Recommended Hardware Specifications – New

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ARIA® Comprehensive Cancer Solution,

ARIA® for Medical Oncology,

& ARIA® for Radiation Oncology

Version 11.0

INTRODUCTION

The Recommended Specs are being provided for customer reference and guidance for purchasing.

As a hardware reseller Varian provides these specs to inform customers as to the configuration of equipment they would receive from Varian if the hardware is purchased from Varian at the time of writing of this document, however Varian reserves the right to provide hardware that may be different than the specifications provided here.

Recommended: ARIA® Comprehensive Cancer Solution (CCS) Single Server -- Rack Mounted

	Small	Medium	Large
Platform:	DELL® R510 - (2U)	DELL® R810 - (2U)	DELL® R810 - (2U)
Processor:	(Dual) Intel® Xeon® E5620 2.4Ghz, 12M Cache,Turbo, HT, 1066MHz	(Dual) Intel® Xeon® E7540 2.00GHz, 18M cache, 6.40 GT/s QPI, Turbo, HT, 6C	(Quad) Intel® Xeon® E7540 2.00GHz, 18M cache, 6.40 GT/s QPI, Turbo, HT, 6C
Bus Type:	PCI-E	PCI-E	PCI-E
Memory (RAM)**:**	24GB Memory (6x4GB), 1333MHz Dual Ranked RDIMMs for 2 Processors, Optimized	32GB Memory (16x2GB), 1066MHz, Dual Ranked RDIMMs for 2 or 4 Processors	64GB Memory (16x4GB), 1066MHz, Quad Ranked RDIMMs for 2 or 4 Processors

Drive Controllers:	Internal PERC H700 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled ☐ Configure channel one: 2x146GB (RAID 1); 4x146GB (RAID 5) ☐ Configure channel two: 6x600GB (RAID 5 + 1 Global HS)	Internal PERC H700 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled ☐ Configure channel one: 3x146GB (RAID 1 + 1HS) ☐ DVD operates from SATA CONTROLLER ON BOARD External PERC H800 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled ☐ Configure channel one: 3x146GB (RAID 1 + 1HS), 8x600GB (RAID 5 + 1HS) ☐ Configure channel two: 9x146GB (RAID 5 + 1HS)	Internal PERC H700 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled ☐ Configure channel one: 3x146GB (RAID 1 + 1HS) ☐ DVD operates from SATA CONTROLLER ON BOARD External PERC H800 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled ☐ Configure channel one: 3x146GB (RAID 1 + 1HS), 9x600GB (RAID 5 + 1HS) ☐ Configure channel two: 12x146GB (RAID 5 + 1HS)
Hard Drives: Local Storage	☐ 6x146GB 15K RPM Serial-Attach SCSI 3Gbps 3.5" Hot Plug Hard Drive ☐ 6x600GB 15K RPM Serial-Attach SCSI 6Gbps 3.5" Hot Plug Hard Drive	☐ 3x146GB 15K RPM Serial-Attach SCSI 6Gbps 2.5" Hot Plug Hard Drive	☐ 3x146GB 15K RPM Serial-Attach SCSI 6Gbps 2.5" Hot Plug Hard Drive

Direct Attached Storage Array (DAS): External	None	PowerVault MD1220 with 24 HDD capacity - (2U)	PowerVault MD1220 with 24 HDD capacity - (2U)
Hard Drives (DAS)	None	☐ 12x146GB 15K RPM Serial-Attach SCSI 6Gbps 2.5" Hot Plug Hard Drive ☐ 7x600GB 10K RPM Serial-Attach SCSI 6Gbps 2.5" Hot Plug Hard Drive	☐ 15x146GB 15K RPM Serial-Attach SCSI 6Gbps 2.5" Hot Plug Hard Drive ☐ 9x600GB 10K RPM Serial-Attach SCSI 6Gbps 2.5" Hot Plug Hard Drive
Optical Drive:	External USB Slim optical DVD ROM	Internal Slim optical DVD ROM	Internal Slim optical DVD ROM
Backup Tape:	None[2]	None[2]	None[2]
Network Interface:	Dual Two-Port Embedded Broadcom® NetXtreme II™ 5709 Gigabit Ethernet NIC	Dual Two-Port Embedded Broadcom® NetXtreme II™ 5709 Gigabit Ethernet NIC	Dual Two-Port Embedded Broadcom® NetXtreme II™ 5709 Gigabit Ethernet NIC
Redundancy:	PSU and Fans	PSU and Fans	PSU and Fans
Ports:	1 serial, minimum 2 USB	1 serial, minimum 2 USB	1 serial, minimum 2 USB
Operating System[4]:	ARIA(11.0): Windows Server 2008 R2 SP1 (25 client access licenses or sufficient seat licenses) ARIA (Version 10.0): Windows® Server 2008 R1 (Standard) with Service Pack 2 (25 client access license or sufficient seat licenses)	ARIA(11.0): Windows Server 2008 R2 SP1 (25 client access licenses or sufficient seat licenses) ARIA (Version 10.0): Windows® Server 2008 R1 (Standard) with Service Pack 2 (25 client access license or sufficient seat licenses)	ARIA(11.0): Windows Server 2008 R2 SP1 (25 client access licenses or sufficient seat licenses) ARIA (Version 10.0): Windows® Server 2008 R1 (Standard) with Service Pack 2 (25 client access license or sufficient seat licenses)

File System: NT File System (NTFS)	Server • Volume C, (OS & APP): 146GB (RAID 1) @ 15K RPM; • Volume D, (Database & Database Logs): ~438GB (RAID 5) @ 15K RPM; • Volume E, (Image Directory & Database Dumps): ~2.3TB (RAID 5) @ 15K RPM.	Server • Volume C, (OS & APP): 146GB (RAID 1) @ 15K RPM; Direct Attached Storage • Volume D, (Database): ~1.0TB (RAID 5) @ 15K RPM; • Volume E, (Database Logs): 146GB (RAID 1) @ 15K RPM; • Volume F, (Image Directory & Database Dumps): ~3.0TB (RAID 5) @ 10K RPM.	Server • Volume C, (OS & APP): 146GB (RAID 1) @ 15K RPM; Direct Attached Storage • Volume D, (Database): ~1.4TB (RAID 5) @ 15K RPM; • Volume E, (Database Logs): 146GB (RAID 1) @ 15K RPM; • Volume F, (Image Directory & Database Dumps): ~4.2TB (RAID 5) @ 10K RPM.
Windows® OS Architecture:	64-bit	64-bit	64-bit
Microsoft® .NET Framework:	ARIA (10.0,11.0): 1.1, 2.0, 3.0 and 3.5 ARIA 11.0: 4.0	ARIA (10.0,11.0): 1.1, 2.0, 3.0 and 3.5 ARIA 11.0: 4.0	ARIA (10.0,11.0): 1.1, 2.0, 3.0 and 3.5 ARIA 11.0: 4.0

Notes:

1. Software RAID is neither recommended nor supported with this Database Server.
2. ARIA CCS Server does not include a tape backup device package.

   a. An optional external tape backup device package can be purchased, which would operate from a separate drive controller.

3. Hardware used should be approved based on the current Microsoft® Windows® Catalog Listing.
4. Windows® Server 2008 R2 is currently not compatible with ARIA Version 10.0.
5. Other compatible Windows® operating systems include: Windows 2008 Server R1 SP2 for ARIA v11
6. The Operating System (build and version) of the ARIA CCS Single Server must match the Operating System (build and version) of the HARRP *target* server.
7. 1 Gbps network recommended for maximum speed and performance.

8. CPU identified above is for Intel®'s Nehalem or Westmere (microarchitecture). Each CPU has up to four separate memory controller hubs (MCHs) within the CPU package, and requires each memory channel to be populated per CPU for optimal use.
9. Specifications subject to change without notice as newer computer models become available.

42U Full Height Rack systems come with the following components (see notes below):

- Cables for Keyboard and Video
- NEMA standard power strip
- 1U 8-port keyboard/monitor KVM switch box
- 1U keyboard/trackball and monitor console
- 2U 3000VA Uninterruptable Power Supply (UPS)
- 24-port patch panel (CAT5E)

Recommended: ARIA® Radiation Oncology Server Requirements - Rack Mounted

System Size	Small and Medium	Large
Platform:	DELL® R510 - (2U)	DELL® R810 - (2U)
Processor:	(Dual) Intel® Xeon® E5620 2.4Ghz, 12M Cache,Turbo, HT, 1066MHz	(Dual) Intel® Xeon® E7540 2.00GHz, 18M cache, 6.40 GT/s QPI, Turbo, HT, 6C
Bus Type:	PCI-E	PCI-E
Memory (RAM)**:**	24GB Memory (6x4GB), 1333MHz Dual Ranked RDIMMs for 2 Processors, Optimized	32GB Memory (16x2GB), 1066MHz, Dual Ranked RDIMMs for 2 or 4 Processors
Hard Drives: (Local Storage)	☐ 6x146GB 15K RPM Serial-Attach SCSI 3Gbps 3.5” Hot Plug Hard Drive ☐ 6x600GB 15K RPM Serial-Attach SCSI 6Gbps 3.5” Hot Plug Hard Drive	3x146GB 15K RPM Serial-Attach SCSI 6Gbps 2.5” Hot Plug Hard Drive.
Direct Attached Storage Array (DAS): External	None	PowerVault MD1220 with 24 HDD capacity - (2U)
Hard Drives (DAS)	None	☐ 12x146GB 15K RPM Serial-Attach SCSI 6Gbps 2.5" Hot Plug Hard Drive ☐ 8x600GB 10K RPM Serial-Attach SCSI 6Gbps 2.5" Hot Plug Hard Drive

Drive Controller:	Internal PERC H700 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled • Configure channel one: 2x146GB (RAID 1); 4x146GB (RAID 5) • Configure channel two: 6x600GB (RAID 5 + 1 Global HS)	Internal PERC H700 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled • Configure channel one: 3x146GB (RAID 1 + 1HS) • DVD operates from SATA CONTROLLER ON BOARD External PERC H800 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled • Configure channel one: 3x146GB (RAID 1 + 1HS); 8x600GB (RAID 5 + 1 HS) • Configure channel two: 9x146GB (RAID 5 + 1 HS)
Optical Drive:	External USB Slim optical DVD ROM	Internal Slim optical DVD ROM
Backup Tape:	None[2]	None[2]
Network Interface:	Dual Two-Port Embedded Broadcom® NetXtreme II™ 5709 Gigabit Ethernet NIC	Dual Two-Port Embedded Broadcom® NetXtreme II™ 5709 Gigabit Ethernet NIC
Redundancy:	PSU and Fans	PSU and Fans
Ports:	1 serial, minimum 2 USB	1 serial, minimum 2 USB
Operating System[4], [5]:	ARIA(11.0): Windows Server 2008 R2 SP1 (25 client access licenses or sufficient seat licenses) ARIA (Version 10.0): Windows® Server 2008 R1 (Standard) with Service Pack 2 (25 client access license or sufficient seat licenses)	ARIA(11.0): Windows Server 2008 R2 SP1 (25 client access licenses or sufficient seat licenses) ARIA (Version 10.0): Windows® Server 2008 R1 (Standard) with Service Pack 2 (25 client access license or sufficient seat licenses)

File System: NT File System (NTFS)	Server • Volume C, (OS & APP): 146GB (RAID 1) @ 15K RPM; • Volume D, (Database & Database Logs): ~438GB (RAID 5) @ 15K RPM; • Volume E, (Image Directory & Database Dumps): ~2.3TB (RAID 5) @ 15K RPM.	Server • Volume C, (OS & APP): 146GB (RAID 1) @ 15K RPM; Direct Attached Storage • Volume D, (Database): ~1.0TB (RAID 5) @ 15K RPM; • Volume E, (Database Logs): 146GB (RAID 1) @ 15K RPM; • Volume F, (Image Directory & Database Dumps): ~3.6TB (RAID 5) @ 10K RPM.
Windows® OS Architecture:	64-bit	64-bit
Microsoft® .NET Framework:	ARIA (10.0,11.0): 1.1, 2.0, 3.0 and 3.5 ARIA 11.0: 4.0	ARIA (10.0,11.0): 1.1, 2.0, 3.0 and 3.5 ARIA 11.0: 4.0

Notes:

1. Software RAID is neither recommended nor supported with the ARIA Radiation Oncology Server.
2. ARIA Radiation Oncology Server does not include a tape backup device package.

   a. An optional external tape backup device package can be purchased, which would operate from a separate drive controller.

3. Hardware used should be approved based on the current Microsoft® Windows® Catalog Listing.
4. Windows® Server 2008 R2 is currently not compatible with ARIA Version 10.0
5. Other compatible Windows® operating systems include: Windows 2008 Server R1 SP2 for ARIA v11
6. The Operating System (build and version) of the ARIA Radiation Oncology Server must match the operating system (build and version) of the HARRP *target* server.
7. 1 Gbps network recommended for maximum speed and performance.
8. CPU identified above is for Intel®'s Nehalem or Westmere (microarchitecture). Each CPU has up to three or four separate memory controller hubs (MCHs) within the CPU package, and requires each memory channel to be populated per CPU for optimal use.
9. Specifications subject to change without notice as newer computer models become available.

42U Full Height Rack systems come with the following components (see notes below):

- Cables for Keyboard and Video
- NEMA standard power strip
- 1U 8-port keyboard/monitor KVM switch box
- 1U keyboard/trackball and monitor console
- 2U 3000VA Uninterruptable Power Supply (UPS)
- 24-port patch panel (CAT5E)

Recommended: ARIA RO SC Tower Server Requirements

Platform:	DELL® T610
Processor:	(Dual) Intel® Xeon® E5620 2.4Ghz, 12M Cache, Turbo, HT, 1066MHz
Bus Type:	PCI-E
Memory (RAM)**:**	12 GB Memory (6x4GB), 1333MHz Dual Ranked RDIMMs for 2 Processors, Optimized
Hard Drives (Local Storage)**:**	8x146 GB 15K RPM Serial-Attach SCSI 6Gbps 3.5" Hot Plug Hard Drive. 1 Global Hot spare
Drive Controller:	Internal PERC H700 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled • Configure channel one: 5x146 GB (RAID 5) • Configure Channel two: 2x146 GB (RAID 1) • DVD operates from SATA CONTROLLER ON BOARD
Optical Drive:	Internal Slim optical DVD ROM
Backup Tape	None[2]
Network Interface:	Dual Two-Port Embedded Broadcom® NetXtreme II™ 5709 Gigabit Ethernet NIC
Redundancy:	PSU and Fans
Ports:	1 serial, minimum 2 USB
Operating System[3], [4], [5]**:**	ARIA(11.0): Windows Server 2008 R2 SP1 (5 client access licenses or sufficient seat licenses) ARIA (Version 10.0): Windows® Server 2008 R1 (Standard) with Service Pack 2 (5 client access license or sufficient seat licenses)
File System:	Server

NT File System (NTFS)	• Volume C: 80GB • Volume D: ~504 GB • Volume E: 146GB
Windows® OS Architecture:	64-bit

Notes:

1. Software RAID is neither recommended nor supported with the ARIA Radiation Oncology Server.
2. ARIA Radiation Oncology Server does not include a tape backup device package.
    1. An optional package with tape backup can be purchased, which would operate from a separate drive controller.
3. Hardware used should be approved based on the current Microsoft® Windows® Catalog Listing.
4. Windows® Server 2008 R2 is currently not compatible with ARIA Version 10.0
5. Other compatible Windows® operating systems include: Windows 2008 Server R1 SP2 for ARIA v11
6. The Operating System (build and version) of the ARIA Radiation Oncology Server must match the operating system (build and version) of the HARRP *target* server.
7. 1 Gbps network recommended for maximum speed and performance.
8. CPU identified above is for Intel®'s Nehalem or Westmere (microarchitecture). Each CPU has up to three or four separate memory controller hubs (MCHs) within the CPU package, and requires each memory channel to be populated per CPU for optimal use.
9. Specifications subject to change without notice as newer computer models become available.

Recommended: ARIA® Medical Oncology Server Requirements - Rack Mounted

System Size	Small and Medium	Large
Platform:	DELL® R510 - (2U)	DELL® R810 - (2U)
Processor:	(Dual) Intel® Xeon® E5620 2.4Ghz, 12M Cache,Turbo, HT, 1066MHz	(Dual) Intel® Xeon® E7540 2.00GHz, 18M cache, 6.40 GT/s QPI, Turbo, HT, 6C
Bus Type:	PCI-E	PCI-E
Memory (RAM)**:**	24GB Memory (6x4GB), 1333MHz Dual Ranked RDIMMs for 2 Processors, Optimized	32GB Memory (16x2GB), 1066MHz, Dual Ranked RDIMMs for 2 or 4 Processors
Hard Drives: (Local Storage)	☐ 6x146GB 15K RPM Serial-Attach SCSI 3Gbps 3.5" Hot Plug Hard Drive ☐ 3x600GB 15K RPM Serial-Attach SCSI 6Gbps 3.5" Hot Plug Hard Drive	3x146GB 15K RPM Serial-Attach SCSI 6Gbps 2.5" Hot Plug Hard Drive.
Direct Attached Storage Array (DAS): External	None	PowerVault MD1220 with 24 HDD capacity - (2U)
Hard Drives (DAS)	None	☐ 12x146GB 15K RPM Serial-Attach SCSI 6Gbps 2.5" Hotplug Hard Drive ☐ 3x600GB 10K RPM Serial-Attach SCSI 6Gbps 2.5" Hot Plug Hard Drive

Drive Controller:	Internal PERC H700 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled • Configure channel one: 2x146GB (RAID 1); 4x146GB (RAID 5) • Configure channel two: 3x600GB (RAID 1 + 1 Global HS)	Internal PERC H700 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled • Configure channel one: 3x146GB (RAID 1 + 1HS) • DVD operates from SATA CONTROLLER ON BOARD External PERC H800 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled • Configure channel one: 9x146GB (RAID 5 + 1HS) • Configure channel two: 3x146GB (RAID 1 + 1HS); 3x600GB (RAID 1 + 1HS)
Optical Drive:	External USB Slim optical DVD ROM	Internal Slim optical DVD ROM
Backup Tape:	None[2]	None[2]
Network Interface:	Dual Two-Port Embedded Broadcom® NetXtreme II™ 5709 Gigabit Ethernet NIC	Dual Two-Port Embedded Broadcom® NetXtreme II™ 5709 Gigabit Ethernet NIC
Redundancy:	PSU and Fans	PSU and Fans
Ports:	1 serial, minimum 2 USB	1 serial, minimum 2 USB
Operating System[4], [5]:	ARIA(11.0): Windows Server 2008 R2 SP1 (25 client access licenses or sufficient seat licenses) ARIA (Version 10.0): Windows® Server 2008 R1 (Standard) with Service Pack 2 (25 client access license or sufficient seat licenses)	ARIA(11.0): Windows Server 2008 R2 SP1 (25 client access licenses or sufficient seat licenses) ARIA (Version 10.0): Windows® Server 2008 R1 (Standard) with Service Pack 2 (25 client access license or sufficient seat licenses)

File System: NT File System (NTFS)	Server • Volume C, (OS & APP): 146GB (RAID 1) @ 15K RPM; • Volume D, (Database & Database Logs): ~438GB (RAID 5) @ 15K RPM; • Volume E, (Database Dumps): ~600GB (RAID 1) @ 15K RPM.	Server • Volume C, (OS & APP): 146GB (RAID 1) @ 15K RPM; Direct Attached Storage • Volume D, (Database): ~1.0TB (RAID 5) @ 15K RPM; • Volume E, (Database Logs): 146GB (RAID 1) @ 15K RPM; • Volume F, (Database Dumps): 600GB (RAID 1) @ 10K RPM.
Windows® OS Architecture:	64-bit	64-bit
Microsoft® .NET Framework:	ARIA (10.0,11.0): 1.1, 2.0, 3.0 and 3.5 ARIA 11.0: 4.0	ARIA (10.0,11.0): 1.1, 2.0, 3.0 and 3.5 ARIA 11.0: 4.0

Notes:

1. Software RAID is neither recommended nor supported with the ARIA Medical Oncology Server.
2. ARIA Medical Oncology Server does not include a tape backup device package.

   a. An optional external tape backup device package can be purchased, which would operate from a separate drive controller.

3. Hardware used should be approved based on the current Microsoft® Windows® Catalog Listing.
4. Windows® Server 2008 R2 is currently not compatible with ARIA Version 10.0
5. Other compatible Windows® operating systems include: Windows 2008 Server R1 SP2 for ARIA v11
6. The Operating System (build and version) of the ARIA Medical Oncology Server must match the operating system (build and version) of the HARRP *target* server.
7. 1 Gbps network recommended for maximum speed and performance.
8. CPU identified above is for Intel®'s Nehalem or Westmere (microarchitecture). Each CPU has up to three or four separate memory controller hubs (MCHs) within the CPU package, and requires each memory channel to be populated per CPU for optimal use.
9. Specifications subject to change without notice as newer computer models become available.

42U Full Height Rack systems come with the following components (see notes below):

- Cables for Keyboard and Video
- NEMA standard power strip
- 1U 8-port keyboard/monitor KVM switch box
- 1U keyboard/trackball and monitor console
- 2U 3000VA Uninterruptable Power Supply (UPS)
- 24-port patch panel (CAT5E)

Recommended: Duet Server Requirements - Rack Mounted

System Size	Small and Medium	Large
Platform:	DELL® R510 - (2U)	DELL® R510 - (2U)
Processor:	Single Intel® Xeon® E5620, 2.4Ghz, 12M Cache, 5.86 GT/s QPI, Turbo, HT, 1066MHz	Duel Intel® Xeon® E5620, 2.4Ghz, 12M Cache, Turbo, HT, 1066 MHz
Bus Type:	PCI-E	PCI-E
Memory (RAM)**:**	12GB Memory , 1333MHz Dual Ranked RDIMMs for 1 Processors, Optimized	24GB Memory, 1333MHz Dual Ranked RDIMMs for 2 Processor, Optimized
Hard Drives: (Local Storage)	6x450GB 15K RPM Serial-Attach SCSI 6Gpbs 3.5" Hot Plug Hard Drive.	6x600GB 15K RPM Serial-Attach SCSI 6Gpbs 3.5" Hot Plug Hard Drive.
Drive Controller:	Internal PERC H700 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled • Configure channel one: 6x450GB (RAID 5 + 1HS) • DVD operate from SATA CONTROLLER ON BOARD	Internal PERC H700 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled o Configure channel one: 6x600GB (RAID 5 + 1HS) o DVD operates from SATA CONTROLLER ON BOARD
Optical Drive:	Internal Slim optical DVD ROM	Internal Slim optical DVD ROM
Backup Tape:	None[2]	None[2]

Network Interface:	Dual Two-Port Embedded Broadcom® NetXtreme II™ 5709 Gigabit Ethernet NIC	Dual Two-Port Embedded Broadcom® NetXtreme II™ 5709 Gigabit Ethernet NIC
Redundancy:	PSU and Fans	PSU and Fans
Ports:	1 serial, minimum 2 USB	1 serial, minimum 2 USB
Operating System[4], [5]**:**	ARIA(11.0): Windows Server 2008 R2 SP1 (25 client access licenses or sufficient seat licenses) ARIA (Version 10.0): Windows® Server 2008 R1 (Standard) with Service Pack 2 (25 client access license or sufficient seat licenses)	ARIA(11.0): Windows Server 2008 R2 SP1 (25 client access licenses or sufficient seat licenses) ARIA (Version 10.0): Windows® Server 2008 R1 (Standard) with Service Pack 2 (25 client access license or sufficient seat licenses)
File System: NT File System (NTFS)	Server • Volume C, (OS & APP): 80GB; • Volume D, (Database, Database Logs, Database Dumps, & Image Directory): ~1.6TB (RAID 5) @ 15K RPM.	Server • Volume C, (OS & APP): 80GB; • Volume D, (Database, Database Logs, Database Dumps, & Image Directory): ~2.2TB (RAID 5) @ 15K RPM.
Windows® OS Architecture:	64-bit	64-bit
Microsoft® .NET Framework:	ARIA (10.0,11.0): 1.1, 2.0, 3.0 and 3.5 ARIA 11.0: 4.0	ARIA (10.0,11.0): 1.1, 2.0, 3.0 and 3.5 ARIA 11.0: 4.0

Notes:

1. Software RAID is neither recommended nor supported with the Duet Server.
2. Duet Server does not include a tape backup device package.

   a. An optional external tape backup device package can be purchased, which would operate from a separate drive controller.

3. Hardware used should be approved based on the current Microsoft® Windows® Catalog Listing.
4. Windows® Server 2008 R2 is currently not compatible with Duet Version 10.0
5. Other compatible Windows® operating systems include: Windows 2008 Server R1 SP2 for Duet v11
6. The Operating System (build and version) of the Duet Server must match the operating system (build and version) of the HARRP *target* server.
7. 1 Gbps network recommended for maximum speed and performance.
8. CPU identified above is for Intel®'s Nehalem or Westmere (microarchitecture). Each CPU has up to three or four separate memory controller hubs (MCHs) within the CPU package, and requires each memory channel to be populated per CPU for optimal use.
9. Specifications subject to change without notice as newer computer models become available.

Recommended: Information Exchange Manager (IEM) Server Requirements - Rack Mounted

Platform:	DELL® R610 - (1U)
Processor:	(Dual) Intel® Xeon® X5650, 2.66Ghz, 12M Cache,Turbo, HT, 1333MHz
Bus Type:	PCI-E
Memory (RAM)**:**	24GB Memory (6x4GB), 1333MHz Dual Ranked RDIMMs for 2 Processors, Optimized
Hard Drives (Local Storage)**:**	4x146GB 15K RPM Serial-Attach SCSI 6Gbps 2.5" Hot Plug Hard Drive.
Drive Controller:	Internal PERC H700 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled • Configure channel one: 4x146GB (RAID 5 + 1HS) • DVD operates from SATA CONTROLLER ON BOARD
Optical Drive:	Internal Slim optical DVD ROM
Network Interface:	Dual Two-Port Embedded Broadcom® NetXtreme II™ 5709 Gigabit Ethernet NIC
Redundancy:	PSU and Fans
Ports:	1 serial, minimum 2 USB
Operating System[3], [4], [5]**:**	ARIA(11.0): Windows Server 2008 R2 SP1 (5 client access licenses or sufficient seat licenses) ARIA (Version 10.0): Windows® Server 2008 R1 (Standard) with Service Pack 2 (5 client access license or sufficient seat licenses)
File System: NT File System (NTFS)	Server • Volume C: 80GB

	• Volume D: ~212GB
Windows® OS Architecture:	64-bit

Notes:

10. Software RAID is neither recommended nor supported with the IEM Server.
11. Hardware used should be approved based on the current Microsoft® Windows® Catalog Listing.
12. Windows® Server 2008 R2 is currently not compatible with IEM v10
13. Other compatible Windows® operating systems include: Windows 2008 Server R1 SP2 for IEM v11
14. The Operating System (build and version) of the IEM Server must match the operating system (build and version) of the HARRP *target* server.
15. 1 Gbps network recommended for maximum speed and performance.
16. CPU identified above is for Intel®'s Nehalem or Westmere (microarchitecture). Each CPU has up to three or four separate memory controller hubs (MCHs) within the CPU package, and requires each memory channel to be populated per CPU for optimal use.
17. Specifications subject to change without notice as newer computer models become available.

Recommended: OncQT Database Server Requirements - Rack Mounted

Platform:	DELL® R510 - (1U)
Processor:	(Dual) Intel® Xeon® E5620 2.4Ghz, 12M Cache,Turbo, HT, 1066MHz
Bus Type:	PCI-E
Memory (RAM)**:**	24GB Memory (6x4GB), 1333MHz Dual Ranked RDIMMs for 2 Processors, Optimized
Hard Drives (Local Storage)**:**	• 6x146GB 15K RPM Serial-Attach SCSI 3Gbps 3.5" Hotplug Hard Drive; • 3x600GB 15K RPM Serial-Attach SCSI 6Gbps 3.5" Hot Plug Hard Drive.
Drive Controller:	Internal PERC H700 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled • Configure channel one: 2x146GB (RAID 1) + 4x146GB (RAID 5) • Configure channel two: 3x600GB (RAID 1 + 1 Global HS) • DVD operates from SATA CONTROLLER ON BOARD
Optical Drive:	Internal Slim optical DVD ROM
Backup Tape:	None[2]
Network Interface:	Dual Two-Port Embedded Broadcom® NetXtreme II™ 5709 Gigabit Ethernet NIC
Redundancy:	PSU and Fans
Ports:	1 serial, minimum 2 USB
Operating System[4], [5]**:**	OncQT(11.0): Windows Server 2008 R2 SP1 (25 client access licenses or sufficient seat licenses) OncQT (Version 10.0): Windows® Server 2008 R1 (Standard) with Service Pack 2 (25 client access license or sufficient seat licenses)

File System: NT File System (NTFS)	Server • Volume C, (OS & APP): 146GB; • Volume D, (Database, Database Logs, Database Dumps, & Image Directory): ~438GB (RAID 5) @ 15K RPM; • Volume E, (Database Dumps): 600GB (RAID 1).
Windows® OS Architecture:	64-bit

Notes:

1. Software RAID is neither recommended nor supported with the OncQT Server.
2. OncQT Server does not include a tape backup device package.

   a. An optional external tape backup device package can be purchased, which would operate from a separate drive controller.

3. Hardware used should be approved based on the current Microsoft® Windows® Catalog Listing.
4. Windows® Server 2008 R2 is currently not compatible with the OncQT v10.
5. Other compatible Windows® operating systems include: Windows 2008 Server R1 SP2 for IEM v11
6. 1 Gbps network recommended for maximum speed and performance.
7. CPU identified above is for Intel®'s Nehalem or Westmere (microarchitecture). Each CPU has up to three or four separate memory controller hubs (MCHs) within the CPU package, and requires each memory channel to be populated per CPU for optimal use.
8. Specifications subject to change without notice as newer computer models become available.

Recommended: Citrix Server Requirements - Rack Mounted

Platform:	DELL® R610 - (1U)
Processor:	Dual Intel® Xeon® X5650, 2.66Ghz, 12M Cache,Turbo, HT, 1333MHz
Bus Type:	PCI-E
Memory (RAM)**:**	48GB Memory , 1333MHz Dual Ranked RDIMMs for 2 Processors, Optimized
Hard Drives (Local Storage)**:**	3x146GB 15K RPM Serial-Attach SCSI 6Gbps 2.5" Hot Plug Hard Drive.
Drive Controller:	Internal PERC H700 Integrated RAID[2] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled ☐ Configure channel one: 3x146GB (RAID 1 + 1HS) ☐ DVD operates from SATA CONTROLLER ON BOARD
Optical Drive:	Internal Slim optical DVD ROM
Backup Tape:	None
Network Interface:	Dual Two-Port Embedded Broadcom® NetXtreme II™ 5709 Gigabit Ethernet NIC
Redundancy:	PSU and Fans
Ports:	1 serial, minimum 2 USB
Operating System[6]**:**	ARIA(11.0): Windows Server 2008 R2 SP1 (25 client access licenses or sufficient seat licenses) ARIA (Version 10.0): Windows® Server 2008 R1 (Standard) with Service Pack 2 (25 client access license or sufficient seat licenses)
File System: NT File System (NTFS)	Server • Volume C: 80GB

	• Volume D: ~66GB
Windows® OS Architecture:	64-bit
Microsoft® .NET Framework:	ARIA (10.0,11.0): 1.1, 2.0, 3.0 and 3.5 ARIA 11.0: 4.0

Other Software:

- Microsoft® Terminal Client Access Licenses
- Citrix XenApp™ 5.0 Advanced Edition (64-bit), English only → ARIA for Medical Oncology v10.0
- Citrix XenApp 5.0 Advanced Edition (64-bit), English only → ARIA for Radiation Oncology and Eclipse (v10.0)
- Citrix XenApp™6.0 Advanced Edition (64-bit), English only → ARIA for Medical Oncology v11.0
- Citrix XenApp 6.0 Advanced Edition (64-bit), English only → ARIA for Radiation Oncology and Eclipse (v11.0)

Notes:

1. CPU identified above is for Intel®'s Nehalem or Westmere (microarchitecture). Each CPU has three or four separate memory controller hubs (MCHs) within the CPU package, and requires each memory channel to be populated per CPU for optimal use. The system is supplied with 48 GB of RAM to ensure the CPU & Memory run at optimal speeds though only 32 GB is addressable by Windows Server 2008 Standard Edition.
2. Software RAID is neither recommended nor supported with the Citrix Server.
3. Review the Citrix Road Map on qualifying Citrix Presentation Server and XenApp with ARIA for Radiation Oncology and Eclipse.
4. ARIA for Radiation Oncology and Eclipse version 10.0 are supported within an English language Citrix Farm only.
5. Eclipse version 10.0 is only supported within a 64-bit Citrix Farm.
6. Windows® Server 2008 R2 is currently not compatible with ARIA for Medical Oncology, ARIA for Radiation Oncology, or Eclipse Version 10.0
7. Other compatible Windows® operating systems include: Windows 2008 Server R1 SP2 for ARIA v11
8. Recommended configuration above is for a Single Citrix Server or the First Server in a Citrix Farm.
9. Load Balancing and High Availability (N+1) Citrix Server shall use the same recommended hardware; however, RAID controllers, hot spare drives, and redundant power supplies are not required.
10. 1 Gbps network recommended for maximum speed and performance.
11. Specifications subject to change without notice as newer computer models become available.
12. Hardware used with ARIA for Radiation Oncology and Eclipse must be approved based on the current Microsoft® specifications.
13. Additional Citrix Servers should be planned and accounted for based on concurrent user count.
14. ARIA for Medical Oncology will normally support approximately 50 concurrent users on one (1) Citrix Server.

15. ARIA for Radiation Oncology, Duet and Eclipse will support these concurrent Application Instances (e.g. one copy of an Application being started) on one (1) Recommended Spec Citrix Server ***per*** Client Type row but not combined in the table below (based on 28 GB of RAM available for client software use – 1% = ~280 MB):

Client Type	Application Instance (at 100% load)	~% CPU & Memory/Application Instance	Data Type
ARIA Practice Management (Patient Manager, Time Planner, ...)	50	2	Textual data
ARIA Radiation Oncology (RTChart, Offline Review,...)	23	~4	Textual and 2-D Image data
Eclipse	17	~6	Textual and 2-D/3-D Image data
Duet	23	~4	Textual and 2-D Image data

Recommended: Web Server Requirements - Rack Mounted

Platform:	DELL® R610 - (1U)
Processor:	Dual Intel® Xeon® X5650, 2.66Ghz, 12M Cache,Turbo, HT, 1333MHz
Bus Type:	PCI-E
Memory (RAM)**:**	48GB Memory , 1333MHz Dual Ranked RDIMMs for 2 Processors, Optimized
Hard Drives (Local Storage)**:**	3x146GB 15K RPM Serial-Attach SCSI 6Gbps 2.5" Hot Plug Hard Drive.
Drive Controller:	Internal PERC H700 Integrated RAID[2] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled ☐ Configure channel one: 3x146GB (RAID 1 + 1HS) ☐ DVD operates from SATA CONTROLLER ON BOARD
Optical Drive:	Internal Slim optical DVD ROM
Backup Tape:	None
Network Interface:	Dual Two-Port Embedded Broadcom® NetXtreme II™ 5709 Gigabit Ethernet NIC
Redundancy:	PSU and Fans
Ports:	1 serial, minimum 2 USB
Operating System[6]**:**	ARIA(11.0): Windows Server 2008 R2 SP1 (25 client access licenses or sufficient seat licenses)
File System: NT File System (NTFS)	Server • Volume C: 80GB • Volume D: ~66GB
Windows® OS	64-bit

Architecture:	
Microsoft® .NET Framework:	ARIA (11.0): 1.1, 2.0, 3.0, 3.5 and 4.0
Web Server	IIS 7.5

Notes:

1. With version 11.0 Varian has introduced 'Rich Internet Applications', these applications require a web services component to be running on a server. Customer's whose RO DB or Image Servers just meet minimum spec should supply a separate Web Server as defined here. Customers whose RO Server already meets Recommended specs or has been upgraded to 64 bit compatibility should be able to host the web services on the same server as the DB & Image Server components.
2. CPU identified above is for Intel®'s Nehalem or Westmere (microarchitecture). Each CPU has three or four separate memory controller hubs (MCHs) within the CPU package, and requires each memory channel to be populated per CPU for optimal use.
3. Software RAID is neither recommended nor supported with the Citrix Server.
4. Other compatible Windows® operating systems include: Windows 2008 Server R1 SP2 for ARIA v11
5. 1 Gbps network recommended for maximum speed and performance.
6. Specifications subject to change without notice as newer computer models become available.
7. Hardware used with ARIA for Radiation Oncology and Eclipse must be approved based on the current Microsoft® specifications.

Recommended: ARIA® for Radiation Oncology Information System (OIS) Workstation Requirements [1]

Platform:	DELL® OptiPlex XE (small form factor)
Processor:	(Single) Intel® Core™ 2 Duo E8400 3.0 GHz,6M,1333MHz FSB
Bus Type:	PCI-E
Memory (RAM)[2]**:**	8GB DDR3 Non-ECC SDRAM,1333 MHz
Hard Drives: (Local Storage)	≥ 500 GB SATA-II 3.0Gb/s and 8MB Data Burst Cache
Drive Controller:	SATA-II controller
Video Card/Adapter:	2MB ATI RADEON HD 4550 with DVI output
Optical Drive:	Internal Slim 8X optical DVD +/- RW
Network Interface:	1 LOM 10/100/1000Mbps, compatible with the network operating system and cabling.
Monitor: (Optional)	• 17" LCD monitor capable of 1280 x 1024 at > 60 Hz. • 20" LCD monitor capable of 1600 x 1200 at > 60 Hz.
Keyboard:	101-key IBM®-compatible
Mouse:	Microsoft® Windows-compatible 2-button scroll mouse
Operating System:	• ARIA (10.0,11.0)[3], [4], [5], [6]: Windows® 7 Professional • ARIA (8.8)[12]: Windows XP Professional SP2 & SP3 (32-bit and 64-bit); Windows Vista® SP1 (32-bit)
Windows® OS Service Packs:	• ARIA (10.0,11.0): Windows® 7 Professional (no SP) • ARIA (8.8): Windows XP SP2 & SP3; Windows Vista® SP1
Windows® MUI	• Windows® 7 editions may be used with ARIA Version 10.0 & 11.0: Professional (English), Ultimate (MUI), or Enterprise (MUI)

Packs:	• XP Pro Multilingual User Interface License and MUI Software CD for XP Operating System (International Purchase Option) • Windows Vista® Ultimate and Enterprise versions support MUI
Microsoft Windows Installer:	3.1
Microsoft® .NET Framework:	ARIA (8.8, 10.0 & 11.0): 1.1, 2.0, 3.0, and 3.5 ARIA(11.0): 4.0
File System:	NT File System (NTFS)
Windows® OS Architecture:	64-bit
Ports:	minimum 2 USB

NOTES:

1. Customers, who require the use and access of EclipeSV version 10.0 or 11.0 from an ARIA version 10.0 or 11.0 workstation, will use the Eclipse version 10.0 or 11.0 hardware specifications instead of this ARIA for Radiation Oncology Information System (OIS) Workstation specification.
2. Memory (RAM) required for 32-bit Windows Operating Systems for ARIA Version 10.0 or 11.0: 4GB.
3. Other compatible Windows® Operating Systems include: Windows 7 Professional (32-bit); Windows XP Professional (64-bit), SP2; and Windows XP Professional (32-bit), SP3.
4. The following Windows® 7 editions may be used with ARIA Version 10.0 & 11.0: Professional (English), Ultimate (MUI), or Enterprise (MUI).
5. Languages supported by ARIA Version 10.0 and 11.0 are qualified for use with the Windows® 7 operating system.
6. Windows® Vista® is not a validated operating system for ARIA Version 10.0 or 11.0.
7. PC hardware used should be approved based on the current Microsoft® Windows® Catalog Listing.
8. Client workstations usually do not require uninterruptible power supplies. However, they may be needed in areas that experience frequent brown outs or brief power drop outs.
9. 4D Integrated Treatment Console (4DITC) and Varian Treatment (VT) hardware is provided by Varian as a software/hardware package and specifications differ from those listed on this website.
10. ARIA 8.8 Documents is compatible with Microsoft Word 2003 and Microsoft Word 2007 SP2.
11. ARIA 10.0 Documents is compatible with Microsoft Word 2003, Microsoft Word 2007 SP2 and Microsoft Word 2010.
12. ARIA 11.0 Documents is compatible with Microsoft Word 2007 SP2 and Microsoft Word 2010.
13. Windows Vista® Versions: Business (English), Ultimate (MUI), or Enterprise (MUI).
14. Specifications subject to change without notice as newer computer models become available.

Recommended: HARRP Comprehensive Cancer Solution (CCS) Single Server -- Rack Mounted

	Small	Medium	Large
Platform:	DELL® R510 - (2U)	DELL® R810 - (2U)	DELL® R810 - (2U)
Processor:	(Dual) Intel® Xeon® E5620 2.4Ghz, 12M Cache,Turbo, HT, 1066MHz	(Dual) Intel® Xeon® E7540 2.00GHz, 18M cache, 6.40 GT/s QPI, Turbo, HT, 6C	(Quad) Intel® Xeon® E7540 2.00GHz, 18M cache, 6.40 GT/s QPI, Turbo, HT, 6C
Bus Type:	PCI-E	PCI-E	PCI-E
Memory (RAM)**:**	24GB Memory (6x4GB), 1333MHz Dual Ranked RDIMMs for 2 Processors, Optimized	32GB Memory (16x2GB), 1066MHz, Dual Ranked RDIMMs for 2 or 4 Processors	64GB Memory (16x4GB), 1066MHz, Quad Ranked RDIMMs for 2 or 4 Processors
Drive Controllers:	Internal PERC H700 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled ☐ Configure channel one: 2x146GB (RAID 1); 4x146GB (RAID 5) ☐ Configure channel two: 6x600GB (RAID 5 + 1 Global HS)	Internal PERC H700 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled ☐ Configure channel one: 3x146GB (RAID 1 + 1HS) ☐ DVD operates from SATA CONTROLLER ON BOARD External PERC H800 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled ☐ Configure channel one: 3x146GB (RAID 1 + 1HS), 8x600GB (RAID 5 + 1HS) ☐ Configure channel two:	Internal PERC H700 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled ☐ Configure channel one: 3x146GB (RAID 1 + 1HS) ☐ DVD operates from SATA CONTROLLER ON BOARD External PERC H800 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled ☐ Configure channel one: 3x146GB (RAID 1 + 1HS), 9x600GB (RAID 5 + 1HS) ☐ Configure channel two:

		9x146GB (RAID 5 + 1HS)	12x146GB (RAID 5 + 1HS)
Hard Drives: Local Storage	☐ 6x146GB 15K RPM Serial-Attach SCSI 3Gbps 3.5” Hot Plug Hard Drive ☐ 6x600GB 15K RPM Serial-Attach SCSI 6Gbps 3.5” Hot Plug Hard Drive	☐ 3x146GB 15K RPM Serial-Attach SCSI 6Gbps 2.5” Hot Plug Hard Drive	☐ 3x146GB 15K RPM Serial-Attach SCSI 6Gbps 2.5" Hot Plug Hard Drive

Direct Attached Storage Array (DAS): External	None	PowerVault MD1220 with 24 HDD capacity - (2U)	PowerVault MD1220 with 24 HDD capacity - (2U)
Hard Drives (DAS)	None	☐ 12x146GB 15K RPM Serial-Attach SCSI 6Gbps 2.5" Hot Plug Hard Drive ☐ 7x600GB 10K RPM Serial-Attach SCSI 6Gbps 2.5" Hot Plug Hard Drive	☐ 15x146GB 15K RPM Serial-Attach SCSI 6Gbps 2.5" Hot Plug Hard Drive ☐ 9x600GB 10K RPM Serial-Attach SCSI 6Gbps 2.5" Hot Plug Hard Drive
Optical Drive:	External USB Slim optical DVD ROM	Internal Slim optical DVD ROM	Internal Slim optical DVD ROM
Network Interface:	Dual Two-Port Embedded Broadcom® NetXtreme II™ 5709 Gigabit Ethernet NIC	Dual Two-Port Embedded Broadcom® NetXtreme II™ 5709 Gigabit Ethernet NIC	Dual Two-Port Embedded Broadcom® NetXtreme II™ 5709 Gigabit Ethernet NIC
Redundancy:	PSU and Fans	PSU and Fans	PSU and Fans
Ports:	1 serial, minimum 2 USB	1 serial, minimum 2 USB	1 serial, minimum 2 USB
Operating System[3]:	ARIA(11.0): Windows Server 2008 R2 SP1 (25 client access licenses or sufficient seat licenses) ARIA (Version 10.0): Windows® Server 2008 R1 (Standard) with Service Pack 2 (25 client access license or sufficient seat licenses)	ARIA(11.0): Windows Server 2008 R2 SP1 (25 client access licenses or sufficient seat licenses) ARIA (Version 10.0): Windows® Server 2008 R1 (Standard) with Service Pack 2 (25 client access license or sufficient seat licenses)	ARIA(11.0): Windows Server 2008 R2 SP1 (25 client access licenses or sufficient seat licenses) ARIA (Version 10.0): Windows® Server 2008 R1 (Standard) with Service Pack 2 (25 client access license or sufficient seat licenses)

File System: NT File System (NTFS)	Server • Volume C, (OS & APP): 146GB (RAID 1) @ 15K RPM; • Volume D, (Database & Database Logs): ~438GB (RAID 5) @ 15K RPM; • Volume E, (Image Directory & Database Dumps): ~2.3TB (RAID 5) @ 15K RPM.	Server • Volume C, (OS & APP): 146GB (RAID 1) @ 15K RPM; Direct Attached Storage • Volume D, (Database): ~1.0TB (RAID 5) @ 15K RPM; • Volume E, (Database Logs): 146GB (RAID 1) @ 15K RPM; • Volume F, (Image Directory & Database Dumps): ~3.0TB (RAID 5) @ 10K RPM.	Server • Volume C, (OS & APP): 146GB (RAID 1) @ 15K RPM; Direct Attached Storage • Volume D, (Database): ~1.4TB (RAID 5) @ 15K RPM; • Volume E, (Database Logs): 146GB (RAID 1) @ 15K RPM; • Volume F, (Image Directory & Database Dumps): ~4.2TB (RAID 5) @ 10K RPM.
Windows® OS Architecture:	64-bit	64-bit	64-bit
Microsoft® .NET Framework:	ARIA (10.0,11.0): 1.1, 2.0, 3.0 and 3.5 ARIA 11.0: 4.0	ARIA (10.0,11.0): 1.1, 2.0, 3.0 and 3.5 ARIA 11.0: 4.0	ARIA (10.0,11.0): 1.1, 2.0, 3.0 and 3.5 ARIA 11.0: 4.0
Other Software:	Double-Take™ for Windows® Server Standard or Advanced. One license required per server.	Double-Take™ for Windows® Server Standard or Advanced. One license required per server.	Double-Take™ for Windows® Server Standard or Advanced. One license required per server.

Notes:

1. Software RAID is neither recommended nor supported with this Database Server.
2. Hardware used should be approved based on the current Microsoft® Windows® Catalog Listing.
3. Windows® Server 2008 R2 is currently not compatible with ARIA Version 10.0
4. The Operating System (build and version) of the ARIA CCS Single Server must match the Operating System (build and version) of the HARRP *target* server.
5. Primary (source) and HARRP (target) servers should not be placed in the same rack or location for optimum reliability.
6. 1 Gbps network recommended for maximum speed and performance.
7. CPU identified above is for Intel®'s Nehalem or Westmere (microarchitecture). Each CPU has up to four separate memory controller hubs (MCHs) within the CPU package, and requires each memory channel to be populated per CPU for optimal use.
8. Double-Take® Standard licenses only work with Windows® Standard Operating Systems.
9. Double-Take® Advanced licenses only work with Windows® Advanced or Enterprise Operating Systems.
10. Specifications subject to change without notice as newer computer models become available.
11. Optional full height rack available at extra cost.

24U Half Height Rack systems come with the following components:

- 24U Short Rack
- Cables for Keyboard and Video
- NEMA standard power strip
- 1U 8-port keyboard/monitor KVM switch box
- 1U keyboard/trackball and monitor console
- 2U 3000VA Uninterruptable Power Supply (UPS)
- 24-port patch panel (CAT5E)

Recommended: HARRP ARIA® Radiation Oncology Server Requirements - Rack Mounted

System Size	Small and Medium	Large
Platform:	DELL® R510 - (2U)	DELL® R810 - (2U)
Processor:	(Dual) Intel® Xeon® E5620 2.4Ghz, 12M Cache,Turbo, HT, 1066MHz	(Dual) Intel® Xeon® E7540 2.00GHz, 18M cache, 6.40 GT/s QPI, Turbo, HT, 6C
Bus Type:	PCI-E	PCI-E
Memory (RAM)**:**	24GB Memory (6x4GB), 1333MHz Dual Ranked RDIMMs for 2 Processors, Optimized	32GB Memory (16x2GB), 1066MHz, Dual Ranked RDIMMs for 2 or 4 Processors
Hard Drives: (Local Storage)	☐ 2x300GB 15K RPM Serial-Attach SCSI 6Gbps 2.5" Hot Plug Hard Drive ☐ 6x300GB 15K RPM Serial-Attach SCSI 6Gbps 3.5" Hot Plug Hard Drive ☐ 6x600GB 15K RPM Serial-Attach SCSI 6Gbps 3.5" Hot Plug Hard Drive	3x300GB 15K RPM Serial-Attach SCSI 6Gbps 2.5" Hot Plug Hard Drive.
Direct Attached Storage Array (DAS): External	None	PowerVault MD1220 with 24 HDD capacity - (2U)
Hard Drives (DAS)	None	☐ 12x146GB 15K RPM Serial-Attach SCSI 6Gbps 2.5" Hot Plug Hard Drive ☐ 8x600GB 10K RPM Serial-Attach SCSI 6Gbps 2.5" Hot Plug Hard Drive

Drive Controller:	Internal PERC H700 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled. • Configure channel one: 2x300GB (RAID 1); 6x600GB (RAID 5 + 1HS) • Configure channel two: 6x300GB (RAID 5 + 1HS)	Internal PERC H700 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled. • Configure channel one: 3x300GB (RAID 1 + 1HS) • DVD operates from SATA CONTROLLER ON BOARD External PERC H800 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled • Configure channel one: 9x146GB (RAID 5 + 1HS); 3x146 (RAID 1 + 1HS) • Configure channel two: 8x600GB (RAID 5 + 1HS)
Optical Drive:	External USB Slim optical DVD ROM	Internal Slim optical DVD ROM
Backup Tape:	None	None
Network Interface:	Dual Two-Port Embedded Broadcom® NetXtreme II™ 5709 Gigabit Ethernet NIC	Dual Two-Port Embedded Broadcom® NetXtreme II™ 5709 Gigabit Ethernet NIC
Redundancy:	PSU and Fans	PSU and Fans
Ports:	1 serial, minimum 2 USB	1 serial, minimum 2 USB
Operating System[3], [4]:	ARIA(11.0): Windows Server 2008 R2 SP1 (25 client access licenses or sufficient seat licenses) ARIA (Version 10.0): Windows® Server 2008 R1 (Standard) with Service Pack 2 (25 client access license or sufficient seat licenses)	ARIA(11.0): Windows Server 2008 R2 SP1 (25 client access licenses or sufficient seat licenses) ARIA (Version 10.0): Windows® Server 2008 R1 (Standard) with Service Pack 2 (25 client access license or sufficient seat licenses)

File System: NT File System (NTFS)	Server • Volume C, (OS & APP): 300GB (RAID 1) @ 15K RPM; • Volume D, (Database & Database Logs): ~584GB (RAID 5) @ 15K RPM; • Volume E, (Image Directory & Database Dumps): ~2.3TB (RAID 5) @ 15K RPM.	Server • Volume C, (OS & APP): 300GB (RAID 1) @ 15K RPM; Direct Attached Storage • Volume D, (Database): ~1.0TB (RAID 5) @ 15K RPM; • Volume E, (Database Logs): 146GB (RAID 1) @ 15K RPM; • Volume F, (Image Directory & Database Dumps): ~3.6TB (RAID 5) @ 10K RPM.
Windows® OS Architecture:	64-bit	64-bit
Microsoft® .NET Framework:	ARIA (10.0,11.0): 1.1, 2.0, 3.0 and 3.5 ARIA 11.0: 4.0	ARIA (10.0,11.0): 1.1, 2.0, 3.0 and 3.5 ARIA 11.0: 4.0

Notes:

1. Software RAID is neither recommended nor supported with the HARRP ARIA Radiation Oncology Server.
2. Hardware used should be approved based on the current Microsoft® Windows® Catalog Listing.
3. Windows® Server 2008 R2 is currently not compatible with ARIA Version 10.0
4. Other compatible Windows® operating systems include: Windows Server 2008 R1 for ARIA Version 11.0
5. The HARRP ARIA Radiation Oncology Server should be installed in a rack system.
6. Primary (source) and HARRP (target) servers should not be placed in the same rack or location for optimum reliability.
7. The Operating System (build and version) of the ARIA Radiation Oncology Server must match the operating system (build and version) of the HARRP *target* server.
8. 1 Gbps network recommended for maximum speed and performance.
9. CPU identified above is for Intel®'s Nehalem or Westmere (microarchitecture). Each CPU has up to three or four separate memory controller hubs (MCHs) within the CPU package, and requires each memory channel to be populated per CPU for optimal use.
10. Double-Take® Standard licenses only work with Windows® Standard Operating Systems.
11. Double-Take® Advanced licenses only work with Windows® Advanced or Enterprise Operating Systems.
12. Specifications subject to change without notice as newer computer models become available.

24U Half Height Rack systems come with the following components:

- 24U Short Rack
- Cables for Keyboard and Video
- NEMA standard power strip
- 1U 8-port keyboard/monitor KVM switch box
- 1U keyboard/trackball and monitor console
- 2U 3000VA Uninterruptable Power Supply (UPS)
- 24-port patch panel (CAT5E)

Recommended: HARRP ARIA® Medical Oncology Server Requirements - Rack Mounted

System Size	Small and Medium	Large
Platform:	DELL® R510 - (2U)	DELL® R810 - (2U)
Processor:	(Dual) Intel® Xeon® E5620 2.4Ghz, 12M Cache,Turbo, HT, 1066MHz	(Dual) Intel® Xeon® E7540 2.00GHz, 18M cache, 6.40 GT/s QPI, Turbo, HT, 6C
Bus Type:	PCI-E	PCI-E
Memory (RAM)**:**	24GB Memory (6x4GB), 1333MHz Dual Ranked RDIMMs for 2 Processors, Optimized	32GB Memory (16x2GB), 1066MHz, Dual Ranked RDIMMs for 2 or 4 Processors
Hard Drives: (Local Storage)	☐ 4x146GB 15K RPM Serial-Attach SCSI 6Gbps 2.5" Hotplug Hard Drive ☐ 2x300GB 15K RPM Serial-Attach SCSI 6Gbps 3.5" Hotplug Hard Drive ☐ 3x600GB 15K RPM Serial-Attach SCSI 6Gbps 3.5" Hot Plug Hard Drive	3x300GB 15K RPM Serial-Attach SCSI 6Gbps 2.5" Hot Plug Hard Drive
Direct Attached Storage Array (DAS): External	None	PowerVault MD1220 with 24 HDD capacity - (2U)
Hard Drives (DAS)	None	☐ 12x146GB 15K RPM Serial-Attach SCSI 6Gbps 2.5" Hotplug Hard Drive ☐ 3x600GB 10K RPM Serial-Attach SCSI 6Gbps 2.5" Hot Plug Hard Drive

Drive Controller:	Internal PERC H700 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled • Configure channel one: 2x300GB (RAID 1) + 4x146GB (RAID 5) • Configure channel two: 3x600GB (RAID 1 + 1 Global HS)	Internal PERC H700 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled • Configure channel one: 3x146GB (RAID 1 + 1HS) • DVD operates from SATA CONTROLLER ON BOARD External PERC H800 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled • Configure channel one: 9x146GB (RAID 5 + 1HS) • Configure channel two: 3x146GB (RAID 1 + 1HS); 3x600GB (RAID 1 + 1HS)
Optical Drive:	External USB Slim optical DVD ROM	Internal Slim optical DVD ROM
Network Interface:	Dual Two-Port Embedded Broadcom® NetXtreme II™ 5709 Gigabit Ethernet NIC	Dual Two-Port Embedded Broadcom® NetXtreme II™ 5709 Gigabit Ethernet NIC
Redundancy:	PSU and Fans	PSU and Fans
Ports:	1 serial, minimum 2 USB	1 serial, minimum 2 USB
Operating System[3], [4]:	ARIA(11.0): Windows Server 2008 R2 SP1 (25 client access licenses or sufficient seat licenses) ARIA (Version 10.0): Windows® Server 2008 R1 (Standard) with Service Pack 2 (25 client access license or sufficient seat licenses)	ARIA(11.0): Windows Server 2008 R2 SP1 (25 client access licenses or sufficient seat licenses) ARIA (Version 10.0): Windows® Server 2008 R1 (Standard) with Service Pack 2 (25 client access license or sufficient seat licenses)

File System: NT File System (NTFS)	Server • Volume C, (OS & APP): 300GB (RAID 1) @ 15K RPM; • Volume D, (Database & Database Logs): ~438GB (RAID 5) @ 15K RPM; • Volume E, (Database Dumps): ~600GB (RAID 1) @ 15K RPM.	Server • Volume C, (OS & APP): 300GB (RAID 1) @ 15K RPM; Direct Attached Storage • Volume D, (Database): ~1.0TB (RAID 5) @ 15K RPM; • Volume E, (Database Logs): 146GB (RAID 1) @ 15K RPM; • Volume F, (Database Dumps): 600GB (RAID 1) @ 10K RPM.
Windows® OS Architecture:	64-bit	64-bit
Microsoft® .NET Framework:	ARIA (10.0,11.0): 1.1, 2.0, 3.0 and 3.5 ARIA 11.0: 4.0	ARIA (10.0,11.0): 1.1, 2.0, 3.0 and 3.5 ARIA 11.0: 4.0

Notes:

1. Software RAID is neither recommended nor supported with the HARRP ARIA Medical Oncology Server.
2. Hardware used should be approved based on the current Microsoft® Windows® Catalog Listing.
3. Windows® Server 2008 R2 is currently not compatible with ARIA Version 10.0
4. Other compatible Windows® operating systems include: Windows Server 2008 R1 for ARIA Version 11.0
5. The HARRP ARIA Medical Oncology Server should be installed in a rack system.
6. Primary (source) and HARRP (target) servers should not be placed in the same rack or location for optimum reliability.
7. The Operating System (build and version) of the HARRP ARIA Medical Oncology Server must match the operating system (build and version) of the HARRP *target* server.
8. 1 Gbps network recommended for maximum speed and performance.
9. CPU identified above is for Intel®'s Nehalem or Westmere (microarchitecture). Each CPU has up to three or four separate memory controller hubs (MCHs) within the CPU package, and requires each memory channel to be populated per CPU for optimal use.
10. Double-Take® Standard licenses only work with Windows® Standard Operating Systems.
11. Double-Take® Advanced licenses only work with Windows® Advanced or Enterprise Operating Systems.
12. Specifications subject to change without notice as newer computer models become available.

24U Half Height Rack systems come with the following components:

- 24U Short Rack
- Cables for Keyboard and Video
- NEMA standard power strip
- 1U 8-port keyboard/monitor KVM switch box
- 1U keyboard/trackball and monitor console
- 2U 3000VA Uninterruptable Power Supply (UPS)
- 24-port patch panel (CAT5E)

Recommended: HARRP Information Exchange Manager (IEM) Server Requirements - Rack Mounted

Platform:	DELL® R610 - (1U)
Processor:	(Dual) Intel® Xeon® X5650, 2.66Ghz, 12M Cache,Turbo, HT, 1333MHz
Bus Type:	PCI-E
Memory (RAM)**:**	24GB Memory (6x4GB), 1333MHz Dual Ranked RDIMMs for 2 Processors, Optimized
Hard Drives (Local Storage)**:**	4x146GB 15K RPM Serial-Attach SCSI 6Gbps 2.5" Hot Plug Hard Drive.
Drive Controller:	Internal PERC H700 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled • Configure channel one: 4x146GB (RAID 5 + 1HS) • DVD operates from SATA CONTROLLER ON BOARD
Optical Drive:	Internal Slim optical DVD ROM
Network Interface:	Dual Two-Port Embedded Broadcom® NetXtreme II™ 5709 Gigabit Ethernet NIC
Redundancy:	PSU and Fans
Ports:	1 serial, minimum 2 USB
Operating System[3], [4], [5]**:**	IEM(11.0): Windows Server 2008 R2 SP1 (5 client access licenses or sufficient seat licenses) IEM (Version 10.0): Windows® Server 2008 R1 (Standard) with Service Pack 2 (5 client access license or sufficient seat licenses)
File System: NT File System (NTFS)	Server • Volume C: 80GB

	• Volume D: ~212GB
Windows® OS Architecture:	64-bit

Notes:

1. Software RAID is neither recommended nor supported with the HARRP IEM Server.
2. Hardware used should be approved based on the current Microsoft® Windows® Catalog Listing.
3. Windows® Server 2008 R2 is currently not compatible with the IEM Server.
4. Other compatible Windows® operating systems include: Windows Server 2008 R1 for IEM Version 11.0
5. The HARRP IEM Server should be installed in a rack system.
6. Primary (source) and HARRP (target) servers should not be placed in the same rack or location for optimum reliability.
7. The Operating System (build and version) of the IEM Server must match the operating system (build and version) of the HARRP *target* server.
8. 1 Gbps network recommended for maximum speed and performance.
9. CPU identified above is for Intel®'s Nehalem or Westmere (microarchitecture). Each CPU has up to three or four separate memory controller hubs (MCHs) within the CPU package, and requires each memory channel to be populated per CPU for optimal use.
10. Double-Take® Standard licenses only work with Windows® Standard Operating Systems.
11. Double-Take® Advanced licenses only work with Windows® Advanced or Enterprise Operating Systems.
12. Specifications subject to change without notice as newer computer models become available.

Recommended: HARRP Duet Server Requirements - Rack Mounted

System Size	Small and Medium	Large
Platform:	DELL® R510 - (2U)	DELL® R510 - (2U)
Processor:	Single Intel® Xeon® E5620, 2.4Ghz, 12M Cache, 5.86 GT/s QPI, Turbo, HT, 1066MHz	Duel Intel® Xeon® E5620, 2.4Ghz, 12M Cache, Turbo, HT, 1066 MHz
Bus Type:	PCI-E	PCI-E
Memory (RAM)**:**	12 GB Memory , 1333MHz Dual Ranked RDIMMs for 1 Processors, Optimized	24 GB Memory, 1333MHz Dual Ranked RDIMMs for 2 Processor, Optimized
Hard Drives (Local Storage)**:**	6x450GB 15K RPM Serial-Attach SCSI 6Gpbs 3.5" Hot Plug Hard Drive.	6x600GB 15K RPM Serial-Attach SCSI 6Gpbs 3.5" Hot Plug Hard Drive.
Drive Controller:	Internal PERC H700 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled • Configure channel one: 6x450GB (RAID 5 + 1HS) • DVD operate from SATA CONTROLLER ON BOARD	Internal PERC H700 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled o Configure channel one: 6x600GB (RAID 5 + 1HS) o DVD operates from SATA CONTROLLER ON BOARD
Optical Drive:	Internal Slim optical DVD ROM	Internal Slim optical DVD ROM
Network Interface:	Dual Two-Port Embedded Broadcom® NetXtreme II™ 5709 Gigabit Ethernet NIC	Dual Two-Port Embedded Broadcom® NetXtreme II™ 5709 Gigabit Ethernet NIC
Redundancy:	PSU and Fans	PSU and Fans

Ports:	1 serial, minimum 2 USB	1 serial, minimum 2 USB
Operating System[3], [4]**:**	Duet(11.0): Windows Server 2008 R2 SP1 (25 client access licenses or sufficient seat licenses) Duet (Version 10.0): Windows® Server 2008 R1 (Standard) with Service Pack 2 (25 client access license or sufficient seat licenses)	Duet(11.0): Windows Server 2008 R2 SP1 (25 client access licenses or sufficient seat licenses) Duet (Version 10.0): Windows® Server 2008 R1 (Standard) with Service Pack 2 (25 client access license or sufficient seat licenses)
File System: NT File System (NTFS)	Server • Volume C, (OS & APP): 80GB; • Volume D, (Database, Database Logs, Database Dumps, & Image Directory): ~1.6TB (RAID 5) @ 15K RPM.	Server • Volume C, (OS & APP): 80GB; • Volume D, (Database, Database Logs, Database Dumps, & Image Directory): ~2.2TB (RAID 5) @ 15K RPM.
Windows® OS Architecture:	64-bit	64-bit
Microsoft® .NET Framework:	Duet: (10.0,11.0): 1.1, 2.0, 3.0 and 3.5 Duet 11.0: 4.0	Duet (10.0,11.0): 1.1, 2.0, 3.0 and 3.5 Duet 11.0: 4.0

Notes:

1. Software RAID is neither recommended nor supported with the HARRP Duet Server.
2. Hardware used should be approved based on the current Microsoft® Windows® Catalog Listing.
3. Windows® Server 2008 R2 is currently not compatible with Duet Version 10.0
4. Other compatible Windows® operating systems include: Windows Server 2008 R1 for Duet Version 11.0
5. The HARRP Duet Server should be installed in a rack system.
6. Primary (source) and HARRP (target) servers should not be placed in the same rack or location for optimum reliability.
7. The Operating System (build and version) of the Duet Server must match the operating system (build and version) of the HARRP *target* server.
8. 1 Gbps network recommended for maximum speed and performance.
9. CPU identified above is for Intel®'s Nehalem or Westmere (microarchitecture). Each CPU has up to three or four separate memory controller hubs (MCHs) within the CPU package, and requires each memory channel to be populated per CPU for optimal use.
10. Double-Take® Standard licenses only work with Windows® Standard Operating Systems.

11. Double-Take® Advanced licenses only work with Windows® Advanced or Enterprise Operating Systems.
12. Specifications subject to change without notice as newer computer models become available.

Recommended: ARIA® for RO/MO T-Box Server Requirements - Rack Mounted

Platform:	DELL® R610 - (1U)
Processor:	(Single) Intel® Xeon® E5530, 2.4Ghz, 8M Cache, Turbo, HT, 1066MHz
Bus Type:	PCI-E
Memory (RAM)**:**	12GB Memory (3x4GB), 1333MHz Dual Ranked RDIMMs for 1 Processor, Optimized
Hard Drives: (Local Storage)	• 2x600GB 10K RPM Serial-Attach SCSI 6Gbps 2.5" Hot Plug Hard Drive
Drive Controller:	Internal PERC H700 Integrated RAID[1] Controller with 512MB of battery-backed cache with (50/50) read/write cache enabled. • Configure channel one: 2x600GB (RAID 1) • DVD operates from SATA CONTROLLER ON BOARD
Optical Drive:	Internal Slim optical DVD ROM
Backup Tape:	None[3]
Network Interface:	Dual Two-Port Embedded Broadcom® NetXtreme II™ 5709 Gigabit Ethernet NIC
Redundancy:	PSU and Fans
Ports:	1 serial, minimum 2 USB
Operating System[3], [4]**:**	ARIA(11.0): Windows® Server 2008 R2 SP1 (5 client access licenses or sufficient seat licenses) ARIA(10.0): Windows® Server 2008 R1 (Standard) with SP2 (5 client access license or sufficient seat licenses)
File System: NT File System	Server • Volume C, (OS & APP): 80GB; • Volume D, (Database, Database Logs, Database Dumps, & Image

(NTFS)	Directory): ~520GB (RAID 5) @ 15K RPM.
Windows® OS Architecture:	64-bit

Notes:

1. Software RAID is neither recommended nor supported with the ARIA Medical Oncology T-Box Server.
2. Hardware used should be approved based on the current Microsoft® Windows® Catalog Listing.
3. Windows® Server 2008 R2 is currently not compatible with ARIA Version 10.0
4. Other compatible Windows® operating systems include: Windows® Server 2008 R1 for ARIA Version 11.0
5. 1 Gbps network recommended for maximum speed and performance.
6. CPU identified above is for Intel®'s Nehalem or Westmere (microarchitecture). Each CPU has up to three or four separate memory controller hubs (MCHs) within the CPU package, and requires each memory channel to be populated per CPU for optimal use.
7. Specifications subject to change without notice as newer computer models become available.

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