Intel® QuickAssist for Windows*

Release Notes

Package Version: W.1.6.0-0004
Revision 006US

August 2021
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## Revision History

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<thead>
<tr>
<th>Document Number</th>
<th>Revision Number</th>
<th>Description</th>
<th>Revision Date</th>
</tr>
</thead>
</table>
| 337758          | 006             | Intel® QuickAssist Software release W.1.6.0-0004  
• Updated Section 1.1 to include Intel® Xeon® third generation platforms  
• Updated Section 1.2 – Supported Operating Systems  
• Updated Section 1.3 – Package Version  
• Updated Section 1.4 – What’s New  
• Updated Table 4 - Intel® QAT Software Release Feature History  
• Added APIs new Section 1.6 – Data Compression Services  
• Moved QATE-74339 to Resolved Issues | August 2021 |
| 337758          | 005             | Intel® QuickAssist Software release 1.5.0-0007  
• Added Windows® Host Virtualization support via SR-IOV. Currently, only Linux® QAT VF’s are supported.  
• Added Software Fallback for the Windows® PF driver to support Linux® Guests with the QAT Linux® VF using QAT Engine Applications  
• Added QATzip support for the systems without QAT hardware and services. All deflate compression operations will take the software path using ISA-L if software fallback is specified | June 2021 |
| 337758          | 004             | Intel® QuickAssist Software release 1.4.0-0007  
• Updated Supported OSs  
• Add support for Intel® Atom® C3000 with Intel® QAT  
• Updated Windows® QATzip to use standard QATzip header file  
• Added support for the gzip and gzipext data format  
• Added support of ISA-L SW Fallback for gzip and gzipext data formats | March 2021 |
| 337758          | 003             | Intel® QuickAssist Software release 1.3.0-0009  
• Updated Windows® Software Release version v1.3.0-0009  
• Added new sections 1.3.1 What’s New and 1.3.2 Software Release History  
• Updated Features Paragraph 13, compression/decompression features  
• Updated Section 3.0 removing Neoncity security accelerators  
• Added Known Issues: QATE 38968, 40170  
• Added Resolved Issue: QATE-37219 | April 2020 |
| 337758          | 002             | Intel® QuickAssist Software release v1.1.0-29  
• Removed Support for Windows® Server 2012  
• Added known issues QATE-37219 and QATE-36847 | March 2019 |
- Resolved QATE-15336, Parcomp/FVL25 Driver Compatibility Issue Server 2012 R2 Update 1
- Section 1.1 Supported Platforms updated

<table>
<thead>
<tr>
<th>337758</th>
<th>001</th>
<th>Initial release</th>
<th>June 2018</th>
</tr>
</thead>
</table>

§
This document contains information on the accompanying Intel® QuickAssist Technology (Intel® QAT) Windows* Software release v1.6.0-0004. This document also describes extensions and deviations from the release functionality described in Table 6, Intel® QuickAssist Technology Software for Linux* Software Programmer’s Guide for the various platforms that support Intel® QAT.

**Note:** These release notes may include known issues with third-party or reference platform components that affect the operation of the software.

### 1.1 Supported Hardware Platforms

The software in this release has been validated against the following devices:

- Intel® QuickAssist Adapter 8960 and 8970
- Intel® Xeon® Scalable Platform with Intel® C62x Chipset (with Intel® QAT)
- Intel® Xeon® D Platform with Intel® C62x Chipset (with Intel® QAT)
- Intel® Atom® C3000 with Intel® QAT
- Intel® Xeon® third generation platforms

**Note:** Intel® QAT supports Intel® Xeon® Scalable first and second generations.

### 1.2 Supported Operating Systems

The software in this release has been validated against the following Operating Systems (OS):

- Windows* Server 2022
- Windows* Server 2019
- Windows* Server 2016
- Windows* Server 20H1
- Windows* Server 20H2
- Windows* 10 Enterprise 2019 LTSC (Intel® Atom® SKU only)

Below are the currently validated Bare-Metal/Host Operating Systems supported for this release.

**Table 1. Validated Bare-Metal/Host Operating Systems Supported for This Release**

<table>
<thead>
<tr>
<th>Host Operating System</th>
<th>Intel® QAT 8960/8970/C62x</th>
<th>Intel® QAT C3000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows* Server 2016</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Windows* Server 2019</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>
Below are the currently validated Guest Operating Systems supported with this release.

### Table 2. Validated Guest Operating Systems Supported for This Release

<table>
<thead>
<tr>
<th>Guest Operating System</th>
<th>Intel® QAT 8960/8970/C62x</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows* Server 2016</td>
<td>No</td>
</tr>
<tr>
<td>Windows* Server 2019</td>
<td>Yes</td>
</tr>
<tr>
<td>Windows* Server 2022</td>
<td>No</td>
</tr>
<tr>
<td>Windows* 10 Enterprise LTSC</td>
<td>No</td>
</tr>
<tr>
<td>Ubuntu* 16.04 LTS, Kernel 4.15</td>
<td>Yes</td>
</tr>
<tr>
<td>Ubuntu* 18.04 LTS, Kernel 4.15</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Note:** Other Host/Guest Operating System combinations may work but has not been validated by Intel®.

### 1.3 Package Version

The following table shows the OS-specific package versions for each platform supported in this release.

### Table 3. Package Version

<table>
<thead>
<tr>
<th>Chipset or SoC</th>
<th>Package Version</th>
<th>SHA256 Checksum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top-Level Package</td>
<td>W.1.6.0-0004.zip</td>
<td>05A246C0DFD0DB186AA92F39F2812A0742554639B3A05637705CA338D7C74</td>
</tr>
</tbody>
</table>

**Note:** This software release has passed the Windows* Hardware Lab Kit (HLK*) Certification and contains certified device drivers.

This release was validated with the following software versions running in Ubuntu 18.04 Virtual Machine:

- Intel® QAT W.1.6.0-0004 driver
- Intel® QATzip v1.0.5
• Intel® ISA-L 2.30 DLL (for compression/decompression Software Fallback)
• Intel® QAT L.4.14.0-00031 driver (for Linux* Virtual Function)
• Async Nginx 0.45 with QAT-Engine 0.6.5 and OpenSSL 1.1.1j (for Linux* Virtual Function QAT-Engine Software Fallback)

1.4 What’s New
• Added Windows* Virtual Function support for Windows* Server 2019 for Intel® QAT 8970/C62x devices (currently compression support only)
• Added support for Windows* Server 2022 OS
• ISA-L NuGet package integration into the QAT Windows* driver package. This is available in Standalone Mode
• Added support for qzCompressExt and qzDecompressExt. This allows the end user access to extended return codes (e.g., to determine if SW or HW was used during the compress/decompress call)
• Added support to install QAT software (qatzip.dll) on systems without QAT hardware
• Removed support for Kernel Mode PKE
• WPP support for base driver, QATzip, and CfQat

1.5 Intel® QAT Software Release Feature History

Table 4. Intel® QAT Software Release Feature History

<table>
<thead>
<tr>
<th>Release History</th>
<th>New Features</th>
</tr>
</thead>
</table>
| Release W.1.5.0-0007 | • Added Windows* Host Virtualization support via SR-IOV. Currently, only Linux* QAT VF’s are supported  
• Added installation modes. Standalone is the same as previous drivers; it will install the QAT base driver, compression, and crypto service. Hyper-V mode will only install the QAT base driver in SR-IOV mode. This requires a system reboot. Do not use Hyper-V mode if compression or crypto services are needed on the Host partition  
• Added Software Fallback for the Windows* PF driver to support Linux* Guests with the QAT Linux* VF using QAT Engine Applications  
• Added QATzip support for the systems without QAT hardware and services. All deflate compression operations will take the software path using ISA-L if software fallback is specified |
| Release 1.4.0-0007 | • Added support for Intel® Atom® C3000 with Intel® QAT  
• Updated Windows* QATzip to use standard QATzip header file  
• Added support for the gzip and gzipext data format  
• Added support of ISA-L SW Fallback for gzip and gzipext data formats |
| Release 1.3.0-0009 | • Software fallback in the event of hardware failure for cryptography and compression services |
1.6 Data Compression Services

This software package provides the following Data Compression services:

- Static Deflate Stateless compression/decompression
- Dynamic Deflate Stateless compression/decompression
- Includes sample code application for compression services – parcomp

For ISA-L integration, the source code and information to build the DLL can be found in Table 6, Intel® Intelligent Storage Application Library GitHub. The minimum required version is 2.26.0.

The QATZip file includes the following compression/decompression functions:
- qzInit
- qzSetupSession
- qzCompress
- qzDecompress
- qzTeardownSession
- qzClose
- qzMalloc
- qzFree
- qzGetStatus
- qzGetDefaults
- qzSetDefault
- qzCompressExt
- qzDecompressExt
- qzMaxCompressedLength

1.7 Cryptography Services

This software package also provides the following cryptography services.

Support for PKE cryptography services include:
• Cryptography API: Next-Generation (CNG) support, sometimes referred to as the “BCrypt API.” Refer to Cryptography API: Next-Generation, Table 5.

• An Intel® QuickAssist CNG provider is registered to support the following PKE algorithms:
  − Rivest-Shamir-Adleman (RSA)
  − Digital Signature Algorithm (DSA)
  − Elliptic Curve Digital Signature Algorithm (ECDSA) (P256, P384, P521)
  − Diffie–Hellman (DH)
  − Elliptic-curve Diffie–Hellman ECDH (P256, P384, P521)

• CNG API support in user mode

### 1.8 Customer Support

Intel® offers support for this software at the Application Program Interface (API) level, defined in Table 5 and Table 6 of the Programmer Guides and API reference manuals. If the field representative has created an account for you, submit support requests via the Online Service Center, [https://supporttickets.intel.com/?lang=en-US](https://supporttickets.intel.com/?lang=en-US).

### 1.9 List of Files in This Release

The Bill of Materials (BOM) is included as a text file in the released software package. This text file is labeled “filelist” and located at the top directory level for each release package.

### 1.10 Reference Documents

Table 5 lists Intel® QuickAssist Technology’s generic documentation.

Table 6 lists Intel® QuickAssist Technology specific documentation.

#### Table 5. Intel® QuickAssist Technology’s Generic Documentation

<table>
<thead>
<tr>
<th>Document</th>
<th>Document Number/ Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel® QuickAssist Technology API Programmer’s Guide</td>
<td>330684</td>
</tr>
<tr>
<td>Intel® QuickAssist Technology Performance Optimization Guide</td>
<td>330687</td>
</tr>
</tbody>
</table>
### Table 6. Intel® QuickAssist Technology Software Specific Documentation

<table>
<thead>
<tr>
<th>Document</th>
<th>Document Number/ Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel® QuickAssist Technology Software for Linux* Software Programmer’s Guide</td>
<td>336210</td>
</tr>
</tbody>
</table>

### 1.11 Terminology

#### Table 7. Terminology

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>API</td>
<td>Application Program Interface</td>
</tr>
<tr>
<td>AES</td>
<td>Advanced Encryption Standard</td>
</tr>
<tr>
<td>BOM</td>
<td>Bill of Materials</td>
</tr>
<tr>
<td>CNG</td>
<td>Cryptography API: Next Generation</td>
</tr>
<tr>
<td>DH</td>
<td>Diffie–Hellman</td>
</tr>
<tr>
<td>DSA</td>
<td>Digital Signature Algorithm</td>
</tr>
<tr>
<td>ECDH</td>
<td>Elliptic-curve Diffie–Hellman</td>
</tr>
<tr>
<td>ECDSA</td>
<td>Elliptic Curve Digital Signature Algorithm</td>
</tr>
<tr>
<td>WHLK*</td>
<td>Windows* Hardware Lab Kit</td>
</tr>
<tr>
<td>Intel® QAT</td>
<td>Intel® QuickAssist Technology</td>
</tr>
<tr>
<td>OS</td>
<td>Operating System</td>
</tr>
<tr>
<td>PKE</td>
<td>Public Key Encryption</td>
</tr>
<tr>
<td>RSA</td>
<td>Rivest-Shamir-Adleman</td>
</tr>
</tbody>
</table>
2 Limitations, Known Issues and Resolved Issues

This section provides the all known limitations and known issues for this release. For detailed information on features/limitations, please refer to the README.txt file inside the software package (./QuickAssist/README.txt).

2.1 Limitations

This release does not support the following:

- Static Deflate Stateful compression/decompression
- Dynamic Deflate Stateful compression/decompression
- Symmetric (bulk) cryptography algorithms like Advanced Encryption Standard (AES)
- Fallback for Cryptography services
- Compression Software Fallback/Servicing for Windows* SR-IOV use case

2.2 Known Issues

The known issues and resolved issues with this software release are listed below:

2.2.1 WCAT workload has ECDHE curve25519 failure

<table>
<thead>
<tr>
<th>Title</th>
<th>WCAT workload has ECDHE curve25519 failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference #</td>
<td>QATE-38965</td>
</tr>
<tr>
<td>Description</td>
<td>The ECDHE curve &quot;curve25519&quot; is the default curve for ECDHE in Windows*. The WCAT workload on IIS fails to authenticate when using Intel® QAT to run ECDHE and RSA, using the default curve preference order.</td>
</tr>
<tr>
<td>Resolution</td>
<td>Two possible resolutions:</td>
</tr>
<tr>
<td></td>
<td>Change the default ECDH curve in Windows* to be a curve that is supported by Intel® QAT. The result is that ECDH is executed on Intel® QAT (but not using curve25519).</td>
</tr>
<tr>
<td></td>
<td>Use the CPMCNGInstaller tool to unregister ECDH provider for QAT. The result is that ECDH is executed on the CPU using the default curve25519.</td>
</tr>
<tr>
<td>Affected OS</td>
<td>Windows* Server 2016/2019</td>
</tr>
<tr>
<td>Driver/Module</td>
<td>QAT IA – Crypto</td>
</tr>
</tbody>
</table>
## Limitations, Known Issues and Resolved Issues

### 2.2.2 Parcomp unable to read > 1GB file for compression

<table>
<thead>
<tr>
<th>Title</th>
<th>Parcomp unable to read &gt; 1GB file for compression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference #</td>
<td>QATE-40170</td>
</tr>
<tr>
<td>Description</td>
<td>Parcomp is unable to read large files (test file was 2.2 GB) for compression. Thus, compression would fail.</td>
</tr>
<tr>
<td>Resolution</td>
<td>When writing an application with QATZIP, chunk the file into at most 1GB increments.</td>
</tr>
<tr>
<td>Affected OS</td>
<td>Windows* Server 2016/2019</td>
</tr>
<tr>
<td>Driver/Module</td>
<td>QAT IA – Compression</td>
</tr>
</tbody>
</table>

### 2.2.3 Cngtest does not validate fallback operations are working correctly

<table>
<thead>
<tr>
<th>Title</th>
<th>Cngtest does not validate fallback operations are working correctly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference #</td>
<td>QATE-38968</td>
</tr>
<tr>
<td>Description</td>
<td>Currently, the Cngtest does not include tests to validate the fallback to the Microsoft* provider works for unsupported algorithms and curves. Environment: Supermicro* X11 Intel® QAT Microserver with 2x 37C8 devices Windows* Server 2016 The Cngtest cannot validate fallback operations. If encryption is performed by SW, it needs to ensure that decryption can be performed by the Intel® QAT HW or vice-versa.</td>
</tr>
<tr>
<td>Resolution</td>
<td>There is currently no workaround for this, and it may be added in a future release.</td>
</tr>
<tr>
<td>Affected OS</td>
<td>Windows* Server 2016/2019</td>
</tr>
<tr>
<td>Driver/Module</td>
<td>QAT IA – Crypto</td>
</tr>
</tbody>
</table>

### 2.2.4 Sending malicious data to the VF may result in PCIe Push/Pull Parity Error or NMI

<table>
<thead>
<tr>
<th>Title</th>
<th>Sending malicious data to the VF may result in PCIe Push/Pull Parity Error or NMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference #</td>
<td>QATE-41844</td>
</tr>
<tr>
<td>Description</td>
<td>When sending malicious or malformed data to the QAT VF driver, especially in kernel mode operations, you may see a PCIe Push/Pull Parity error or in the worst and rare case, a NMI error.</td>
</tr>
<tr>
<td>Resolution</td>
<td>There is currently no workaround for this, it is a hardware limitation.</td>
</tr>
<tr>
<td>Title</td>
<td>Sending malicious data to the VF may result in PCIe Push/Pull Parity Error or NMI</td>
</tr>
<tr>
<td>---------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Affected OS</td>
<td>Windows* Server 2019 Hyper-V and newer</td>
</tr>
<tr>
<td>Driver/Module</td>
<td>QAT IA</td>
</tr>
</tbody>
</table>

### 2.2.5 Compression may randomly fail (qzSetupSession error) after driver installation

<table>
<thead>
<tr>
<th>Title</th>
<th>Compression may randomly fail (qzSetupSession error) after driver installation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference #</td>
<td>QATE- 71057</td>
</tr>
<tr>
<td>Description</td>
<td>After a driver installation, there may be a rare occurrence where compression operations will fail qzSetupSession continuously.</td>
</tr>
<tr>
<td>Resolution</td>
<td>Restart the system</td>
</tr>
<tr>
<td>Affected OS</td>
<td>Windows* Server 2016 and newer</td>
</tr>
<tr>
<td>Driver/Module</td>
<td>QAT IA – Compression</td>
</tr>
</tbody>
</table>

### 2.2.6 Multiple concurrent PF/VF comms operations will put VF device in bad state

<table>
<thead>
<tr>
<th>Title</th>
<th>Multiple concurrent PF/VF comms operations will put VF device in bad state.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference #</td>
<td>QATE- 67282</td>
</tr>
<tr>
<td>Description</td>
<td>Operations that require multiple concurrent PF/VF communications may result in putting the VF in a bad state. Such operations generally include bring the VF up or down simultaneously (such as during a precisely timed driver installation across multiple VM’s and VF’s).</td>
</tr>
<tr>
<td>Resolution</td>
<td>Restart the affected VM</td>
</tr>
<tr>
<td>Affected OS</td>
<td>Windows* Server 2019 Hyper-V and newer</td>
</tr>
<tr>
<td>Driver/Module</td>
<td>QAT IA</td>
</tr>
</tbody>
</table>
## Limitations, Known Issues and Resolved Issues

### 2.2.7 Possible MIN macro redefinition error in qatzip.h header file

<table>
<thead>
<tr>
<th>Title</th>
<th>Possible MIN macro redefinition error in qatzip.h header file</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference #</td>
<td>QATE-77024</td>
</tr>
</tbody>
</table>
| Description | The QATzip.h header file defines the macro - MIN as:  
#define MIN(a,b) (((a)<(b))?(a):(b))  
Since this is a very common macro definition, it is likely to be defined in many system headers and as a result, can lead to “macro re-definition” errors. |
| Resolution | Change the macro name or include an #ifndef around the macro |
| Affected OS | Windows* Server 2016/2019/2022 |
| Driver/Module | QAT IA - Compression |

### 2.2.8 Performance counters are not removed after uninstalling package

<table>
<thead>
<tr>
<th>Title</th>
<th>Performance counters are not removed after uninstalling package</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference #</td>
<td>QATE-76357</td>
</tr>
<tr>
<td>Description</td>
<td>QAT performance counters are not being uninstalled on certain versions of Windows*.</td>
</tr>
<tr>
<td>Resolution</td>
<td>Counters can be manually removed.</td>
</tr>
<tr>
<td>Affected OS</td>
<td>Windows* Server 2016/2019</td>
</tr>
<tr>
<td>Driver/Module</td>
<td>QAT IA – Base Driver</td>
</tr>
</tbody>
</table>

### 2.2.9 Installation temp folder not deleted when QAT installed as normal user

<table>
<thead>
<tr>
<th>Title</th>
<th>Installation temp folder not deleted when QAT installed as normal user</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference #</td>
<td>QATE-76914</td>
</tr>
<tr>
<td>Description</td>
<td>When QAT in installed as a normal user, the installation temporary folder is not deleted after install is finished or cancelled.</td>
</tr>
<tr>
<td>Resolution</td>
<td>The Windows* QAT driver package requires Administrator privileges to install correctly. Folder may be removed manually.</td>
</tr>
<tr>
<td>Affected OS</td>
<td>Windows* Server 2016/2019/2022</td>
</tr>
</tbody>
</table>
### Limitations, Known Issues and Resolved Issues

<table>
<thead>
<tr>
<th>Title</th>
<th>Installation temp folder not deleted when QAT installed as normal user</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driver/Module</td>
<td>QAT IA – Installer</td>
</tr>
</tbody>
</table>

#### 2.2.10 Uninstalling QAT PF driver with active Windows* Guests QAT VF’s may cause VM shutdown issues

<table>
<thead>
<tr>
<th>Title</th>
<th>Uninstalling QAT PF driver with active Windows* Guests QAT VF’s may cause VM shutdown issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference #</td>
<td>QATE- 76930</td>
</tr>
<tr>
<td>Description</td>
<td>When uninstalling the QAT PF driver while there are active QAT VF’s on Windows* Guests (Windows* Server 2019 and earlier), it may lead to instability when restarting or shutting down those Guests.</td>
</tr>
<tr>
<td>Resolution</td>
<td>This is an OS limitation, as the same situation does not happen on Windows* Server 2022; the workaround for older OS’s is to remove the QAT VF’s (via Remove-VMAssignableDevice) first before attempting to uninstall the QAT PF driver.</td>
</tr>
<tr>
<td>Affected OS</td>
<td>Windows* Server 2016/2019</td>
</tr>
<tr>
<td>Driver/Module</td>
<td>QAT IA – Base Driver</td>
</tr>
</tbody>
</table>

#### 2.3 Resolved Issues

#### 2.3.1 Default curve order for elliptic curves not supported by QAT

<table>
<thead>
<tr>
<th>Title</th>
<th>Default curve order for elliptic curves not supported by QAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference #</td>
<td>QATE-37219</td>
</tr>
</tbody>
</table>
| Description | The default curve order on Windows* when using cipher suites with ECDHE is as follows:

```
curve25519 NistP256 NistP384
```

Since `curve25519` is not supported by Intel® QAT, cryptography operations will fail when using cipher suites with `ECDHE`. However, the `NistP256` and `Nist384` curves are supported by Intel® QAT, so if the curve priority order is changed as shown below, cryptography operations when using cipher suites with `ECDHE` will succeed:

```
NistP256
NistP384 curve25519
```

| Resolution | Modify the default ECC Curve Order as below:
Launch the Group Policy Editor: `gpedit.msc`
Open Computer Configuration/Administrative |
### Limitations, Known Issues and Resolved Issues

<table>
<thead>
<tr>
<th>Title</th>
<th>Default curve order for elliptic curves not supported by QAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Template/Network/SSL Configuration Settings</td>
<td>Double-click ECC Curve Order (in the right pane)</td>
</tr>
<tr>
<td></td>
<td>Click <strong>Enabled</strong></td>
</tr>
<tr>
<td></td>
<td>Edit the ECC Curve Order in the priority order described above.</td>
</tr>
<tr>
<td></td>
<td>Click ‘<strong>Apply</strong>’ and exit the application</td>
</tr>
<tr>
<td><strong>Affected OS</strong></td>
<td>Windows* Server 2019/2016</td>
</tr>
<tr>
<td><strong>Driver/Module</strong></td>
<td>QAT IA – Crypto</td>
</tr>
</tbody>
</table>

#### 2.3.2 QAT driver and service are sometimes not removed after uninstallation

<table>
<thead>
<tr>
<th>Title</th>
<th>QAT driver and service are sometimes not removed after uninstallation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reference #</strong></td>
<td>QATE-65388</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>After uninstalling the QAT driver using control panel or the command line, the driver file icp_qat.sys and the associated Windows* service do not get removed properly. Upon reboot, devices in Device Manager will show error code 32.</td>
</tr>
<tr>
<td><strong>Resolution</strong></td>
<td>In device manager, right click and uninstall with remove files checked, manually remove icp_qat.sys file.</td>
</tr>
<tr>
<td><strong>Affected OS</strong></td>
<td>Windows* Server 2019</td>
</tr>
<tr>
<td><strong>Driver/Module</strong></td>
<td>QAT IA – General</td>
</tr>
</tbody>
</table>

#### 2.3.3 Cannot disable driver while parcomp (compression) is running

<table>
<thead>
<tr>
<th>Title</th>
<th>Cannot disable driver while parcomp (compression) is running</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reference #</strong></td>
<td>QATE-36847</td>
</tr>
</tbody>
</table>
| **Description**                                                      | When running **parcomp** stress tests, you cannot disable all 37c8 Intel® QAT devices. Doing so may cause the driver to disable to spin until the **parcomp** process is stopped.  
The issue has been observed mostly on Skylake-D systems.  
Environment:  
Supermicro® X11 Intel® QAT Microserver with 2x 37C8 devices  
Windows® Server 2016  
W.1.1.0-0029 drivers  
Steps:  
Run a **parcomp** stress test. Automation runs with the following parameters: |
### Limitations, Known Issues and Resolved Issues

<table>
<thead>
<tr>
<th>Title</th>
<th>Cannot disable driver while parcomp (compression) is running</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><code>.\parcomp.exe -i C:\\CompressionFiles\silesia -o C:\\CompressionFiles\compress -p qat -Q -t 6 -k 4096 -j 60 -x 2 -n 200</code></td>
</tr>
<tr>
<td></td>
<td>Disable 37c8 devices, one at a time until no more left (sometimes may occur on the first 37c8 disable).</td>
</tr>
<tr>
<td></td>
<td>Last, disable should keep spinning until <code>parcomp</code> thread is stopped.</td>
</tr>
<tr>
<td>Resolution</td>
<td>This is resolved with the QAT1.5.0-0007 release.</td>
</tr>
<tr>
<td>Affected OS</td>
<td>Windows* Server 2019/2016</td>
</tr>
<tr>
<td>Driver/Module</td>
<td>QAT IA – Compression</td>
</tr>
</tbody>
</table>

#### 2.3.4 Windows* Setup /passive install has crypto failures

<table>
<thead>
<tr>
<th>Title</th>
<th>Windows* Setup /passive install has crypto failures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference #</td>
<td>QATE-38404</td>
</tr>
<tr>
<td>Description</td>
<td>When you use the '/passive' option for installation, it seems that Crypto will fail after a few iterations.</td>
</tr>
<tr>
<td>Resolution</td>
<td>This is resolved with the QAT1.5.0-0007 release.</td>
</tr>
<tr>
<td>Affected OS</td>
<td>Windows* Server 2019/2016</td>
</tr>
<tr>
<td>Driver/Module</td>
<td>QAT IA – Crypto</td>
</tr>
</tbody>
</table>

#### 2.3.5 System crash when calling QATZip API function incorrectly

<table>
<thead>
<tr>
<th>Title</th>
<th>System crash when calling QATZip API function incorrectly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference #</td>
<td>QATE-71816</td>
</tr>
<tr>
<td>Description</td>
<td>Calling QATZip API function QzCompress directly without properly setting up a session via qzSetupSession, and then calling either QzClose or QzTeardownSession can cause a system crash.</td>
</tr>
<tr>
<td>Resolution</td>
<td>This is resolved with the QAT1.5.0-0007 release.</td>
</tr>
<tr>
<td>Affected OS</td>
<td>All supported Windows* OS</td>
</tr>
<tr>
<td>Driver/Module</td>
<td>QAT IA – Compression</td>
</tr>
</tbody>
</table>
2.3.6 Length headers are not populated for gzipext in SW Fallback on Linux* QATzip.

<table>
<thead>
<tr>
<th>Title</th>
<th>Length headers are not populated for gzipext in SW Fallback on Linux* QATzip.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference #</td>
<td>QATE-74339</td>
</tr>
<tr>
<td>Description</td>
<td>When using gzipext on Linux* QATzip version 1.0.4 in software fallback mode, the gzipext header will not populate the length field. This may result in Windows* QATzip not being able to decompress this using gzipext (qatgzipext in parcomp sample application).</td>
</tr>
<tr>
<td>Resolution</td>
<td>Workaround is to use gzip decompression (qatgzip for parcomp).</td>
</tr>
<tr>
<td>Affected OS</td>
<td>Windows* Server 2016 and newer</td>
</tr>
<tr>
<td>Driver/Module</td>
<td>QAT IA - QATzip</td>
</tr>
</tbody>
</table>
Software Installation

3 Software Installation

The release package includes the QatSetup.exe installation application. Use this application to install the package on the targeted OS. For more information on how to install the package, refer to the Readme file included in the package:

`.\quickassist\README.txt`

Upon completion of the installation, the README text file can also be found in the following folder:

`<Program Files>\Intel\Intel(R) QuickAssist Technology`

**Note:** For those customers that had already have installed the previous version of the Intel® QAT software package, uninstall it and reboot before installing this new production package.

To ensure software installation completed successfully and that Intel® QAT devices are functional, refer to Figure 1. The screenshot lists three “Intel® C62x Accelerator” devices under the “Security accelerators” PNP Classification.

**Figure 1. Device Manager with Intel® QuickAssist driver installed in Microsoft® Windows**
4 Test Applications

4.1 Compression Test Application

A compression test application, parcomp, is included in this package. For more information on how to use the parcomp application, refer to the Readme file included in the package. You can find the README file in the following folder upon completion of the installation:

<Program Files>\Intel\Intel(R) QuickAssist Technology

4.2 Cryptography (PKE) Test Application

A cryptography test application for PKE operations, Cngtest, is included in this package. For more information on how to use the Cngtest application, please refer to the Readme file included in the package. You can find the README file in the following folder upon completion of the installation:

<Program Files>\Intel\Intel(R) QuickAssist Technology