTP Error 450 is a transient error and should induce your mail server to retry after it's preset retry interval. Example of an SMTP Error 450 reply message : <i>"450 Please try again later"</i>.</p>
<p>451 – Requested action aborted – Local error in processing.</p>	<p>SMTP Error 451 : The action has been aborted by the ISP's server. "Local" refers to the ISP's server. This error is usually due to overloading at the ISP from too many messages or transient failures. Typically some [hopefully] temporary event prevents the successful sending of the message. The next attempt to send by your server may prove successful.</p> <p>If this error keeps occurring to the point that it has effectively lost its <i>transient</i> nature and has become <i>frequent (!)</i>, <u>then the problem is at your end</u> and you should check your own mail server (if you email out of a corporate network), communications on your side (router, server network card), or inform your ISP if your mail server relays through your ISP or if you are a home user emailing out through Outlook, Outlook Express, Windows Mail, or similar email program.</p> <p>Example of typical SMTP Error 451 return messages : <i>"SMTP error 451 Unable to complete command, DNS not available or timed out"</i> or <i>"451 Domain of sender address does not resolve"</i> or <i>"451 Error getting LDAP results in map"</i>.</p>

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<p>452 – Requested action not taken – Insufficient storage.</p>	<p>SMTP Error 452 : The ISP server's disk system has run out of storage space, so the action had to be cancelled. Unless you are with an ISP which is so slack that they have not implemented Disk Full Alerts, this error usually indicates that your ISP's mail server is overloaded from too many messages. This can happen even to the best ISPs when, for example, there have been problems and none of the ISP's customers could send mail; as soon as the problems are fixed there is almost always a situation where thousands of users and organizations are trying to send mail all at the same time, and those numbers can occasionally result in the ISP's mail servers' hard disks temporarily filling up, with SMTP Error 452 being the result. The next attempt to send by your server may prove successful.</p> <p>SMTP Error 452 : Most ISPs mail servers impose a maximum number of concurrent connections that client's mail servers can attempt to make, and they usually also have a limit on the number of messages that are sent per connection. With business customers these maximums are rarely reached, if ever. Nevertheless, If you have a lot of messages queued up, for example as a result of the connection to your ISP going down for a significant amount of time (and you have hundreds of users in your organization, or it happened just as you were about to send that large mailshot!), there could be a situation where the output of messages from your server goes over the maximum number of messages per connection allowed by your ISP. This is another case where the ISP's server may issue a 452 SMTP error. As above, the next attempt to send by your server may prove successful.</p> <p>SMTP Error 452 : This error can also be indicative of a problem <u>on your own mail server</u>. Here is an example of an SMTP 452 error : <i>""452 Out of memory"</i></p>
<p>500 – Syntax error command not recognized.</p>	<p>SMTP Error 500 : The last command sent by your server was not recognized as a valid SMTP or ESMTP command, or is not formatted in the way the server expected. This includes situations where the command is too long.</p> <p>Note that commands that are recognized, but not implemented, are handled by different status messages (see 502 and 504).</p>

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<p>501 – Syntax error in parameters or arguments (e.g. invalid email address)</p> <p>Can sometimes also be indicative of communication problems</p>	<p>SMTP Error 501 : The command was correct and recognised, but the parameters (the arguments, e.g. email address) were not valid.</p> <p>For example, the following email address will definitely give an SMTP Error 501 with most mail servers, <code>happy_larry@hotmail.com</code>, as “\” is not allowed in email addresses, which makes this email address invalid.</p> <p>In the vast majority of cases SMTP Error 501 is caused by invalid email addresses. For example, a typical return error message might be : “<remote-server-ip-address> does not like recipient. Remote host said: 501 Invalid Address”.</p> <p>In cases where the error is not caused by an invalid email address, an SMTP Error 501, particularly if repeated, can be indicative of communications problems, such as a noisy line, intermittent drops in network connections, etc...</p>
<p>502 – Command not implemented.</p>	<p>SMTP Error 502 : The command or function issued by your mail server is valid but has not been activated (typically, it is not supported on this particular server).</p>
<p>503 – Bad sequence of commands.</p>	<p>SMTP Error 503 : The commands have been sent in the wrong order, for example your mail server has sent the “Hello” command before sending the “Mail” command. This can often be caused by a drop in network connection just as your server was sending a command, resulting in the ISP’s server not receiving it and consequently not understanding the command that followed it.</p> <p>Note : this error, particularly if repeated, can be indicative of communications problems, such as a noisy line, intermittent drops in network connections, etc...</p>
<p>504 – Command parameter not implemented.</p>	<p>SMTP Error 504 : The command and parameter are both valid, but the parameter is not implemented on the ISP server, or an additional parameter or action is missing.</p> <p>For example, an often encountered SMTP Error 504 is : “504 Need to authenticate first”.</p>
<p>550 – Requested actions not taken mailbox unavailable.</p>	<p>SMTP Error 550 : This response can be caused by quite a few situations.</p> <p>-----</p> <p>SMTP Error 550 will be returned by many servers <u>if the recipient email address simply does not exist on the remote side</u> (you will often get “550 Invalid recipient” or “550 User account is unavailable” or “<ip-address-of-remote-server> does not like recipient - 550 Address rejected” or “550 No such user here” or “550 Not our Customer” or “550 Account not available”). In this case the sender of the email needs to contact the recipient verbally to get the correct email address.</p>

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	<p>-----</p> <p>SMTP Error 550 will sometimes also be returned by the recipient's <u>anti-spam firewall</u> if, for example, the anti-spam firewall does not like the sender (typically because the sender needs to be whitelisted). A typical example of an SMTP Error 550 return message by an anti-spam firewall might be :</p> <p><i>240.240.240.240 does not like recipient. Remote host said: 550-Verification failed for John.Doe@YourDomain.com 550-Previous (cached) callout verification failure 550 Sender verify failed Giving up on 240.240.240.240.</i></p> <p>-----</p> <p>SMTP Error 550 will also be returned if the user's mailbox is not local and Mail Relay is not enabled, <u>or the sending address is invalid</u> (the latter is a way, by the remote server, to control spam).</p> <p>-----</p> <p>Other situations of SMTP Error 550 include sending mail to <u>recipients outside of your domain where this is not allowed.</u></p> <p>-----</p> <p>SMTP Error 550 is also returned when you are attempting to send through a server <u>which requires SMTP authentication</u> and you have not supplied credentials (ie. your mail server, or email program, is attempting to send without SMTP authentication)</p> <p>-----</p> <p>Yet another set of circumstances where an SMTP error 550 might be issued include an incorrect From address when used <u>with an ISP where you can send mail only if the From address is from a domain that they host for you</u> (at the time of writing, September 2008, British Telecom in the UK is such an ISP – you have to notify them through a lengthy, ridiculous, and almost soul destroying procedure, involving proving that you own the domain, for them to allow you to send emails from a domain name that they do not host for you).</p> <p>-----</p> <p>Another case of SMTP Error 550 is <u>when the recipient's server is down</u> (or cannot receive mail at this time) and the ISP's servers will retry periodically for a limited amount of time (this is often accompanied by a return mail from</p>

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	<p>your ISP informing the sender of the email of just that situation).</p> <p>-----</p> <p>Another case of SMTP Error 550 is when the recipient's server requires you to make a change to the To part of your email to achieve successful delivery of the email (some organizations configure their receiving mail servers in this way <u>when they have changed their domain name and want to force the senders to update his address books</u> – for example, My-Great-Company.com has changed its domain to MyGreatCompany.com and you are still using the old domain name).</p> <p>-----</p> <p>Yet another set of circumstances when the SMTP Error 550 is received is <u>when the recipient's mailbox has been suspended</u>. For instance, the QMAIL SMTP mail program has an endearing way of telling you about a mailbox that has been suspended : <i>"I'm afraid I wasn't able to deliver your message to the following addresses. This is a permanent error; I've given up. Sorry it didn't work out. <email-address@email-domain>: <ip-address-of-remote-server> does not like recipient. Remote host said: 550 [SUSPEND] Mailbox currently suspended - Please contact correspondent directly."</i></p> <p>-----</p> <p>Another circumstance of an SMTP Error 550 is <u>when the recipient's mailbox has been disabled</u>. The typical reasons for this are the mailbox being full (the user needs to delete messages before new ones will be accepted) or the user not having paid a bill. An example of the reply you will receive is : <i>"550 mailbox temporarily disabled"</i></p>

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<p>551 – User not local or invalid address – Relay denied.</p>	<p>SMTP Error 551 : If neither the sending mail address nor the recipient's address are locally hosted by the server, then the ISP's servers may refuse to relay the message on.</p> <p>Some ISPs implement this restriction to thwart spammers. In our view, here at AnswersThatWork, this is a lazy and incompetent method of fighting spam as most of the time it does nothing but inconvenience no-one other than the ISP's vast majority of considerate and law abiding users. In our experience this usually goes hand in hand with barely competent technical support. At the time of writing, 14-Sep-2008, a typical culprit for this is BT, British Telecom, in the UK. The way in which it manifests itself is as follows : you have a domain that is hosted by CrystalTech.com but your ISP is DodgyISP.com and you try to send emails from your domain to WhatANiceBunchOfPeopleYouAre@yahoo.usa Neither your domain nor Yahoo.usa are hosted by <i>DodgyISP.com</i>, as a result your email is not accepted by <i>DodgyISP's</i> mail servers and your mail server is returned an SMTP Error 551. To correct the problem you have to call <i>DodgyISP.com</i> and ask them to enter your domain name as an <u>allowed sender</u>.</p>
<p>552 – Requested mail actions aborted – Exceeded storage allocation.</p>	<p>SMTP Error 552 : The user's mailbox has reached its maximum allowed size (this is often accompanied by a return mail from your ISP informing the sender of the email of just that situation).</p>
<p>553 – Requested action not taken – Mailbox name invalid.</p>	<p>SMTP Error 553 : There is an invalid email address in the "To", "CC", or "BCC" field of the email message.</p> <p>Here is a typical SMTP Error 553 response :</p> <p><i>"Hi. This is the QMAIL-send program at <ip-address>. I'm afraid I wasn't able to deliver your message to the following addresses. This is a permanent error; I've given up. Sorry it didn't work out. <Email-address-you're-sending-to> : <remote-mail-server-ip> does not like recipient. Remote host said: 553 5.3.0 <Email-address-you're-sending-to>. Addressee unknown. Giving up."</i></p>

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<p>554 – Transaction failed.</p>	<p>SMTP Error 554 : There was a permanent error trying to complete the mail transaction which will not be resolved by resending the message in its current form. Some change to the message and/or destination must be made for successful delivery.</p> <p>For instance, Yahoo often returns the following <u>if the recipient email address does not exist</u> on the Yahoo systems : <i>“554 delivery error: This user doesn't have a Yahoo.com account”</i>. Another typical Yahoo SMTP Error 554 reply is : <i>“554 delivery error: Sorry your message to <Email-Address> cannot be delivered. This account has been disabled or discontinued”</i>.</p> <p>-----</p> <p>In another example a remote mail server will sometimes return an SMTP ERROR 554 <u>when its anti-spam firewall does not like the sender's address</u>. When this happens the SMTP Error 554 is often buried in the middle of SMTP Error 550 errors. Here is an example of a remote mail server returning an SMTP Error 554 because its Barracuda anti-spam firewall appliance rejected the email :</p> <p><i>240.240.240.240 does not like recipient. Remote host said: 550-Verification failed for John.Doe@YourDomain.com 550-Called: 250.250.250.250 550-Sent: RCPT TO:John.Doe@YourDomain.com 550-Response: 554 : Service unavailable; Client host [server11.virgohosting.net] blocked using Barracuda Reputation; http://recipientdomain.barracudacentral.com/q.cgi?ip=230.230.230 550 Sender verify failed Giving up on 240.240.240.240</i></p>
<p>The following addresses had permanent delivery errors</p>	<p>“The following addresses had permanent delivery errors” / “The following address had permanent delivery errors” : Either of these sentences are usually followed by one or more email address(es).</p> <p>The error message is effectively saying that the email addresses listed do not exist, or no longer exist (if you used to be able to email to them successfully). You need to get the sender to verbally verify with the recipient what his/her new email address is.</p>

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