

QMS Packet Forwarding Service Installation Guide

Version 5.3

This document contains information about the installation of the QMS Packet Forwarding Service. The purpose of the QMS Packet Forwarding Service is to send a copy of network traffic received at the server where the service is installed to other servers on the network. This service is necessary when the Call Recording Service is installed on a virtual machine in a Microsoft Hyper-V environment. The Packet Forwarding Service mimics packet sniffing in order to make the Call Recording Service work properly.

Windows Server Core installation prerequisites

Before installing the QMS Packet Forwarding Service, verify that the following prerequisites have been installed and enabled on your system.

Microsoft's Network Monitor

To install Microsoft's Network Monitor, complete the following steps.

- Download and install Microsoft's Network (64-bit) from the following location:
<http://go.microsoft.com/fwlink/?LinkID=107104&clid=0x409>

.Net Framework 4 (Full Installation)

To install .NET Framework 4 (Full Installation), complete the following steps.

- Download and install the Sever Core version of the .NET Framework 4 from the following location:
<http://go.microsoft.com/fwlink/?LinkID=211830>

Enable Server features

To run an installation that uses Windows Installer, indicated by a .msi file, some of the features must be enabled manually on Windows Server Core. To enable these features, complete the following steps.

1. Log in to the Windows Server Core machine, locally or through Remote Desktop.
2. At the command prompt, type `dism/online/enable-feature/featurename:NetFx2-ServerCore`.
3. If prompted, reboot the server and log back into the server after the reboot is finished.
4. At the command prompt, type `dism/online/enable-feature/featurename:NetFx2-ServerCore-WOW64`.
5. Proceed to the steps outlined in the *Installing the QMS Packet Forwarding Service* section.

System requirements

Processor:

- Dual core consumer grade or better

Memory:

- 2 GB memory (minimum)

Hard drive:

- 100+ GB, 7200 RPM minimum

Supported Operating Systems

- Windows 7 SP1
- Windows 7
- Windows Server 2008 R2 SP1 Server Core
- Windows Server 2008 R2 SP1
- Windows Server R2
- Windows Server 2008
- Windows Vista SP1
- Windows Server 2012
- Windows Server 2012 R2

Diagnostics

Windows Management Instrumentation Performance Counters

There are four or six counters added to the Windows Performance Monitor for the QMS Packet Forwarding Service. Respectively, depending on whether one or two packet filters are defined. The counters and a description of what they measure are as follows:

- Filter 1 Packets/sec: number of incoming packets to be processed by filter 1
- Filter 1 Bytes/sec: amount of data sent to all destinations associated with filter 1
- Filter 2 Packets/sec: number of incoming packets to be processed by filter 2
- Filter 2 Bytes/sec: amount of data sent to all destinations associated with filter 2
- Total Packets/sec: number of incoming packets to be processed by filter 1 and filter 2
- Total Bytes/sec: amount of data sent to all destinations by filter 1 and filter 2

Installing the QMS Packet Forwarding Service



Note

If installing onto Windows Server Core, follow the steps outlined in [Windows Server Core Installation Prerequisites](#) prior to completing the following steps.

To install the QMS Packet Forwarding Service, complete the following steps.

1. Extract the files from *Hyper-V_Support.zip*.
2. If installing on Windows Server Core, at the command prompt, change the directory to the location where the zip file was extracted and type in the following command:
msiexec/QMSPacketForwardingServiceSetup.msi.
3. If installing on an operating system other than Windows Server Core, double-click **setup.exe**.
 - Step through any prerequisite installs needed, accepting default values.
4. Click **Next** on the Welcome...page.
5. Click the **I Agree** and then click **Next** on the **License Agreement** page.
6. Click **Next** on the **Select Installation Folder** page to accept the default folder.
7. Click **Next** on the **Confirm Installation** window.
8. Click **Yes** on the **User Access Control** window if prompted.
9. After installation completes, open **Control Panel > Administrative Tools > Services**.
10. Stop the QMS Packet Forwarding Service.
11. Edit the *CallRexPacketForwardingService.exe.config* file located in the installation folder to specify the destination IP addresses and ports. See [Application Configuration file settings](#) for more information.
12. Save the changes to the config file and restart the service.

Uninstalling the Service

To uninstall the QMS Packet Forwarding Service, complete the following steps.

1. Go to **Control Panel > Add/Remove Programs (Programs > Uninstall** on Windows 7).
2. Right-click **QMS Packet Forwarding Service**.
3. Click **Uninstall**.
4. Click **Yes** to confirm the uninstallation of the QMS Packet Forwarding Service.
5. Click **Yes** on the User Access Control window if prompted. The Control Panel window displays when the uninstallation is complete.

To uninstall the QMS Packet Forwarding Service on Windows Server Core, complete the following steps.

1. In the Command window, type **QMSPacketForwardingServiceSetup.msi** and click **OK**.
2. Type **msiexec/x QMSPacketForwardingServiceSetup.msi** and press **Enter**.
3. Click **Yes** to confirm the uninstall of the QMS Packet Forwarding Service.
4. Click **OK** to close the application if prompted.

Application Configuration file settings

The *CallRexPacketForwardingService.exe.config*, file located in the program installation folder, contains the application-specific settings for the Forwarding Service. This file is a standard XML app config file that contains the following application-specific settings in the <appSettings> area:

- **Enable Logging:** Setting this value to **true** enables the creation and use of the QMS Packet Forwarding Service log file. This setting is generally used only for troubleshooting purposes as the log can grow to a large size quickly, based on network traffic. Therefore, this setting is **false** by default.
- **FilterCount:** Specifies the number of filters that are by the QMS Packet Forwarding Service. The default value is 0, where nothing is forwarded. The maximum value of filters is 2. If the number of filters is defined later in the file exceeds the FilterCount, then only the first X filter definitions are used, where X is the value of the FilterCount.
- **Filter1.FilterString:** The packet capture filter string used by Filter1. Packets that do not meet the criteria of the FilterString will not be forwarded to Filter1 destinations. When connected to the Recording Service, this value will be updated automatically by the Recording Service. Caution should be taken if updating the FilterString manually, since it is easy to overload a network with a poorly constructed string.
- **Filter1.InboundNicName:** The name of the network interface used to capture and forward packets to Filter1 destinations. This value is commonly **Local Area Connection**.
- **Filter1.OutboundNicName:** The name of the network interface used to send packets to Filter1 destinations. This value is commonly **Local Area Connection**.
- **Filter1.Destinations:** A list of IP/port pairs separated by a space to indicate locations where Filter1 should forward packets. Format should be <IP address>:<Port number>, such as 10.10.10.10:8000. IP addresses must be used since hostnames are not supported. A maximum of three IP address/port pairs can be defined per filter.
- **Filter2.FilterString:** The packet capture filter sting used by Filter2. Packets that do not meet the criteria of the FilterString will not be forwarded to Filter2 destinations. When connected to the Recording Service, this value will be updated automatically by the Recording Service. Caution should be taken if updating the FilterString manually, as it would be easy to overload a network with a badly constructed string.
- **Filter2.InboundNicName:** The name of the network interface used to capture packets for forwarding to Filter2 destinations. The value is commonly **Local Area Connection**.
- **Filter2.OutboundNicName:** The name of the network interface used to send packets to Filter2 destinations. This value is commonly **Local Area Connection**.
- **Filter2.Destinations:** A list of IP/port pairs separated by a space to indicate locations where Filter2 should forward packets.

The <baseAddress> setting, located in the <services>section of the config file, may need to be updated if there is a conflict with existing network application/ This setting is the IP address and port number of the WCF endpoint to which network heartbeat signals and filter updates will be sent. The default port number is 65400. The IP address should remain **localhost**.

Configuring the service with the Call Recording Service

To properly configure the QMS Packet Forwarding Service to forward packets to the Call Recording Service, you will need to configure the following information in the QMS Packet Forwarding Service configuration file.

1. Configure two filters, one for call recording packets and one for call control packets.
2. In the call recording filter, configure the following information:
 - **InboundNicName:** The name given to the networking adapter that receives audio packets from the network. For example, Local Area Connection.
 - **OutboundNicName:** The name given to the networking adapter used to forward packets to the Call Recording machine. For example, Local Area Connection 2.
 - **Destinations:** The IP of the Recording Server and the port to which packets will be forwarded. For example, 10.101.55.12:9965 for an IP of 10.101.55.12 and port 9965.
3. In the call control filter, configure the following information:
 - **InboundNicName:** The name given to the networking adapter that receives call control packets from the network. For example, Local Area Connection.
 - **OutboundNicName:** The name given to the networking adapter used to forward packets to the Call Recording machine. For example, Local Area Connection 2.
 - **Destinations:** The IP of the Recording Server and the port to which packets will be forwarded. For example, 10.101.55.12:9966 for an IP of 10.101.55.12 and port 9966.

The FilterString values for each filter should not be modified at this time, as the values will be updated by Call Recording once communication is established between the Recording Server and the QMS Packet Forwarding Service. Once the configuration changes have been made, restart the QMS Packet Forwarding Service.

To configure the Enhouse Interactive Call Recording Service to process the packets from the QMS Packet Forwarding Service, configure the Call Recording Service configuration file on the Recording Server. This file is located in the Call Recording installation directory for example: *C:\Program Files (x86)\QualityManagementSuite\CallRecordingService.exe.config*.

1. Locate the <appSettings> section within this file. Configure the following keys to enable Call Recording to listen for the packets being forwarded from the QMS Packet Forwarding Service.
 - **PacketForwardingOnly:** Set this value to **true** if the Recording Server only receives packets from QMS Packet Forwarding Services, and will not look for packets on the local network interface cards.
 - **NumInstancesOfCallRexPacketForwardingService:** Set this to the number of QMS Packet Forwarding Services that will send packets to Call Recording. Valid values are 0-5.
 - **CallRexPacketForwardingService1.ListeningIPAddress:** Set this to the IP address of the local network interface card used to listen for incoming packets from the first Packet Forwarding Service. This should match the destination IP address configured in the preceding key in the QMS Packet Forwarding Service destinations configuration.
 - **CallRexPacketForwardingService1.CCListeningPort:** Set this to the port number used to listen for Call Control packets. This should match the destination port number configured in the preceding key in the QMS Packet Forwarding Service destinations list for the Call Recording filter.
 - **CallRexPacketForwardingService1.CRListeningPort:** Set this to the port number used to listen for Call Recording packets. This should match the destination port number configured in the preceding key in the QMS Packet Forwarding Service destinations list for the Call Recording filter.
 - **CallRexPacketForwardingService1.CRPFSIPAddress:** Set this to the IP address of the QMS Packet Forwarding Service machine. This address is used to establish a

heartbeat filter, and update communication between Call Recording and the QMS Packet Forwarding Service machine.

- **CallRexPacketForwardingService1.CRPFSPort:** Set this to the port of the CallRexPacketForwardingService.PacketForwardingServiceListener WCF service on the QMS Packet Forwarding Service machine.
2. The Call Recording Service can receive packets from up to five different sources running the Packet Forwarding Service. Values must be defined in the Call Recording configuration file of each source. Simply copy each of the **CallRexPacketForwardingService1** keys and increment the **CallRexPacketForwardingService1** portion of the key for each source. For example, to add a second CallRex Packet Forwarding Service you would set the **NumInstancesofCallRexPacketForwardingService** key to two and create keys for:
 - CallRexPacketForwardingService2.ListeingIPAddress
 - CallRexPacketForwardingService2.CCListeningPort
 - CallRexPacketForwardingService2.CRListeningPort
 - CallRexPacketForwardingService2.CRPFSIPAddress
 - CallRexPacketForwardingService2.CRPFSPort
 3. Once the Enghouse Interactive Call Recording Service has been configured, restart service to have the changes take effect. Once the service has been restarted it should establish heartbeat communication with the QMS Packet Forwarding Service, update the necessary filters, and begin to process packets.

Call Recording Event Log Data

Installing the QMS Packet Forwarding Service creates a new Event Log called **QMS Packet Forwarding Service**, following the Applications and Service Logs folder in the Event Viewer. Entries written to this log can be informational or indications of an error. For example, the informational entries will be written:

- When the QMS Packet Forwarding Service starts or stops
- When there is a copy of the data in the application config file, which can be used to verify the number of filters is correct, as well as the count and the values of the destination IP/port pairs
- When a successful packet filter updates

Errors found in the Event Log include the following issues:

- Loss of network connection (heartbeat)
- Destination IP/port collisions (duplicate pairs)
- More filters or destinations defined than are allowed
- Invalid packet filter
- Updating packet filter strings
- Duplicate packet filter strings

The Event Viewer log is one of two main sources of information to look at when diagnosing a problem. The other source of information is the Consolidated Call Recording log, which the Packet Forwarding Service uses to record various messages when connected to a Call Recording Installation.

Consolidated Call Recording Log Messages

When the QMS Packet Forwarding Service is used in conjunction with Call Recording, the Packet Forwarding Service will write certain messages to the Consolidated Call Recording log. These messages can indicate errors, such as loss of network connection (error sending heartbeat) or failure to update a filter string. The messages can also be informational such as sending a heartbeat or filter update.

QMS Packet Forwarding Service Log

One other diagnostic tool is the log file created by the QMS Packet Forwarding Service itself. This file is not created by default, as it can quickly grow to a great size, depending on network traffic, and is normally used for troubleshooting purposes only. It contains various messages, including a verification of the application config file, loss of network connection, and others. See [Configuring the service with the Call Recording Service](#) for a description of how to enable this log file.

Troubleshooting

Issue	Steps to Take
Installation fails on a supported OS that is not Windows Server Core	<ol style="list-style-type: none"> 1. Verify that the account attempting to run the installer has appropriate permissions on the machine. 2. Verify that the machine has internet connectivity. If not, download prerequisite installers on the Packet Forwarding machine. 3. Restart the Packet Forwarding Service setup. 4. Review the Windows Application Event Log for any further details on the failure.
Installation fails on a Windows Server Core machine	<ol style="list-style-type: none"> 1. Verify that the prerequisites have been installed previously. 2. If the error message "The Windows Installer Service could not be accessed. This can occur if the Windows Installer is not correctly installed. Contact your support personnel for assistance" displays: <ol style="list-style-type: none"> a. At the command prompt, type dism /online /enable-feature /featurename:ServerCore-WOW64. b. Reboot the server if prompted. 3. If the error message "There is a problem with this Windows Installer Package. A DLL required for this install could not be run. Contact your support personnel or package vendor" displays: <ol style="list-style-type: none"> a. At the command prompt, type dism /online /enable-feature /featurename:NetFx2-ServerCore. b. Reboot the server if prompted. c. At the command prompt, type dism /online /enable-feature /featurename:NetFx2-ServerCore-WOW64. d. Reboot the server if prompted. 4. Log on to a separate machine that has Remote

	<p>Administration access to the Server Core machine and check the Application Event Log on the Server Core machine for more details on the error.</p>
<p>Installation appears to freeze or pause on Windows Server Core</p>	<ol style="list-style-type: none"> 1. The first step that the QMS Packet Forwarding Service installation process performs is checking for WinPcap dll files. If not already installed, they will be automatically. During the .dll file copy process, there can be status windows that pop up behind the <i>QMS Packet Forwarding Service install</i> window. It can appear that installation has frozen. 2. Move the QMS Packet Forwarding Service install window to see if there are any of these status windows. 3. Click OK on the status windows to continue.
<p>Service fails to start</p>	<ol style="list-style-type: none"> 1. In the Event Viewer, expand the Applications and Services Event Log node. Click the QMS Packet Forwarding Service Log and look for an <i>Exception...caught in CallRexPacketForwardingService.OnStart</i> message. <ol style="list-style-type: none"> a. Select the application config file to verify that the filter strings are valid. b. Confirm that there are no XML syntax errors in the application config file. 2. Select the Applications and Services Event Log for the QMS Packet Forwarding Service Log for a <i>PacketProcessor.OnStart: Capture device not found</i> message. <ol style="list-style-type: none"> a. Verify that a network interface card (NIC) is installed and properly configured in the machine. b. Confirm that the name of the NIC is the same as that specified for the InboundNicName for Filter1 and/or Filter2 as appropriate in the application config file. c. Confirm that the name of the NIC is the same as that specified for the OutboundNicName for Filter1 and/or Filter2 as appropriate in the application config file. 3. Enable logging for the Packet Forwarding Service by setting the EnableLogging value in the config file to True, restart the service, and consult the log for more information on any errors.
<p>Service starts, but no packets are forwarded</p>	<ol style="list-style-type: none"> 1. Check for an "Exception...caught trying to parse config file" entry in the <i>QMSPacketForwardingLog</i> in the Event Viewer Applications and Services Log area. <ol style="list-style-type: none"> a. Select the application config file to verify that at least one filter is defined. b. Verify that the FilterCount property is set to 1 if one filter is defined or 2 if two filters are defined. c. Verify that the destination IPs and ports are correct and reachable from the QMS Packet Forwarding Service machine. 2. Check for an "Exception...caught in QMSPacketForwardingService.UpdateConfiguration" entry or an Unable to update filter... entry in the <i>QMSPacketForwardingServiceLog</i> in the Event

	<p>Viewer.</p> <ol style="list-style-type: none"> a. Verify that the Filter and Destination specified in the error are correct. b. Confirm that no other process has the config file open. <ol style="list-style-type: none"> 3. Enable logging for the QMS Packet Forwarding Service by setting the EnableLogging value in the config file to True, restart the service, and consult the log for more information on any errors. 4. Start <i>Wireshark</i> (www.wireshark.org) on the QMS Packet Forwarding Service machine and confirm that no packets are leaving the Forwarding Service machine. 5. Start <i>Wireshark</i> on the machine that receives packets and verifies that no packets are being received. 6. Verify that any software or hardware firewalls between endpoints that allow traffic through on ports 65400 (or the port defined under <i>BaseAddress</i> in the application config file) and all destination ports defined in the application config file.
<p>Service starts, but only some packets are forwarded</p>	<ol style="list-style-type: none"> 1. Check for an "Exception...caught trying to parse config file" entry in the <i>QMSPacketForwardingServiceLog</i> in the Event Viewer Applications and Services Log area. <ol style="list-style-type: none"> a. Select the application config file to verify at least one defined filter. b. Verify that the FilterCount property is set to 1 if one filter is defined or 2 if two filters are defined. c. Verify that the destination IPs and ports are correct and reachable from the QMS Packet Forwarding Service machine. 2. Check for an "Exception...caught in QMSPacketForwardingService.UpdateConfiguration" entry or an Update to update filter... in the <i>QMSPacketForwardingServiceLog</i> in Event Viewer. <ol style="list-style-type: none"> a. Verify that the Filter and the Destination specified in the error are correct. b. Confirm that no other process has the config file open. 3. Select the application config file to verify that the filter strings are filtering out only specified traffic. 4. Select the Call Recording performance counters in the Performance Monitor to confirm that system resources are not overextended. 5. Enable logging for the QMS Packet Forwarding Service by setting the <i>Enable Logging</i> value in the config file to True, restart the service, and consult the log for more information on any errors. 6. Start <i>Wireshark</i> on the server running the QMS Packet Forwarding Service, as well as the server that should be receiving packets from the Service, to determine which packets are not forwarded. 7. Verify that any software or hardware firewalls between endpoints that allow traffic through ports 65400 (or the port defined under <i>BaseAddress</i> in the application config file) and all destination ports defined in the application config file.

Loss of network connectivity after Service starts	<ol style="list-style-type: none">1. Stop the Service to see if connectivity is restored. If so, there is likely a problem with the packet filter(s) or destination(s) causing a spike in network traffic.2. Restart the Service, and then start Wireshark on the QMS Packet Forwarding Service machine.3. Confirm unexpectedly large amount of traffic originating from the server.4. Verify that the filters in the application config file and Event Viewer are correctly formed and forwarding appropriate packets.5. Confirm that the destinations are reachable from the Service machine.6. Stop the service.7. Open the <i>CallRexPacketForwardingService.exe</i> config file located in the program installation folder (usually <i>C:\Program Files (x86)\QualityManagementSuite</i>).8. Update the filter strings by adding and not broadcast and not multicast at the end of each string.9. Restart the Service and Wireshark. Verify that network traffic is at normal levels.
---	--

Terms of Use

Any software ("Software") that is made available by Enghouse Interactive Inc. ("Enghouse"), together with any User Documentation ("User Documentation") is the copyrighted work of Enghouse. Use of the Software is governed by the terms of a Master Purchase Agreement, End User License Agreement, or similar software license agreement ("License Agreement"). End users are not legally authorized to install any Software that is accompanied by or includes a License Agreement unless he or she first agrees to the License Agreement terms.

The Software is made available for installation solely for use by users according to the License Agreement. Any reproduction or redistribution of the Software not in accordance with the License Agreement is expressly prohibited by law and may result in severe civil and criminal penalties. Violators will be prosecuted to the maximum extent possible.

WITHOUT LIMITING THE FOREGOING, COPYING OR REPRODUCTION OF THE SOFTWARE TO ANY OTHER SERVER OR LOCATION FOR FURTHER REPRODUCTION OR REDISTRIBUTION IS EXPRESSLY PROHIBITED, UNLESS SUCH REPRODUCTION OR REDISTRIBUTION IS EXPRESSLY PERMITTED BY THE LICENSE AGREEMENT ACCOMPANYING SUCH SOFTWARE.

THE SOFTWARE IS WARRANTED, IF AT ALL, ONLY ACCORDING TO THE TERMS OF THE LICENSE AGREEMENT. ENGHOUSE HEREBY DISCLAIMS ALL OTHER NON-EXPRESS WARRANTIES AND CONDITIONS WITH REGARD TO THE SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES AND CONDITIONS OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, AND NON-INFRINGEMENT.

Enghouse grants a nonexclusive license to customer for use of the User Documentation. The User Documentation contains copyrighted and other proprietary materials. By accepting the User Documentation, recipients agree that they will not transmit, reproduce, or make available to any external third-party this User Documentation or any information contained herein. Copying, reverse-engineering, or reselling any part of the Software or User Documentation is strictly prohibited.

The information contained in the User Documentation furnished by Enghouse is based on the most accurate information available at the time of printing. No representation or warranty is made by Enghouse as to the accuracy or completeness of such information or any ongoing obligation to update such information. Enghouse reserves the right to change the information contained in this document without notice.

Registered Trademarks

Syntellect®, Voiyager®, Continuum®, MediaVoice®, Apropos®, Envov®, Envov® Activecall, Envov CT ADE®, Envov CT Connect®, Dynamic Application Discovery®, Interaction Vault® CT Impact®, SmartDialer®, SmartVoice®, SmartCollect®, SmartSupport®, Zeacom®

TERMS AND CONDITIONS End User License Agreement

- Applicable Law; Definitions.** This End User License Agreement ("Agreement"), the definition of terms used, performance hereunder, and the interpretation of this Agreement shall be governed by and construed in accordance with the laws, other than the conflicts of laws rules, of the state of Arizona. If the Uniform Computer Information Transaction Act ("UCITA") is enacted as part of the law of the state of Arizona, such statute will not govern any aspect of this Agreement, any license granted hereunder or any of the parties' rights and obligations arising under this Agreement. "**Confidential Information**" means any non-public information or documentation provided by Supplier under this Agreement, including but not limited to Software, documentation, and information pertaining thereto. "**End-User Customer**" means the final licensor of Software who licenses for their use. "**Agreement**" means this document. "**Software**" means Supplier's proprietary Software and any third party proprietary software components licensed to Customer pursuant to this Agreement. "**Terms**" means, collectively, the terms and conditions set forth below and on the front of this Agreement.
 - Agreement.** This Agreement constitutes an acceptance of Customer's offer to license Software contingent and consistent upon the Terms contained herein. Any terms or conditions proposed by Customer inconsistent with or in addition to the Terms shall be void and of no effect, unless specifically agreed to in a signed writing by an authorized Supplier representative. Payment for Software by Customer or furnishing of the Software by Supplier, in whole or in part, shall constitute a binding agreement on the Terms of this Agreement. The failure of Supplier to insist upon performance of this Agreement, to enforce any of the Terms of this Agreement or other purchase orders from Supplier, or to exercise any right or privilege granted to Supplier under this Agreement or under law, shall not be construed as a waiver and the same shall continue in full force and effect.
 - License Grant.** Subject to Customer's compliance with the terms of this Agreement, Supplier grants to Customer a non-exclusive, non-transferable, perpetual license to install, use and execute the Software in object code form on a per-license basis consistent with the licensing scheme applicable to the type of software purchased on this Agreement at the location specified on the PSOF ("Software License") as may be changed by Customer from time to time upon prior written notice to Supplier, such Software License limited to the site(s), number of seats, concurrent users, agents, servers, ports, devices, managed applications, and/or copies as applicable to the Software obtained, not to exceed the number of licenses set forth on PSOFs placed pursuant to this Agreement. The Software License shall become effective upon Delivery of the Software and shall remain in force unless terminated pursuant to Section 12 of this Agreement. This right does not include permission to grant sub-licenses or otherwise transfer such rights. The Customer may make one (1) copy of the Software for non-productive archival purposes only, provided that it retains or affixes the equivalent of Supplier's proprietary legend and copyrights to the copy. Additionally, the Customer may make several copies of the system documentation, excluding training manuals and materials, provided that they are for internal use only. Customer may not reverse engineer, disassemble or otherwise translate the Software provided pursuant to this Agreement. Supplier, or any third party that owns the Software License, retains exclusive title to and all rights to the Software. The Customer acknowledges that the Software and documentation are the property of Supplier and that the only right that the Customer obtains to the Software is the right of use in accordance with the terms of this Agreement. To assist Supplier in the performance of its duties under this Agreement and in the protection of its proprietary rights, Customer hereby authorizes a Supplier representative to enter Customer's premises, physically or electronically, and inspect the Software License at reasonable times with prior notice.
 - Compliance with Laws.** Customer shall comply with all applicable laws, including, without limitation, the export control laws and regulations of the United States of America and those countries involved in transactions concerning the exporting of Software purchased under the terms and conditions or the control or regulation of the exportation of products or technical data supplied to Customer by Supplier. Customer will be responsible to pay all taxes, tariffs and duties. Customer shall comply with the United States Foreign Corrupt Practices Act and shall indemnify Supplier from Customer's violations of such Act. The United Nations Convention on the International Sale of Goods (CISG) is specifically excluded and shall not apply to any transaction contemplated herein.
 - Limited Warranty.** Supplier warrants to Customer that Software will perform in every material respect according to the published specifications for a period of thirty (30) days from Delivery. However, neither Supplier nor its third-party supplier's warrant Software will meet Customer's requirements or that the Software operation will be uninterrupted or error-free. Remedies for Software defects reported during the warranty period consist of (and are limited to), at Supplier's option, repairing, replacing or refunding the purchase price of the Software. This warranty is contingent upon the proper use and application of the Software in accordance with Supplier's instructions. The warranty does not (i) cover the Software if modified by anyone other than Supplier; (ii) apply if Software warranty support is requested as a result of accident, neglect, or operating conditions exceeding specifications; (iii) cover malfunctions caused by defects in or incompatibility to Customer's computer system or equipment; (iv) cover malfunctions caused by defects in or arising from the installation, repair, or programming of the Software other than by Supplier; and (v) apply if Customer has rejected or not used any Software corrections, updates, or modifications supplied or made available by Supplier. **THE WARRANTIES HEREIN DO NOT APPLY TO THIRD-PARTY SOFTWARE FURNISHED BY SUPPLIER UNDER THIS AGREEMENT, AND SUCH PRODUCTS ARE PROVIDED ON AN "AS IS" BASIS. AS APPLICABLE, SUPPLIER AGREES TO ASSIGN ANY WARRANTY IT MAY HAVE WITH RESPECT TO THIRD-PARTY SOFTWARE TO CUSTOMER, AND CUSTOMER AGREES TO PROCEED DIRECTLY AND EXCLUSIVELY AGAINST THE THIRD-PARTY SUPPLIER AS TO ANY CLAIMS OF WARRANTY. THE FOREGOING WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT.**
 - Limitation of Liability.** SUPPLIER'S LIABILITY FOR DAMAGES FOR ANY CAUSE WHATSOEVER, AND REGARDLESS OF THE FORM OF ACTION, SHALL BE LIMITED TO, AT SUPPLIER'S OPTION, REPAIR OR REPLACEMENT OF THE DEFECTIVE SOFTWARE. IN NO EVENT WILL SUPPLIER BE LIABLE FOR DAMAGES IN EXCESS OF THE FEES PAID PURSUANT TO AN ORDER THAT FORMS THE BASIS OF THE CLAIM. IN NO EVENT SHALL SUPPLIER BE LIABLE OR RESPONSIBLE FOR ANY REPROCUREMENT COSTS, LOSS OF PROFITS, LOSS OF USE, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR PUNITIVE DAMAGES OF ANY KIND, WHETHER IN AN ACTION OF CONTRACT OR TORT, EVEN IF ADVISED OF THE POSSIBILITY THEREOF. THIS LIMITATION OF LIABILITY AND EXCLUSION OF CERTAIN DAMAGES SHALL APPLY REGARDLESS OF THE SUCCESS OR EFFECTIVENESS OF OTHER REMEDIES. NO ACTION ARISING OUT OF OR IN CONNECTION WITH THIS AGREEMENT OR ANY TRANSACTION HEREUNDER MAY BE BROUGHT AGAINST SUPPLIER MORE THAN TWELVE (12) MONTHS AFTER THE CAUSE OF ACTION HAS ARISEN.
 - Relationship of the Parties.** Each party acknowledges that they are independent contractors, and that the relationship between Supplier and Customer is that of manufacturer/Customer. Neither party shall in any way represent or obligate the other party to any contract, term, or condition, nor may it represent the other party as agent, employee, franchisee, or in any other capacity. Customer is expressly prohibited from making representations to other third parties regarding Supplier or the Software and Services in excess of or contrary to representations contained in Supplier's or its third-party supplier's product specifications, brochures, newsletters, and other publications provided to Customer by Supplier. Nothing in this Agreement shall be construed to limit either party's right to independently develop or distribute products which are functionally similar to the other party's products, so long as Confidential Information of the other party is not used in such development or distribution.
 - Assignment.** Neither this Agreement nor any rights under it may be assigned by Customer without Supplier's prior written consent. Any unauthorized assignment by Customer shall be void. Supplier may assign the Agreement, in whole or in part, upon thirty (30) days' notice to the Customer.
 - Severability.** If a court of competent jurisdiction holds any provision in this Agreement to be invalid, void, or unenforceable, the remaining provisions will yet continue in full force without being impaired or invalidated in any way.
 - Notices.** Any notices given to Supplier may be made either by facsimile, overnight courier, hand delivery, or by registered or certified mail, postage prepaid with return receipt requested. Mailed notices shall be addressed to Supplier at the address appearing below, but Supplier may change such address by written notice in accordance with this paragraph. Notices mailed, or delivered personally or by electronic means will be deemed communicated as of actual receipt or the date of transmission, as applicable.
- Office of the General Counsel
2095 West Pinnacle Peak Road, Ste 110
Phoenix, Arizona 85027
- Confidentiality.** The parties agree to accept in confidence all Confidential Information provided to them. The parties further agree not to use or disclose any Confidential Information supplied by the other except as required to perform their obligations in accordance with this Agreement. Any disclosure of Confidential Information to agents or employees shall be made only in the normal course of business, on a need-to-know basis, within the scope and purpose of this Agreement, and under written agreements requiring such agents or employees to treat all such information as strictly confidential. The parties agree not to use, publish, reproduce, disseminate, or otherwise disclose the other's proprietary or Confidential Information, including, but not limited to customer lists, without the prior written consent of the other. Customer shall not develop, manufacture, maintain, or, except as contemplated under this Agreement, market products or services incorporating Supplier's Confidential Information or Software. Customer agrees to include Supplier's proprietary notice on all copies of Supplier's Confidential Information made by Customer and to maintain records of the location of these copies. Customer agrees that the Software, and any proprietary and/or trade secret information and data furnished to Customer by Supplier or any of its third-party suppliers will be considered Confidential Information and subject to the provisions of this Section. Supplier reserves for itself all proprietary rights in all designs, engineering details, and other data pertaining to the Software and other proprietary data arising out of work done in connection with designing, manufacturing, servicing, and testing the Software, including the sole right to manufacture and, except as provided herein, market all such items. Customer shall not reverse, translate, disassemble, or decompile the Software or any component of the Software.
 - Entire Agreement.** This Agreement is the entire agreement of the parties regarding the subject matter hereof, and supersedes and terminates any prior agreements, understandings or representations, written or oral, except with respect to any trade indebtedness owing between the parties.