



AccessData[®]

Forensic Toolkit[®]

System Specifications Guide

When it comes to performing effective and timely investigations, we recommend examiners take into consideration the demands the software will make on their hardware resources. Unlike many applications, forensic tools, such as Forensic Toolkit® (FTK®), FTK 2 and AccessData Enterprise, will push hardware resources to their limits, depending on the size and scope of a given investigation.

With FTK 2, examiners have three configuration options available to them during the installation process:

- 1) Install all FTK 2 components on a single machine.
- 2) Install the core FTK 2 application on one machine and the Oracle database on a second machine. (The core FTK2 application is where you will actually perform investigations.)
- 3) Install the core FTK 2 application on one machine and leverage an existing Oracle database installation within your organization.

Examiner

There are two possible configurations that need to be considered when planning for the installation and configuration of the FTK2 Examiner.

- **Configuration 1:**
 - All components (GUI/Worker/Database) are on a single system
- **Configuration 2:**
 - System 1: GUI/Worker
 - System 2: Database

Splitting the components between different systems changes the recommended hardware specification. The next section defines various hardware requirements based on your desired configuration.

NOTE: All configurations will require one available USB slot for the hardware security device (CodeMeter/Dongle) unless using NLS (Network Licensing Services).

Specifications for FTK 2 with the Embedded Database and GUI/Worker Components on the Same Machine

The systems on which you install the FTK 2 component should meet these system specifications.

	Recommended	Ideal
Processor	Intel® Quad Core or AMD equivalent	Intel® Dual Quad Core Xeon or AMD equivalent
CD/DVD Drive	DVD	DVD
RAM	4 (32-bit) / 8 GB (64-bit)	16 GB (64-bit)
OS / Application drive	150 GB	150 GB
Storage (for database, images, index)	1 TB	2+ TB
Network Card	Gigabit	Gigabit
Hard Drive Speed	7,200 RPM	10,000 - 15,000 RPM
HW RAID Controller	Highly recommended for Drive Set 2	Highly recommended for Drive Set 2. Consider a card that has 256MB RAM w/ backup-battery to enable write-through cache.
Drive Configuration	Drive Set 1: OS Drive Set 2: Database/Index/Images/Pagefile/Tempfile (RAID 0) NOTE: At a minimum Drive Set 2 must have RAID 0 (striping) using software RAID with at least 2-3 drives in the array.	Drive Set 1: OS (RAID 1) Drive Set 2: Database/Index/Images/Pagefile/Tempfile (RAID 0) NOTE: Drive Set 2 should have a RAID 0, or 0+1 (striping) using HW RAID with at least 4 drives in the array.
Operating Systems	MS Windows XP/Vista/2003/2008 (32-bit or 64-bit)	MS Windows 2003/2008 Server (64-bit)
Database	Oracle 10g Enterprise embedded with the application	Oracle 10g Enterprise embedded with the application

Performance and Storage Considerations

- 1) The Oracle database and index should be on its own RAID array, separate from the operating system. At a minimum, the Oracle database and index files should be located on a two-drive configuration, using Software Raid 0. Adding additional drives to the RAID 0 increases performance. RAID 0 gives the best performance. However, RAID 0 provides no recovery from drive failure. RAID 0 should only be considered if automatic scheduled backups are available.
- 2) We strongly recommend that you configure your antivirus to exclude the Oracle database, temp, images, and index folders.
- 3) We recommend turning off indexing, compression and/or EFS encryption. (By default, indexing of files and folders is on.)
- 4) Copying the image(s) to the local RAID before processing will increase both pre-processing performance, as well as UI performance.
- 5) If the OS drive is on a single 7200 RPM drive and Oracle is running on four + RAID 0 drive set, then reduce the PAGEFILE on drive C:\ to 500 MB and create a PAGEFILE for the four + RAID 0 drive. If the OS is on a single or RAIDed set of 10,000 RPM drives then leave the PAGEFILE on drive C:\.
- 6) 10,000 RPM drives are recommended for the OS drive. A single 10,000 RPM drive will provide slightly better performance than two 7200 RPM drives configured with RAID 0 (software). 15,000 RPM drives will provide the same performance as three to four 7200 RPM drives configured with RAID 0 (software).
- 7) Hardware RAID controllers will provide substantially better performance than an OS-based software RAID configuration. We recommend a hardware RAID controller with at least 256MB of write-through cache. We strongly recommend the purchase of a card with a backup-battery for the RAID controller and enabling the write-through cache. Enabling the write-through cache without the backup-battery creates the potential for database corruption in the event of a system crash or power failure.
- 8) For recommendations on hard drives and hardware RAID controllers please see:
 - a) Hard Drives: <http://www.tomshardware.com/charts/3-5-hard-drive-charts/benchmarks,24.html>
 - b) RAID Controllers: <http://www.maximumpc.com/sites/future.p2technology.com/files/imce-images/RAIDbenchmarksBIG.gif>
- 9) To estimate roughly the amount of storage space to support your processing load you should consider these estimates:
 - a) Database: Every 500,000 items requires roughly 1 GB of space.
 - b) Generally, the index is about 1/3 the size of the data set.

Specification for FTK2 GUI/Worker when using Oracle on a Separate (2nd) Machine (2 Node Configuration)

If you choose to install the embedded Oracle database provided by AccessData on a second machine or to use an existing Oracle infrastructure, AD recommends one of the following hardware specifications for the GUI/Worker:

	Recommended	Ideal
Processor	Intel® Quad Core or AMD equivalent	Intel® Dual Quad Core Xeon or AMD equivalent
CD/DVD Drive	DVD	DVD
RAM	4 GB (32-bit) / 8GB (64-bit)	8 GB
OS/Application Drive Size	150GB	150 GB (10,000 RPM or better)
Network Card	Gigabit	Gigabit
Hard Drive Speed	7,200 RPM	7,200-15,000 RPM
HW RAID Controller	Recommended for Drive Set 2	Highly Recommended for Drive Set 2
Storage for Index and Images	1 TB	1 TB
Operating System	MS Windows XP (32bit) Vista/2003/2008 server (32-bit or 64-bit)	MS Windows 2003/2008 server (64-bit)
Drive Configuration	Drive Set 1: OS Drive Set 2: Images/Index/Pagefile (RAID 0) NOTE: At a minimum Drive Set 2 needs to have a RAID 0 (striping) using software RAID with at least 2-3 drives in the array.	Drive Set 1: OS (RAID 1) Drive Set 2: Images/Index/Pagefile (RAID 0) NOTE: Drive Set 2 needs to have a HW RAID 0 (striping) with at least 3 drives in the array.

Stand-alone Database Specifications for Windows-based Oracle

If you choose to install the embedded Oracle database provided by AccessData on a second machine or to use an existing Oracle infrastructure, AD recommends one of the following hardware specifications.

	Recommended	Ideal
Processor	Intel® Dual Core or AMD equivalent or better	Intel® Xeon Quad Core or AMD equivalent
CD/DVD Drive	DVD	DVD
RAM	4 GB (32-bit) / 8GB (64bit)	16 GB (64-bit)
OS Drive	150 GB	150 GB (10,000 RPM or better)
Network Card	Gigabit	Gigabit
Hard Drive Speed	7,200 RPM	7,200 - 15,000 RPM
HW RAID Controller	Highly recommended for Drive Set 2	Highly recommended for Drive Set 2. 256MB w/ backup-battery to enable write-through cache.
Storage for DB	1 TB	2+ TB
Operating System	MS Windows XP (32-bit) Vista/2003 server (32-bit or 64-bit)	MS Windows Vista/2003 server (64-bit)
Drive Configuration	Drive Set 1: OS Drive Set 2: Oracle (RAID 0) NOTE: At a minimum Drive Set 2 needs to have a RAID 0 (striping) using software RAID and at least 2 drives in the array.	Drive Set 1: OS (RAID 1) Drive Set 2: Oracle (RAID 0, 0+1) NOTE: At a minimum Drive Set 2 needs to have a RAID 0 or 0+1 (striping) using HW RAID and at least 4 drives in the array.