



Compatibility Matrix for CTE Agent with CipherTrust Manager Release 7.0.0

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CTE Agent for Linux

Interoperability

Table 1: Linux Interoperability with Third Party Applications

Product	Version	OS	Notes
IBM Infosphere Guardium	v8.0, v9.0, v10.1	Linux	Compatible
Imperva Securesphere	v9.0, v9.5, v10.5, v11.5, v12	Linux	Compatible
Symantec Net-backup	7.6.1.2 7.7.3	Linux	Compatible
McAfee Enterprise Endpoint	v10.6.5	Red Hat 7 Redhat 8	Compatible
Trend Micro Deep Security	v12.0.347	Red Hat 7 Redhat 8	Compatible
Quantum StorNext		Red Hat 7.5+	LDT is not supported

Note

Guardium and Imperva are not supported with LDT and Docker.

Linux Agent Raw Device Support Matrix

- CipherTrust supports up to 6000 raw (sevm) devices.
- KVM VirtIO driver is supported from CTE 7.0.0 release and onwards.

Note

Raw devices are not supported with LDT and Docker.

Red Hat, CentOS, and OEL non-UEK 6.10 Raw Device Support

Table 2: Red Hat 6.10 | CentOS 6.10 | OEL non-UEK 6.10 (x86_64)³

Database			
Oracle 11gR2/12c/18c/19c	DB2 9.7/10.1/10.5	Informix 11.5/ 11.7/ 12.1	Sybase ASE 15/16 ¹
RAW	RAW	RAW ²	RAW ²
Native LVM	Native LVM	Native LVM	Native LVM
ASM			

Notes:

1. Sybase 16 is tested on RAW devices only.
2. You must configure support for RAW Character Devices manually.
3. CTE supports only Red Hat 6.10 GA (Kernel 2.6.32-754.el6.x86_64) and later releases.

Red Hat, CentOS, and OEL non-UEK 7.5-7.9 Raw Device Support

Table 3: Red Hat 7.5-7.9 | CentOS 7.5-7.8 | OEL non-UEK 7.5-7.8 (x86_64)^{1,2}

Database		
Oracle 11gR2/12c/18c/19c	DB2 9.7/10.1/10.5/11.1	Sybase ASE 16
RAW	RAW	RAW
Native LVM		
ASM		

Notes:

1. CTE supports only RHEL 7.5 GA (Kernel 3.10.0-862.el7.x86_64) and later releases.
2. Support for RAW Character Devices must be configured manually.

Red Hat, CentOS, and OEL non-UEK 8 Raw Device Support

Table 4: Red Hat 8.0-8.2 | CentOS 8.0-8.2 | OEL non-UEK 8.0-8.2 (x86_64)^{1,2}

Database	
Oracle 12c/18c/19c	DB2 10.5/11.1
RAW	RAW
Native LVM	
ASM	

Notes:

1. CTE supports only RHEL 8.0 GA and later.
2. Support for RAW Character Devices must be configured manually.

SLES 12 Raw Device Support

Table 5: SLES 12 SP3, SLES 12 SP4, and SLES 12 SP5 (x86_64)²

Database			
Oracle 11gR2/12c/18c/19c	DB2 9.7/10.1/10.5/11.1	Informix 11.5/11.7/12.1	Sybase ASE 16
RAW	RAW	RAW ¹	RAW
Native LVM		Native LVM	
ASM			

Notes:

1. Support for RAW Character Devices must be configured manually.
2. CTE supports only SLES12 SP3 (Kernel 4.4.126-94.22.1) and later.

SLES 15 Raw Device Support

Table 6: SLES 15, SLES 15 SP1, and SLES 15 SP2 (x86_64)

Database	
Oracle 11gR2/12c/18c/19c	DB2 9.7/10.1/10.5/11.1
RAW	RAW ¹
Native LVM	
ASM	

Note:

1. Support for RAW Character Devices must be configured manually.

Redhat 6.10/7.5 ACFS Support with Secvm

Table 7: Oracle ACFS/Secvm support on Redhat 6.10/7.5 (x86_64)

Database		
OS Platform	Oracle Database Application	DSM Policy
Redhat 6.10 (x86_64)	Oracle 12c Oracle 12c RAC	Encryption-only, no access control, no auditing, and do not execute binaries stored in the ACFS file system
Redhat 7.5 (x86_64)	Oracle 12c Oracle 12c RAC	Encryption-only, no access control, no auditing, and do not execute binaries stored in the ACFS file system

Note
For ACFS file systems mounted over Efficient Storage GuardPoints, see the “Efficient Storage” chapter in the *CTE Agent for Linux Advanced Configuration and Integration Guide*.

Table 8: Oracle ACFS/Secvm Stack with Red Hat 6.10/7.5 (x86_64)

Oracle RAC
Oracle ACFS (File System)
Oracle ADVM (Volume Manager)
Oracle ASM (Storage Manager)
SecVM
Block Device(s)

Linux Agent File System Support Matrix

Red Hat, CentOS, and OEL non-UEK 6.10 File System Support

Table 9: Red Hat 6.10 | CentOS 6.10 | OEL non-UEK 6.10 (x86_64)^{1,3}

File System	Database							
Unstructured data	Oracle 11gR2 12c/18c/19c	DB2 9.7 10.1 10.5 11.1	Informix 11.5 11.7 12.1	Sybase 16	MySQL 5.5 5.6	MongoDB	Cassandra	Couchbase 4.5
EXT3	EXT3	EXT3	EXT3		EXT3			
EXT4	EXT4	EXT4	EXT4	EXT4	EXT4	EXT4	EXT4	EXT4
NFS V4/V3	NFS V4/ V3	NFS V4/V3			NFS V4/V3			
XFS	XFS	XFS		XFS	XFS	XFS		
AWS EFS ²								

Notes:

1. For supported kernel versions, see ["Red Hat Kernel Support" on page 16](#).
2. AWS EFS support with and without on-premises Direct Connect.
3. CTE supports only Redhat 6.10 GA (Kernel 2.6.32-754.el6.x86_64) and later.

LDT Feature for Red Hat, CentOS, and OEL non-UEK 6.10 File System Support

Table 10: Red Hat 6.10 | CentOS 6.10 | OEL non-UEK 6.10 (x86_64)¹

File System	Database				
Unstructured data	Oracle 11gR2 12c/18c/19c	DB2 9.7 10.1 10.5 11.1	Sybase 16	MySQL 5.5 5.6	MongoDB
EXT3	EXT3	EXT3		EXT3	
EXT4	EXT4	EXT4	EXT4	EXT4	EXT4
XFS	XFS	XFS	XFS	XFS	XFS

Note:

1. CTE supports only Redhat 6.10 GA (Kernel 2.6.32-754.el6.x86_64) and later.

Red Hat, CentOS, and OEL non-UEK 7.5 - 7.9 File System Support

Table 11: Red Hat 7.5-7.9 | CentOS 7.5-7.8 | OEL non-UEK 7.5-7.8 (x86_64)^{1,4,5}

File System	Database										
Unstructured Data	Oracle 11gR2 12c/18c/19c	DB2 9.7 10.1 10.5 11.1 11.5	Informix 11.5 11.7 12.1 14.1	Sybase 16	MySQL 5.5 5.6 8 Maria DB 10.5	Postgre SQL	MongoDB	Cassandra	Couchbase 4.5 6.6	GreenPlum 5.21.0 Standalone & Cluster	HP Vertica 9.0.1
EXT3	EXT3	EXT3	EXT3		EXT3						
EXT4	EXT4	EXT4	EXT4	EXT4	EXT4		EXT4	EXT4			
NFS V4/V3	NFS V4/ V3	NFS V4/V3			NFS V4/V3						
XFS	XFS	XFS		XFS	XFS	XFS	XFS		XFS	XFS ³	XFS
AWS EFS											

Notes:

1. For supported kernel versions, see ["Red Hat Kernel Support" on page 16](#).
2. AWS EFS support with and without on-premises Direct Connect.
3. GreenPlum is supported only in Red Hat 7.5 and later.
4. CTE supports only RHEL 7.5 GA (Kernel 3.10.0-862.el7.x86_64) and later.
5. Couchbase database version 6.6 is supported with Red Hat 7.9.

LDT Feature for Red Hat, CentOS, and OEL non-UEK 7.5-7.9 File System Support

Table 12: Red Hat 7.5-7.9 | CentOS 7.5-7.8 | OEL non-UEK 7.5-7.8 (x86_64)²

File System	Database							
Unstructured data	Oracle 11gR2 12c/18c/19c	DB2 9.7 10.1 10.5 11.1 11.5	Sybase 16	MySQL 5.5 5.6 8 Maria DB 10.5	Postgre SQL	MongoDB	GreenPlum 5.21.0 Standalone & Cluster	HP Vertica 9.0.1
EXT3	EXT3	EXT3		EXT3				
EXT4	EXT4	EXT4	EXT4	EXT4		EXT4		
XFS	XFS	XFS	XFS	XFS	XFS	XFS	XFS ¹	XFS

Notes:

1. GreenPlum is supported only in Red Hat 7.5 and later.
2. CTE supports only RHEL 7.5 GA (Kernel 3.10.0-862.el7.x86_64) and later.

Red Hat 8 File System Support

Table 13: Red Hat 8.0-8.2 (x86_64) ^{1 2}

File System	Database			
Unstructured Data	Oracle 11gR2 12c/18c/19c	DB2 9.7 10.1 10.5 11.1	MySQL 5.5 5.6 8 Maria DB 10.5	MongoDB
EXT3	EXT3	EXT3	EXT3	
EXT4	EXT4	EXT4	EXT4	EXT4
NFS V4/V3	NFS V4/ V3	NFS V4/V3	NFS V4/V3	
XFS	XFS	XFS	XFS	XFS

Notes:

1. For supported kernel versions, see ["Red Hat Kernel Support" on the next page](#).
2. Thales has performed validation with CTE for these databases on Red Hat 8, but the database vendors may not have completed their Red Hat validation yet.

LDT Feature for Red Hat 8 File System Support

Table 14: Red Hat 8.0-8.2 (x86_64) ¹

File System	Database			
Unstructured data	Oracle 12c/18c/19c	DB2 11.1	MySQL 5.5 5.6 8 Maria DB 10.5	MongoDB
EXT3	EXT3	EXT3	EXT3	
EXT4	EXT4	EXT4	EXT4	EXT4
XFS	XFS	XFS	XFS	

Note:

1. Thales has performed validation with CTE for these databases on Red Hat 8, but the database vendors may not have completed their Red Hat validation yet.

Red Hat Kernel Support

The CTE 7.0.0 GA build is 7.0.0.47. All kernels are supported starting with this build unless otherwise noted.

Table 15: Red Hat Kernels Supported

Red Hat, CentOS, and OEL non-UEK Kernels Supported (by Version)		
6.10	7.5	7.6
2.6.32-754.el6.x86_64	3.10.0-862.el7.x86_64	3.10.0-957.el7.x86_64
2.6.32-754.2.1.el6.x86_64	3.10.0-862.2.3.el7.x86_64	3.10.0-957.1.3.el7.x86_64
2.6.32-754.3.5.el6.x86_64	3.10.0-862.3.2.el7.x86_64	3.10.0-957.5.1.el7.x86_64
2.6.32-754.6.3.el6.x86_64	3.10.0-862.3.3.el7.x86_64	3.10.0-957.10.1.el7.x86_64
2.6.32-754.9.1.el6.x86_64	3.10.0-862.6.3.el7.x86_64	3.10.0-957.12.1.el7.x86_64
2.6.32-754.10.1.el6.x86_64	3.10.0-862.9.1.el7.x86_64	3.10.0-957.12.2.el7.x86_64
2.6.32-754.11.1.el6.x86_64	3.10.0-862.11.6.el7.x86_64	3.10.0-957.21.2.el7.x86_64
2.6.32-754.12.1.el6.x86_64	3.10.0-862.14.4.el7.x86_64	3.10.0-957.21.3.el7.x86_64
2.6.32-754.14.2.el6.x86_64		3.10.0-957.27.2.el7.x86_64
2.6.32-754.15.3.el6.x86_64		3.10.0-957.35.2.el7.x86_64
2.6.32-754.17.1.el6.x86_64		3.10.0-957.58.2.el7.x86_64
2.6.32-754.18.2.el6.x86_64		3.10.0-957.61.2.el7.x86_64
2.6.32-754.22.1.el6.x86_64		3.10.0-957.65.2.el7.x86_64
2.6.32-754.23.1.el6.x86_64		
2.6.32-754.24.2.el6.x86_64		
2.6.32-754.24.3.el6.x86_64		
2.6.32-754.25.1.el6.x86_64		
2.6.32-754.27.1.el6.x86_64		
2.6.32-754.28.1.el6.x86_64		
2.6.32-754.29.1.el6.x86_64		
2.6.32-754.29.2.el6.x86_64		
2.6.32-754.30.2.el6.x86_64		
2.6.32-754.31.1.el6.x86_64		
2.6.32-754.33.1.el6.x86_64		
2.6.32-754.35.1.el6.x86_64		
2.6.32-754.36.1.el6.x86_64		

Red Hat, CentOS, and OEL non-UEK Kernels Supported (by Version)

7.7	7.8	7.9
3.10.0-1062.el7.x86_64	3.10.0-1127.el7.x86_64	3.10.0-1160.el7.x86_64 (CTE 7.0.0.56)
3.10.0-1062.1.1.el7.x86_64	3.10.0-1127.8.2.el7.x86_64	3.10.0-1160.2.1.el7.x86_64 (CTE 7.0.0.56)
3.10.0-1062.1.2.el7.x86_64	3.10.0-1127.10.1.el7.x86_64	3.10.0-1160.2.2.el7.x86_64 (CTE 7.0.0.56)
3.10.0-1062.4.1.el7.x86_64	3.10.0-1127.13.1.el7.x86_64	3.10.0-1160.6.1.el7.x86_64 (CTE 7.0.0.56)
3.10.0-1062.4.2.el7.x86_64	3.10.0-1127.18.2.el7.x86_64	3.10.0-1160.11.1.el7.x86_64 (CTE 7.0.0.56)
3.10.0-1062.4.3.el7.x86_64	3.10.0-1127.19.1.el7.x86_64	3.10.0-1160.15.2.el7.x86_64 (CTE 7.0.0.56)
3.10.0-1062.7.1.el7.x86_64		
3.10.0-1062.9.1.el7.x86_64		
3.10.0-1062.12.1.el7.x86_64		
3.10.0-1062.18.1.el7.x86_64		
3.10.0-1062.26.1.el7.x86_64		
3.10.0-1062.33.1.el7.x86_64		
3.10.0-1062.37.1.el7.x86_64		
3.10.0-1062.43.1.el7.x86_64		

Red Hat, CentOS, and OEL non-UEK Kernels Supported (by Version)

8.0	8.1	8.2	8.3
4.18.0-80.el8.x86_64	4.18.0-147.el8.x86_64	4.18.0-193.el8.x86_64	4.18.0-240.el8.x86_64 (CTE 7.0.0.66)
4.18.0-80.1.2.el8_0.x86_64	4.18.0-147.0.2.el8_1.x86_64	4.18.0-193.1.2.el8_2.x86_64	4.18.0-240.1.1.el8.x86_64 (CTE 7.0.0.66)
4.18.0-80.4.2.el8_0.x86_64	4.18.0-147.0.3.el8_1.x86_64	4.18.0-193.6.3.el8_2.x86_64	4.18.0-240.8.1.el8_3.x86_64 (CTE 7.0.0.66)
4.18.0-80.7.1.el8_0.x86_64	4.18.0-147.3.1.el8_1.x86_64	4.18.0-193.13.2.el8_2.x86_64	4.18.0-240.10.1.el8_3.x86_64 (CTE 7.0.0.66)
4.18.0-80.7.2.el8_0.x86_64	4.18.0-147.5.1.el8_1.x86_64	4.18.0-193.14.3.el8_2.x86_64	4.18.0-240.15.1.el8_3.x86_64 (CTE 7.0.0.66)
4.18.0-80.11.1.el8_0.x86_64	4.18.0-147.8.1.el8_1.x86_64	4.18.0-193.19.1.el8.x86_64	
4.18.0-80.11.2.el8_0.x86_64		4.18.0-193.28.1.el8_2.x86_64	

SLES Support

SLES 12 File System Support

Table 16: SLES 12 SP3, SLES 12 SP4, and SLES 12 SP5 (x86_64) ^{1,3}

File System	Database						
	Oracle 11gR2 12c/18c/19c	DB2 9.7, 10.1 10.5, 11.1	Informix 11.5, 11.7, 12.1	Sybase 16	Maria DB 10.5	MongoDB	Cassandra
EXT3					EXT3		
EXT4	EXT4			EXT4	EXT4		
NFS V4/V3					NFS V4/V3		
XFS	XFS	XFS		XFS	XFS	XFS	
AWS EFS ²							

Notes:

1. For supported kernel versions, see "[SLES Kernel Support](#)" on page 21.
2. AWS EFS support with and without on-premises Direct Connect.
3. CTE only supports SLES12 SP3 (Kernel 4.4.126-94.22.1) and later.

LDT Feature for SLES 12 File System Support

Table 17: SLES 12 SP3, SLES 12 SP4, and SLES 12 SP5 (x86_64)¹

File System	Database			
Unstructured data	Oracle 11gR2/12c/18c/19c	DB2 9.7, 10.1,10.5, 11.1	Sybase 16	Maria DB 10.5
EXT3				EXT3
EXT4	EXT4		EXT4	EXT4
XFS	XFS	XFS	XFS	XFS

Note:

1. CTE only supports SLES12 SP3 (Kernel 4.4.126-94.22.1) and later.

SLES 15 File System Support

Table 18: SLES 15, SLES 15 SP1, and SLES 15 SP2 (x86_64)¹

File System	Database			
Unstructured data	Oracle 11gR2, 12c/18c/19c	DB2 9.7, 10.1, 10.5, 11.1	Maria DB 10.5	MongoDB
EXT3			EXT3	
EXT4	EXT4		EXT4	
NFS V4/V3			NFS V4/V3	
XFS	XFS	XFS	XFS	XFS
AWS EFS ³				

Notes:

1. For supported kernel versions, see ["SLES Kernel Support" on the next page](#).
2. AWS EFS support with and without on-premises Direct Connect.

LDT Feature for SLES 15 File System Support

Table 19: SLES 15 and SLES 15 SP1, and SLES 15 SP2 (x86_64)

File System	Database			
Unstructured data	Oracle 11gR2, 12c/18c/19c	DB2 9.7, 10.1, 10.5, 11.1	Sybase 16	Maria DB 10.5
EXT3				EXT3
EXT4	EXT4		EXT4	EXT4
XFS	XFS	XFS	XFS	XFS

SLES Kernel Support

The CTE 7.0.0 GA build is 7.0.0.47. All kernels are supported starting with this build unless otherwise noted.

Table 20: SLES Kernels Supported

SLES Kernels Supported (by Version)		
SLES 12 SP3	SLES 12 SP4	SLES 12 SP5
4.4.126-94.22-default	4.12.14-94.41-default	4.12.14-120-default
4.4.131-94.29-default	4.12.14-95.3-default	4.12.14-122.7-default
4.4.132-94.33-default	4.12.14-95.6-default	4.12.14-122.12-default
4.4.138-94.39-default	4.12.14-95.13-default	4.12.14-122.17-default
4.4.140-94.42-default	4.12.14-95.16-default	4.12.14-122.20-default
4.4.143-94.47-default	4.12.14-95.19-default	4.12.14-122.23-default
4.4.155-94.50-default	4.12.14-95.24-default	4.12.14-122.26-default
4.4.156-94.57-default	4.12.14-95.29-default	4.12.14-122.29-default
4.4.156-94.61-default	4.12.14-95.32-default	4.12.14-122.32-default
4.4.156-94.64-default	4.12.14-95.37-default	4.12.14-122.37-default
4.4.162-94.69-default	4.12.14-95.40-default	4.12.14-122.41-default
4.4.162-94.72-default	4.12.14-95.45-default	4.12.14-122.46-default
4.4.175-94.79-default	4.12.14-95.48-default	4.12.14-122.51-default
4.4.176-94.88-default	4.12.14-95.51-default	4.12.14-122.54-default
4.4.178-94.91-default	4.12.14-95.54-default	4.12.14-122.57-default
4.4.180-94.97-default	4.12.14-95.65-default	4.12.14-122.60-default

SLES Kernels Supported (by Version)		
SLES 15	SLES 15 SP1	SLES 15 SP2
4.12.14-23-default	4.12.14-195-default	5.3.18-22-default
4.12.14-25.3-default	4.12.14-197.4-default	5.3.18-24.9-default
4.12.14-25.6-default	4.12.14-197.7-default	5.3.18-24.12-default
4.12.14-25.13-default	4.12.14-197.10-default	5.3.18-24.15-default
4.12.14-25.16-default	4.12.14-197.15-default	5.3.18-24.24-default
4.12.14-25.19-default	4.12.14-197.18-default	5.3.18-24.29-default
4.12.14-25.22-default	4.12.14-197.21-default	5.3.18-24.34-default
4.12.14-25.25-default	4.12.14-197.26-default	5.3.18-24.37-default
4.12.14-25.28-default	4.12.14-197.29-default	5.3.18-24.43-default
4.12.14-150.14-default	4.12.14-197.34-default	5.3.18-24.46-default
4.12.14-150.17-default	4.12.14-197.37-default	5.3.18-24.49-default
4.12.14-150.22-default	4.12.14-197.40-default	
4.12.14-150.27-default	4.12.14-197.45-default	
4.12.14-150.32-default	4.12.14-197.48-default	
4.12.14-150.35-default	4.12.14-197.51-default	
4.12.14-150.38-default	4.12.14-197.56-default	
4.12.14-150.41-default	4.12.14-197.61-default	
4.12.14-150.47-default	4.12.14-197.64-default	
	4.12.14-197.67-default	
	4.12.14-197.72-default	
	4.12.14-197.75-default	
	4.12.14-197.78-default	

SAP HANA Support (LDT is supported on SAP HANA)

Table 21: SAP HANA Support

SAP HANA Version	Platform Support	File System
1.00.122.06.1485334242	SLES 12 SP3	EXT4 XFS

SAP HANA Version	Platform Support	File System
1.00.122.06.1485334242	SLES 12 SP3 Supports new CBC-CS1 key	EXT4 XFS
1.00.122.06.1485334242	RHEL 7.5	EXT4 XFS
1.00.122.06.1485334242	RHEL 7.5 Supports new CBC-CS1 key	EXT4 XFS
1.00.122.06.1485334242	SLES 12 SP3 (MS Azure) Supports new CBC-CS1 key	EXT4 XFS
2.00.030.00.1522210459	SLES 12 SP3 Supports new CBC-CS1 key	EXT4 XFS
2.00.030.00.1522210459	RHEL 7.5	EXT4 XFS
2.00.030.00.1522210459	RHEL 7.5 Supports new CBC-CS1 key	EXT4 XFS
2.00.030.00.1522210459	SLES 12 SP3 Supports new CBC-CS1 key	EXT4 XFS
2.00.030.00.1522210459	SLES 12 SP3 (MS Azure) Supports new CBC-CS1 key	EXT4 XFS
2.00.030.00.1522210459	SLES 12 SP4 (supported with CBC-CS1)	EXT4 XFS
2.00.040.00.1553674765	SLES 15	EXT4 XFS
2.00.040.00.1553674765	RHEL 8	EXT4 XFS

Note

Test configuration coverage included Physical, Virtual (VMWare ESX), Virtustream environment and AWS.

Ubuntu Support

Ubuntu 16.04 File System Support

Table 22: Ubuntu 16.04.5, 16.04.6, 16.04.7 (x86_64)^{1,3}

File System	Database					
	DB2 10.1, 10.5, 11.1	Informix 12.1	MySQL 5.5/5.6	MongoDB	Cassandra	Couchbase 4.5
EXT4	EXT4	EXT4	EXT4	EXT4	EXT4	EXT4
NFS V3/V4	NFS V3/V4		NFS V4/V3			
XFS	XFS		XFS	XFS	XFS	
AWS EFS ²						

Notes:

1. For a list of supported kernel versions, see "[Ubuntu Kernel Support](#)" on page 28.
2. AWS EFS support with and without on-premise Direct Connect.
3. CTE only supports 4.4.0-108-gneric & 4.15.0-20-generic and later. (There is no support for the 4.8, 4.10, or 4.13 kernel series.)

LDT Feature for Ubuntu 16.04 File System Support

Table 23: Ubuntu 16.04.5, 16.04.6, 16.04.7 (x86_64)¹

File System	Database			
Unstructured data	DB2 10.1, 10.5, 11.1	MySQL 5.5/5.6	PostgreSQL	MongoDB
EXT3	EXT3	EXT3	EXT3	EXT3
EXT4	EXT4	EXT4	EXT4	EXT4
XFS	XFS	XFS	XFS	XFS

Note:

1. CTE only supports 4.4.0-108-generic and 4.15.0-20-generic and later. (There is no support for the 4.8, 4.10, or 4.13 kernel series.)

Ubuntu 18.04 File System Support

Table 24: Ubuntu 18.04, 18.04.1, 18.04.2, 18.04.3, 18.04.4, 18.04.5 (x86_64)^{1,3}

File System	Database					
Unstructured data	DB2 10.1 10.5 11.1	Informix 12.1	MySQL 5.5/5.6	MongoDB	Cassandra	Couchbase 4.5
EXT4	EXT4	EXT4	EXT4	EXT4	EXT4	EXT4
NFS V3/V4	NFS V3/V4		NFS V4/V3			
XFS	XFS		XFS	XFS	XFS	
AWS EFS ²						

Notes:

1. For a list of supported kernel versions, see "[Ubuntu Kernel Support](#)" on page 28.
2. AWS EFS support with and without on-premise Direct Connect.
3. CTE only supports 4.15.0-20-generic and 5.3.0-19-generic kernels.

LDT Feature for Ubuntu 18.04 File System Support

Table 25: Ubuntu 18.04, 18.04.1, 18.04.2, 18.04.3, 18.04.4, 18.04.5 (x86_64)¹

File System	Database			
Unstructured data	DB2 10.1 10.5 11.1	MySQL 5.5/5.6	PostgreSQL	MongoDB
EXT3	EXT3	EXT3	EXT3	EXT3
EXT4	EXT4	EXT4	EXT4	EXT4
XFS	XFS	XFS	XFS	XFS

Note:

1. CTE only supports 4.15.0-20-generic and 5.3.0-19-generic kernels.

Ubuntu 20.04 File System Support

Table 26: Ubuntu 20.04 (x86_64)¹

File System	Database					
Unstructured data	DB2 10.1 10.5 11.1	Informix 12.1	MySQL 5.5/5.6	MongoDB	Cassandra	Couchbase 4.5
EXT4	EXT4	EXT4	EXT4	EXT4	EXT4	EXT4
NFS V3/V4	NFS V3/V4		NFS V4/V3			
XFS	XFS		XFS	XFS	XFS	
AWS EFS ²						

Notes:

1. For a list of supported kernel versions, see ["Ubuntu Kernel Support" on the next page](#).
2. AWS EFS support with and without on-premise Direct Connect.

LDT Feature for Ubuntu 20.04 File System Support

Table 27: Ubuntu 20.04 (x86_64)

File System	Database			
Unstructured data	DB2 10.1 10.5 11.1	MySQL 5.5/5.6	PostgreSQL	MongoDB
EXT3	EXT3	EXT3	EXT3	EXT3
EXT4	EXT4	EXT4	EXT4	EXT4
XFS	XFS	XFS	XFS	XFS

Ubuntu Kernel Support

The CTE 7.0.0 GA build is 7.0.0.47. All kernels are supported starting with this build unless otherwise noted.

Table 28: Ubuntu Kernels Supported

Ubuntu Kernels Supported (by Version)			
16.04.5	16.04.6		16.04.7
4.4.0-138-generic	4.4.0-143-generic	4.15.0-45-generic	4.4.0-190-generic (CTE 7.0.0.53)
4.4.0-139-generic	4.4.0-145-generic	4.15.0-46-generic	4.4.0-193-generic (CTE 7.0.0.63)
4.4.0-140-generic	4.4.0-146-generic	4.15.0-47-generic	4.4.0-194-generic (CTE 7.0.0.73)
4.4.0-141-generic	4.4.0-148-generic	4.15.0-48-generic	4.4.0-197-generic (CTE 7.0.0.73)
4.4.0-142-generic	4.4.0-150-generic	4.15.0-50-generic	4.4.0-198-generic (CTE 7.0.0.88)
4.15.0-29-generic	4.4.0-151-generic	4.15.0-51-generic	4.4.0-200-generic (CTE 7.0.0.93)
4.15.0-30-generic	4.4.0-154-generic	4.15.0-52-generic	4.4.0-201-generic (CTE 7.0.0.99)
4.15.0-32-generic	4.4.0-157-generic	4.15.0-54-generic	4.4.0-203-generic (CTE 7.0.0.103)
4.15.0-33-generic	4.4.0-159-generic	4.15.0-55-generic	4.15.0-115-generic
4.15.0.34-generic	4.4.0-161-generic	4.15.0-58-generic	4.15.0-117-generic
4.15.0.36-generic	4.4.0-164-generic	4.15.0-60-generic	4.15.0-118-generic (CTE 7.0.0.53)
4.15.0-38-generic	4.4.0-165-generic	4.15.0-62-generic	4.15.0-120-generic (CTE 7.0.0.63)
4.15.0-39-generic	4.4.0-166-generic	4.15.0-64-generic	4.15.0-122-generic (CTE 7.0.0.65)
4.15.0-42-generic	4.4.0-168-generic	4.15.0-65-generic	4.15.0-123-generic (CTE 7.0.0.73)
4.15.0-43-generic	4.4.0-169-generic	4.15.0-66-generic	4.15.0-126-generic (CTE 7.0.0.73)
4.15.0-45-generic	4.4.0-170-generic	4.15.0-69-generic	4.15.0-128-generic (CTE 7.0.0.81)
	4.4.0-171-generic	4.15.0-70-generic	4.15.0-129-generic (CTE 7.0.0.88)
	4.4.0-173-generic	4.15.0-72-generic	4.15.0-132-generic (CTE 7.0.0.93)
	4.4.0-174-generic	4.15.0-74-generic	4.15.0-133-generic (CTE 7.0.0.99)
	4.4.0-176-generic	4.15.0-76-generic	4.15.0-136-generic (CTE 7.0.0.103)
	4.4.0-177-generic	4.15.0-88-generic	
	4.4.0-178-generic	4.15.0-91-generic	
	4.4.0-179-generic	4.15.0-96-generic	
	4.4.0-184-generic	4.15.0-99-generic	
	4.4.0-185-generic	4.15.0-101-generic	
	4.4.0-186-generic	4.15.0-106-generic	
		4.15.0-107-generic	
		4.15.0-112-generic	

Ubuntu Kernels Supported (by Version)

18.04	18.04.2	18.04.3	18.04.4	18.04.5	
4.15.0-20-generic kernel	4.15.0-45-generic	4.15.0-55-generic	4.15.0-91-generic	4.15.0-118-generic (CTE 7.0.0.53)	5.3.0.65-generic
4.15.0-22-generic kernel	4.15.0-46-generic	4.15.0-58-generic	4.15.0-96-generic	4.15.0-121-generic (CTE 7.0.0.63)	5.4.0.37-generic
4.15.0-23-generic kernel	4.15.0-47-generic	4.15.0-60-generic	4.15.0-99-generic	4.15.0-122-generic (CTE 7.0.0.65)	5.4.0.39-generic
4.15.0-24-generic kernel	4.15.0-48-generic	4.15.0-62-generic	4.15.0-101-generic	4.15.0-123-generic (CTE 7.0.0.73)	5.4.0.40-generic
4.15.0-29-generic	4.15.0-50-generic	4.15.0-64-generic	4.15.0-106-generic	4.15.0-124-generic (CTE 7.0.0.73)	5.4.0.42-generic
4.15.0-30-generic	4.15.0-51-generic	4.15.0-65-generic	4.15.0-108-generic	4.15.0-126-generic (CTE 7.0.0.73)	5.4.0.45-generic
4.15.0-32-generic	4.15.0-52-generic	4.15.0-66-generic	4.15.0-109-generic	4.15.0-128-generic (CTE 7.0.0.81)	5.4.0.47-generic
4.15.0-33-generic	4.15.0-54-generic	4.15.0-69-generic	4.15.0-111-generic	4.15.0-129-generic (CTE 7.0.0.88)	5.4.0-48-generic (CTE 7.0.0.53)
4.15.0-34-generic	4.18.0-13-generic	4.15.0-70-generic	4.15.0-112-generic	4.15.0-130-generic (CTE 7.0.0.88)	5.4.0-51-generic (CTE 7.0.0.65)
4.15.0-36-generic	4.18.0-14-generic	4.15.0-72-generic	4.15.0-115-generic	4.15.0-132-generic (CTE 7.0.0.93)	5.4.0-52-generic (CTE 7.0.0.65)
4.15.0-38-generic	4.18.0-15-generic	4.15.0-74-generic	4.15.0-117-generic	4.15.0-134-generic (CTE 7.0.0.99)	5.4.0-53-generic (CTE 7.0.0.73)
4.15.0-39-generic	4.18.0-16-generic	4.15.0-76-generic	5.3.0-19-generic	4.15.0-135-generic (CTE 7.0.0.99)	5.4.0-54-generic (CTE 7.0.0.73)
4.15.0-42-generic	4.18.0-17-generic	4.15.0-88-generic	5.3.0-22-generic	4.15.0-136-generic (CTE 7.0.0.103)	5.4.0-56-generic (CTE 7.0.0.73)
4.15.0-43-generic	4.18.0-18-generic	5.0.0-15-generic	5.3.0-23-generic		5.4.0-58-generic (CTE 7.0.0.81)
4.15.0-44-generic	4.18.0-20-generic	5.0.0-16-generic	5.3.0-24-generic		5.4.0-59-generic (CTE 7.0.0.88)
4.15.0-45-generic	4.18.0-21-generic	5.0.0-17-generic	5.3.0-26-generic		5.4.0-60-generic (CTE 7.0.0.88)
	4.18.0-22-generic	5.0.0-19-generic	5.3.0-28-generic		5.4.0-62-generic (CTE 7.0.0.93)
	4.18.0-24-generic	5.0.0-20-generic	5.3.0-40-generic		5.4.0-64-generic (CTE 7.0.0.99)
	4.18.0-25-generic	5.0.0-23-generic	5.3.0-42-generic		5.4.0-65-generic (CTE 7.0.0.99)
		5.0.0-25-generic	5.3.0-45-generic		5.4.0-66-generic (CTE 7.0.0.103)
		5.0.0-27-generic	5.3.0-46-generic		
		5.0.0-29-generic	5.3.0-51-generic		
		5.0.0-31-generic	5.3.0-53-generic		
		5.0.0-32-generic	5.3.0-59-generic		
		5.0.0-35-generic	5.3.0-61-generic		
		5.0.0-36-generic	5.3.0-62-generic		
		5.0.0-37-generic	5.3.0-64-generic		

Ubuntu Kernels Supported (by Version)		
20.04	20.04.1	20.04.2
5.4.0-26-generic	5.4.0-45-generic (CTE 7.0.0.53)	5.4.0-66-generic (CTE 7.0.0.103)
5.4.0-28-generic	5.4.0-47-generic (CTE 7.0.0.53)	
5.4.0-29-generic	5.4.0-48-generic (CTE 7.0.0.53)	
5.4.0-31-generic	5.4.0-51-generic (CTE 7.0.0.65)	
5.4.0-33-generic	5.4.0-52-generic (CTE 7.0.0.65)	
5.4.0-37-generic	5.4.0-53-generic (CTE 7.0.0.73)	
5.4.0-39-generic	5.4.0-54-generic (CTE 7.0.0.73)	
5.4.0-40-generic	5.4.0-56-generic (CTE 7.0.0.73)	
5.4.0-42-generic	5.4.0-58-generic (CTE 7.0.0.81)	
	5.4.0-59-generic (CTE 7.0.0.88)	
	5.4.0-60-generic (CTE 7.0.0.88)	
	5.4.0-62-generic (CTE 7.0.0.93)	
	5.4.0-64-generic (CTE 7.0.0.99)	
	5.4.0-65-generic (CTE 7.0.0.99)	

CTE Agent for Cloud Environment

General CTE Support for AWS AMI and Microsoft Azure on Linux:

- CTE supports Ubuntu, SLES, and Red Hat OS images/platforms given baseline support and CTE support exists.
- Please refer to Matrices/tables in section "[CTE Agent for Linux](#)" on [page 6](#) for existing CTE-supported OS platforms and applications.

CTE Support on AWS EFS and AWS S3 File Storage Gateway

- CTE supports Amazon Elastic File System (EFS) on both AWS Cloud and AWS Direct Connect (on-premises) configurations. Refer to the Matrix tables in the section "[CTE Agent for Linux](#)" on [page 6](#).
- CTE supports Amazon S3 File Storage Gateway on cloud tiering and hybrid cloud backup. S3 buckets and their objects are mountable NFS to clients (one or more) in the AWS or on-premises for data backup/restore with encryption protected by CTE.

AWS AMI

Refer to the Matrix tables in the section ["CTE Agent for Cloud Environment" on the previous page](#) for AWS AMI image (distributions) and application support.

Microsoft Azure (Linux)

Refer to matrices/tables in section ["CTE Agent for Cloud Environment" on the previous page](#) for existing CTE supported OS platforms and applications for MS Azure distributions and application support.

Table 29: Azure Files Supported Linux CTE Distributions

CTE on Azure Files SMB 2.1 and 3.0 Protocol Support			
OS vs Azure Files Access	SMB 2.1 (VMs from Azure cloud only)	SMB 3.0 (VMs from Azure cloud only)	Mount Azure files from on Premises machine (SMB 3.0 only)
Ubuntu 16.04	YES	YES	YES
RHEL 6.9	NO	NO	NO
RHEL 7.4	YES	YES	YES ¹
SLES 11 SP4	NO	NO	NO
SLES 12 SP2/SP3	YES	YES	YES ¹

Note:

1. CTE supports Ubuntu, SLES, and Red Hat mounted in Azure File Storage assuming baseline support and that CTE supports the OS and file system combination.

The Following features and configurations are not supported:

- Live Data Transformation
- Azure Blob storage
- Rest API to Azure file storage
- azcopy utility to access Blob or file storage

CTE Agent for Windows

Windows Application Interoperability

Table 30: Windows interoperability with IBM Infosphere Guardium and Imperva Securesphere

Product	Version	OS	Notes
IBM Infosphere Guardium	v10.1.4	Windows	Compatible
Imperva Securesphere	v9.0, v9.5, v10.5, v11	Windows 2012 R2	Compatible

Table 31: Windows CTE LDT Interoperability with backup applications

Product	Version	Notes
Symantec Net-backup	7.6.0, 7.6.1.4, 7.6.04, 8.1.1	Compatible
Symantec Backup Exec 2012, 2016	2012, 2016	Compatible
UltraBackup	10.0	Compatible
Microsoft Backup with VSS ¹	Win2012, Win2016, Win2019	Compatible

Note:

1. Thales has tested the backup applications with Volume Shadow Copy Service (VSS) for backup and restore.

Table 32: Windows CTE LDT Interoperability with Active-Passive clusters

Product	Version	Notes
Microsoft Cluster	2012 R2/2016/2019	SQL Servers, File Server Compatible
Veritas Cluster	6.02	Compatible

Table 33: Windows CTE Quantum StorNext Support

Product	Version	Notes
Quantum StorNext	2012 R2/2016	<ul style="list-style-type: none">• Structured data is not supported (i.e. database application)• LDT is not supported• CBC-CS1 key is not supported

Table 34: Windows File System Support

File System		Database							Apps			
Windows	Unstructured data	Oracle 10gR1 11gR1 11gR2 12c/18c	DB2 95/9.7 10.1 10.5 11.1	Informix 11.5 11.7 12.1	MySQL 5.5 5.6 8	MS SQL 2012 ^b 2014 ^b 2016 ^b 2017 2019	MS SQL on MS AZURE 2012 2017	MongoDB 3.2, 3.4	SharePoint 2010/ 2013/ 2016	Active Directory 2012/ 2016	Active Directory on MS Azure 2012R2	Microsoft Exchange DAG 2016
Windows 2012/R2 (x64) ^{a,c}	NTFS/CIFS/ReFS	NTFS	NTFS	NTFS	NTFS	NTFS ^b	NTFS	NTFS	NTFS	NTFS		
Windows 10 (x64) ^a	NTFS/CIFS											
Windows 2016 (x64) ^{a,c}	NTFS/CIFS/ReFS	NTFS	NTFS	NTFS	NTFS	NTFS ^b	NTFS	NTFS	NTFS	NTFS		NTFS
Windows 2016 Core (x64) ^{a,c}	NTFS/CIFS/ReFS	NTFS	NTFS	NTFS	NTFS	NTFS ^b	NTFS	NTFS	NTFS	NTFS		
Windows 2019 (x64) ^a	NTFS/CIFS/ReFS	NTFS				NTFS ^b						
MS Azure Windows 2012 R2	NTFS/CIFS/ReFS						NTFS				NTFS	
MS Azure Windows 2016	NTFS/CIFS/ReFS						NTFS					

Notes:

- a. Supports AES-NI.
- b. Always encrypted, Always on, and File Table features are tested and supported.
- c. Azure file storage is supported.

LDT Feature for Windows File System Support

Table 35: Windows (x32/x64-bit)

File System		Database							Apps		
Windows	Unstructured data	Oracle 10gR1 11gR1 11gR2 12c/18c	DB2 9.5/9.7 10.1 10.5 11.1	Informix 11.5 11.7 12.1	MySQL 5.5 5.6 8	MS SQL 2012^b 2014^b 2016^b 2017 2019	MS SQL on MS AZURE 2012 2017	MongoDB 3.2, 3.4	SharePoint 2010/ 2013/ 2016	Active Directory on MS Azure 2012R2	Microsoft Exchange DAG 2016
Windows 2012/R2 (x64) ^{a,d}	NTFS/ReFS	NTFS	NTFS	NTFS	NTFS	NTFS ^b		NTFS	NTFS		
Windows 10 (x64) ^a	NTFS		NTFS	NTFS							
Windows 2016 (x64) ^{a,c}	NTFS	NTFS	NTFS	NTFS	NTFS	NTFS ^b		NTFS	NTFS		NTFS
Windows 2016 Core (x64) ^{a,c}	NTFS	NTFS	NTFS	NTFS	NTFS	NTFS ^b		NTFS	NTFS		
Windows 2019 (x64) ^{a,c}	NTFS	NTFS				NTFS ^b					
MS Azure Windows 2012 R2	NTFS						NTFS			NTFS	
MS Azure Windows 2016	NTFS						NTFS				

Notes:

- a. Supports AES-NI.
- b. Always encrypted, Always on, and File Table features are tested and supported.
- c. LDT support for Windows 2016 testing is completed but there is no ReFS support.

Additionally, LDT is not supported on a CIFS file system.

Anti-Virus Support

Table 36: Anti-virus support on Windows (x32/x64-bit)

Product	Version	OS	Notes
Symantec End Point Protection	v12.1, v14.0.1_MP2	Windows 2012R2, Windows 2016, Windows 2019	Compatible
McAfee Complete Endpoint Protection Business	8.8.0900	Windows 2012R2, Windows 2016, Windows 2019	Compatible
Trend Micro for Small Business	11.0		
Microsoft Defender	4.18		

CM and CTE Agent Software Version Compatibility

The following table shows compatibility between several versions of the CipherTrust Manager (CM) and the CTE Agent for Linux and Windows.

Note
In previous releases, the CipherTrust Transparent Encryption (CTE) Agent was called the Vormetric Transparent Encryption (VTE) Agent and the final release number of the VTE Agent for Linux and Windows was 6.3.1.

Table 37: CM with VTE/CTE Agent Version Support

CM Software Version	VTE Version	CTE Version
	6.3.1	7.0.0
2.0	Not Compatible	Compatible
2.1	Not Compatible	Compatible
2.2	Not Compatible	Compatible

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