



PureConnect

Scalability and Performance

Office 365 recommendations and limitations with Interaction Center

PureConnect 2018 R1

Last updated January 31, 2018
(See Change Log for summary of changes)

Introduction

This document provides information about the limitations and recommendations for using Microsoft Office 365 for email routing when integrated with Customer Interaction Center (CIC) in PureConnect 2018 R1 and later. We update this document when we make significant changes to CIC. It is important to note that:

- We completed our testing on various generations of data center grade, physical hardware servers.
- Internet connection speeds can differ based on location and available bandwidth.

Testing results represented in this document are not inclusive of every scenario and results can differ from a production environment. We performed all email tests in a controlled lab environment with a shared connection to the Internet. Numerous environmental variables can cause your results to vary. These variables include but are not limited to system deployment options, network bandwidth availability, hardware specifications in certain deployments (processor speed, number of processors, RAM, disk I/O), number of workgroups that route email, users, total interactions in the system, and system customizations.

Based on these numerous environmental variables, consider your unique configuration and production needs. Test your system thoroughly before going into production and implementing new solutions to your existing system.

Limitations

To use this document, it is important to understand how email polling works in CIC. PostOfficeServer is the CIC subsystem that is responsible for email polling and works with ExchangeEWSCollectorU when specifically using any Exchange Web Service. One thread is dedicated to polling all the mailboxes used for email queuing. During each loop, that thread takes a snapshot of all the messages in a mailbox. The thread compares the snapshot to the previous snapshot to create a list of new messages. That list of new messages is put into a queue and processed by a pool of threads. The number of cores on the CIC server determines the number of threads in the pool. A thread in the pool takes the next list of messages in the queue and queues the messages. The side effect of this algorithm is that the rate at which messages are queued theoretically increases as the number of mailboxes used for email queuing increases, up to the number of cores on the CIC server. The rate of the increase is not linear since most of the work is I/O bound and not CPU bound.

The result is that it takes significantly longer for email messages to queue in a single workgroup queue using a single email account than it takes with multiple email accounts connected to that single workgroup. This result is also true for multiple workgroups with single mailboxes attached to each workgroup. The more email accounts that you are polling (up to the number of cores available to your CIC server) the faster you can queue email messages.

This result intensifies when using Office 365 as an email server for CIC. The time to queue a message does take longer than using a premises-based Exchange server. The following numbers can vary depending on your server and network infrastructure.

Exchange solution	# emails queued	# email accounts polled	Time to queue
Office 365	50,000	10	3 hours 30 minutes
Office 365	50,000	1	18 hours
Premises Exchange	50,000	10	2 hours 50 minutes
Premises Exchange	50,000	1	5 hours

Office 365 has policies in place to allow no more than one email per second per mailbox. For more information about the limits of using Office 365, refer to the Microsoft article Exchange Online Limits: <https://technet.microsoft.com/en-us/library/exchange-online-limits.aspx>

Also, note that more than 50,000 queued interactions in the system can cause a slowdown in the ACD Server which can affect the speed of assigning interactions to agents. More ramifications can exist for system customizations.

Recommendations

The following recommendations include general best practices and specific recommendations for using Office 365.

- When using Office 365, we highly recommended that you use multiple email accounts for routing emails to gain the highest possible queue rate. Remember, CIC can poll as many mailboxes as there are processor cores available to the CIC server.
- We recommend that the CIC server does not go over 50,000 interactions in queue. CIC does not fail with more interactions but a significant delay occurs for agents getting assigned interactions. If a business need requires more than 50,000 in queue, consider using more CIC server pairs.
- For more information on how email works with CIC and best practices, refer to Chapter 7: Mail System, in the PureConnect Installation and Configure Guide: https://help.genesys.com/cic/mergedProjects/wh_iandc/desktop/ic_pdfs/installation_configuration_guide.pdf
- Consider enabling “Mail Interaction Recovery” in your environment. After a Switchover without recovery enabled, the backup server must retrieve all the email messages again from the Exchange server. If you enable recovery, consider your network topology because email messages replicate from the primary to the backup in case a switchover occurs. If your implementation includes a Switchover pair, enable the replication of email interactions by adding the **Mail Interaction Recovery Enabled** server parameter in the Interaction Administrator **Server Parameters** container. Set the value to 1. A server restart is required for this server parameter to take effect. Keep in mind, setting the **Mail Interaction Recovery Enabled** server parameter increases network traffic between CIC servers.
- The CIC Processing Failed folder is a folder created under the Inbox of the queued mailbox. This folder contains any email that CIC cannot queue. An email in this folder will not be processed.

When an email fails to queue, a Windows Application event log messages states that the email moved to the CIC Processing Failed folder. For more information, refer to KB article: <https://my.inin.com/products/selfhelp/kb/Lists/KnowledgeBase/DisplayKB.aspx?ID=1542>

NOTE: The performance and limitations of PureConnect routing emails when you use Office 365 as an email server result from the hard limits set by Microsoft. For more information, refer to the Microsoft article Exchange Online Limits: <https://technet.microsoft.com/en-us/library/exchange-online-limits.aspx>

Change Log

Date	Change
1/31/2018	Initial release of this document.