GE Healthcare

Technical Publication

Direction 5184024-100
Revision 5

GE Healthcare
LOGIQworks Basic Service Manual

Important Precautions

WARNING

- THIS SERVICE MANUAL IS AVAILABLE IN ENGLISH ONLY.
- IF A CUSTOMER'S SERVICE PROVIDER REQUIRES A LANGUAGE OTHER THAN ENGLISH, IT IS THE CUSTOMER'S RESPONSIBILITY TO PROVIDE TRANSLATION SERVICES.
- DO NOT ATTEMPT TO SERVICE THE EQUIPMENT UNLESS THIS SERVICE MANUAL HAS BEEN CONSULTED AND IS UNDERSTOOD.
- FAILURE TO HEED THIS WARNING MAY RESULT IN INJURY TO THE SERVICE PROVIDER, OPERATOR OR PATIENT FROM ELECTRIC SHOCK, MECHANICAL OR OTHER HAZARDS.

AVERTISSEMENT

- CE MANUEL DE MAINTENANCE N'EST DISPONIBLE QU'EN ANGLAIS.
- SI LE PRESTATAIRE DE SERVICES DU CLIENT A BESOIN DE CE MANUEL DANS UNE AUTRE LANGUE QUE L'ANGLAIS, IL INCOMBE AU CLIENT DE LE FAIRE TRADUIRE.
- NE PAS TENTER D'INTERVENTION SUR LES ÉQUIPEMENTS TANT QUE LE MANUEL DE MAINTENANCE N'A PAS ÉTÉ CONSULTÉ ET COMPRIS.
- LE NON-RESPECT DE CET AVERTISSEMENT PEUT ENTRAÎNER CHEZ LE TECHNICIEN, L'OPÉRATEUR OU LE PATIENT DES BLESSURES DUES À DES DANGERS ÉLECTRIQUES, MÉCANIQUES OU AUTRES.

WARNUNG

- DIESES KUNDENDIENST-HANDBUCH EXISTIERT NUR IN ENGLISCHER SPRACHE.
- FALLS EIN FREMDER KUNDENDIENST EINE ANDERE SPRACHE BENÖTIGT, IST ES AUFGABE DES KUNDEN, FÜR EINE ENTSPRECHENDE ÜBERSETZUNG ZU SORGEN.
- WARTEN SIE DIESES GERÄT NUR, WENN SIE DIE ENTSPRECHENDEN ANWEISUNGEN IM KUNDENDIENST-HANDBUCH GELESEN HABEN UND NACHVOLLZIEHEN KÖNNEN.
- WIRD DIESE WARNUNG NICHT BEACHTET, SO KANN ES ZU VERLETZUNGEN DES KUNDENDIENSTTECHNIKERS, DES BEDIENERS ODER DES PATIENTEN DURCH ELEKTRISCHE SCHLÄGE, MECHANISCHE ODER SONSTIGE GEFAHREN KOMMEN.

AVISO

- **ESTE MANUAL DE SERVICIO SÓLO ESTÁ DISPONIBLE EN INGLÉS.**
- **SI ALGÚN PROVEEDOR DE SERVICIOS AJENO A GEMS SOLICITA UN IDIOMA QUE NO SEA EL INGLÉS, LA TRADUCCIÓN ES RESPONSABILIDAD DEL CLIENTE.**
- **NO SE DEBERÁ DAR SERVICIO TÉCNICO AL EQUIPO SIN HABER CONSULTADO Y COMPRENDIDO ESTE MANUAL DE SERVICIO.**
- **LA NO OBSERVANCIA DEL PRESENTE AVISO PUEDE DAR LUGAR A QUE EL PROVEEDOR DE SERVICIOS, EL USUARIO O EL PACIENTE SUFRAN LESIONES PROVOCADAS POR DESCARGAS ELÉCTRICAS, PROBLEMAS MECÁNICOS O PELIGROS DE OTRA NATURALEZA.**

ATENÇÃO

- **ESTE MANUAL DE ASSISTÊNCIA TÉCNICA SÓ SE ENCONTRA DISPONÍVEL EM INGLÊS.**
- **SE QUALQUER OUTRO SERVIÇO DE ASSISTÊNCIA TÉCNICA, QUE NÃO A GEMS, SOLICITAR ESTES MANUAIS NOUTRO IDIOMA, É DA RESPONSABILIDADE DO CLIENTE FORNECER OS SERVIÇOS DE TRADUÇÃO.**
- **NÃO TENTE REPARAR O EQUIPAMENTO SEM TER CONSULTADO E COMPREENDIDO ESTE MANUAL DE ASSISTÊNCIA TÉCNICA.**
- **O NÃO CUMPRIMENTO DESTE AVISO PODE PÔR EM PERIGO A SEGURANÇA DO TÉCNICO, OPERADOR OU PACIENTE DEVIDO A CHOQUES ELÉTRICOS, MECÂNICOS OU OUTROS.**

AVVERTENZA

- **IL PRESENTE MANUALE DI MANUTENZIONE È DISPONIBILE SOLTANTO IN INGLESE.**
- **SE UN ADDETTO ALLA MANUTENZIONE ESTERNO ALLA GEMS RICHIEDE IL MANUALE IN UNA LINGUA DIVERSA, IL CLIENTE È TENUTO A PROVVEDERE DIRETTAMENTE ALLA TRADUZIONE.**
- **SI PROCEDA ALLA MANUTENZIONE DELL'APPARECCHIATURA SOLO DOPO AVER CONSULTATO IL PRESENTE MANUALE ED AVERNE COMPRESO IL CONTENUTO.**
- **NON TENERE CONTO DELLA PRESENTE AVVERTENZA POTREBBE FAR COMPIERE OPERAZIONI DA CUI DERIVINO LESIONI ALL'ADDETTO ALLA MANUTENZIONE, ALL'UTILIZZATORE ED AL PAZIENTE PER FOLGORAZIONE ELETTRICA, PER URTI MECCANICI OD ALTRI RISCHI.**

HOIATUS

- **KÄESOLEV TEENINDUSJUHEND ON SAADAVAL AINULT INGLISE KEELES.**
- **KUI KLIENDITEENINDUSE OSUTAJA NÕUAB JUHENDIT INGLISE KEELEST ERINEVAS KEELES, VASTUTAB KLIENT TÕLKETEENUSE OSUTAMISE EEST.**
- **ÄRGE ÜRITAGE SEADMEID TEENINDADA ENNE EELNEVALT KÄESOLEVA TEENINDUSJUHENDIGA TUTVUMIST JA SELLEST ARU SAAMIST.**
- **KÄESOLEVA HOIATUSE EIRAMINE VÕIB PÕHJUSTADA TEENUSEOSUTAJA, OPERAATORI VÕI PATSIENDI VIGASTAMIST ELEKTRILÖÖGI, MEHAANILISE VÕI MUU OHU TAGAJÄRJEL.**

VAROITUS

- TÄMÄ HUOLTO-OHJE ON SAATAVILLA VAIN ENGLANNIKSI.
- JOS ASIAKKAAN PALVELUNTARJOAJA VAATII MUUTA KUIN ENGLANNINKIELISTÄ MATERIAALIA, TARVITTAVAN KÄÄNNÖKSEN HANKKIMINEN ON ASIAKKAAN VASTUULLA.
- ÄLÄ YRITÄ KORJATA LAITTEISTOA ENNEN KUIN OLET VARMASTI LUKENUT JA YMMÄRTÄNYT TÄMÄN HUOLTO-OHJEEN.
- MIKÄLI TÄTÄ VAROITUSTA EI NOUDATETA, SEURAUKSENA VOI OLLA PALVELUNTARJOAJAN, LAITTEISTON KÄYTTÄJÄN TAI POTILAAN VAHINGOITTUMINEN SÄHKÖISKUN, MEKAANISEN VIAN TAI MUUN VAARATILANTEEN VUOKSI.

ΠΡΟΕΙΔΟΠΟΙΗΣΗ

- ΤΟ ΠΑΡΟΝ ΕΓΧΕΙΡΙΔΙΟ ΣΕΡΒΙΣ ΔΙΑΤΙΘΕΤΑΙ ΣΤΑ ΑΓΓΛΙΚΑ ΜΟΝΟ.
- ΕΑΝ ΤΟ ΑΤΟΜΟ ΠΑΡΟΧΗΣ ΣΕΡΒΙΣ ΕΝΟΣ ΠΕΛΑΤΗ ΑΠΑΙΤΕΙ ΤΟ ΠΑΡΟΝ ΕΓΧΕΙΡΙΔΙΟ ΣΕ ΓΛΩΣΣΑ ΕΚΤΟΣ ΤΩΝ ΑΓΓΛΙΚΩΝ, ΑΠΟΤΕΛΕΙ ΕΥΘΥΝΗ ΤΟΥ ΠΕΛΑΤΗ ΝΑ ΠΑΡΕΧΕΙ ΥΠΗΡΕΣΙΕΣ ΜΕΤΑΦΡΑΣΗΣ.
- ΜΗΝ ΕΠΙΧΕΙΡΗΣΕΤΕ ΤΗΝ ΕΚΤΕΛΕΣΗ ΕΡΓΑΣΙΩΝ ΣΕΡΒΙΣ ΣΤΟΝ ΕΞΟΠΛΙΣΜΟ ΕΚΤΟΣ ΕΑΝ ΕΧΕΤΕ ΣΥΜΒΟΥΛΕΥΤΕΙ ΚΑΙ ΕΧΕΤΕ ΚΑΤΑΝΟΗΣΕΙ ΤΟ ΠΑΡΟΝ ΕΓΧΕΙΡΙΔΙΟ ΣΕΡΒΙΣ.
- ΕΑΝ ΔΕ ΛΑΒΕΤΕ ΥΠΟΨΗ ΤΗΝ ΠΡΟΕΙΔΟΠΟΙΗΣΗ ΑΥΤΗ, ΕΝΔΕΧΕΤΑΙ ΝΑ ΠΡΟΚΛΗΘΕΙ ΤΡΑΥΜΑΤΙΣΜΟΣ ΣΤΟ ΑΤΟΜΟ ΠΑΡΟΧΗΣ ΣΕΡΒΙΣ, ΣΤΟ ΧΕΙΡΙΣΤΗ Ή ΣΤΟΝ ΑΣΘΕΝΗ ΑΠΟ ΗΛΕΚΤΡΟΠΛΗΞΙΑ, ΜΗΧΑΝΙΚΟΥΣ Ή ΑΛΛΟΥΣ ΚΙΝΔΥΝΟΥΣ.

FIGYELMEZTETÉS

- EZEN KARBANTARTÁSI KÉZIKÖNYV KIZÁRÓLAG ANGOL NYELVEN ÉRHETŐ EL.
- HA A VEVŐ SZOLGÁLTATÓJA ANGOLTÓL ELTÉRŐ NYELVRE TART IGÉNYT, AKKOR A VEVŐ FELELŐSSÉGE A FORDÍTÁS ELKÉSZÍTTETÉSE.
- NE PRÓBÁLJA ELKEZDENI HASZNÁLNI A BERENDEZÉST, AMÍG A KARBANTARTÁSI KÉZIKÖNYVBEN LEÍRTAKAT NEM ÉRTELMEZTÉK.
- EZEN FIGYELMEZTETÉS FIGYELMEN KÍVÜL HAGYÁSA A SZOLGÁLTATÓ, MŰKÖDTETŐ VAGY A BETEG ÁRAMÜTÉS, MECHANIKAI VAGY EGYÉB VESZÉLYHELYZET MIATTI SÉRÜLÉSÉT EREDMÉNYEZHETI.

VIÐVÖRUN

- ÞESSI ÞJÓNUSTUHANDBÓK ER EINGÖNGU FÁANLEG Á ENSKU.
- EF ÞJÓNUSTUAÐILI VIÐSKIPTAMANNS ÞARFNAST ANNARS TUNGUMÁLS EN ENSKU, ER ÞAÐ Á ÁBYRGÐ VIÐSKIPTAMANNS AÐ ÚTVEGA ÞÝÐINGU.
- REYNIÐ EKKI AÐ ÞJÓNUSTA TÆKIÐ NEMA EFTIR AÐ HAFA SKOÐAÐ OG SKILIÐ ÞESSA ÞJÓNUSTUHANDBÓK.
- EF EKKI ER FARIÐ AÐ ÞESSARI VIÐVÖRUN GETUR ÞAÐ VALDIÐ MEIÐSLUM ÞJÓNUSTUVEITANDA, STJÓRNANDA EÐA SJÚKLINGS VEGNA RAFLOSTS, VÉLRÆNNAR EÐA ANNARRAR HÆTTU.

VÝSTRAHA

- **TENTO SERVISNÍ NÁVOD EXISTUJE POUZE V ANGLICKÉM JAZYCE.**
- **V PŘÍPADĚ, ŽE POSKYTOVATEL SLUŽEB ZÁKAZNÍKŮM POTŘEBUJE NÁVOD V JINÉM JAZYCE, JE ZAJIŠTĚNÍ PŘEKLADU DO ODPOVÍDAJÍCÍHO JAZYKA ÚKOLEM ZÁKAZNÍKA.**
- **NEPROVÁDĚJTE ÚDRŽBU TOHOTO ZAŘÍZENÍ, ANIŽ BYSTE SI PŘEČETLI TENTO SERVISNÍ NÁVOD A POCHOPILI JEHO OBSAH.**
- **V PŘÍPADĚ NEDODRŽOVÁNÍ TÉTO VÝSTRAHY MŮŽE DOJÍT ÚRAZU ELEKTRICKÁM PROUDEM PRACOVNÍKA POSKYTOVATELE SLUŽEB, OBSLUŽNÉHO PERSONÁLU NEBO PACIENTŮ VLIVEM ELEKTRICKÉHOP PROUDU, RESPEKTIVE VLIVEM K RIZIKU MECHANICKÉHO POŠKOZENÍ NEBO JINÉMU RIZIKU.**

ADVARSEL

- **DENNE SERVICEMANUAL FINDES KUN PÅ ENGELSK.**
- **HVIS EN KUNDES TEKNIKER HAR BRUG FOR ET ANDET SPROG END ENGELSK, ER DET KUNDENS ANSVAR AT SØRGE FOR OVERSÆTTELSE.**
- **FORSØG IKKE AT SERVICERE UDSTYRET MEDMINDRE DENNE SERVICEMANUAL ER BLEVET LÆST OG FORSTÅET.**
- **MANGLENDE OVERHOLDELSE AF DENNE ADVARSEL KAN MEDFØRE SKADE PÅ GRUND AF ELEKTRISK, MEKANISK ELLER ANDEN FARE FOR TEKNIKEREN, OPERATØREN ELLER PATIENTEN.**

WAARSCHUWING

- **DEZE ONDERHOUDSHANDLEIDING IS ENKEL IN HET ENGELS VERKRIJGBAAR.**
- **ALS HET ONDERHOUDSPERSONEEL EEN ANDERE TAAL VEREIST, DAN IS DE KLANT VERANTWOORDELIJK VOOR DE VERTALING ERVAN.**
- **PROBEER DE APPARATUUR NIET TE ONDERHOUDEN VOORDAT DEZE ONDERHOUDSHANDLEIDING WERD GERAADPLEEGD EN BEGREPEN IS.**
- **INDIEN DEZE WAARSCHUWING NIET WORDT OPGEVOLGD, ZOU HET ONDERHOUDSPERSONEEL, DE OPERATOR OF EEN PATIËNT GEWOND KUNNEN RAKEN ALS GEVOLG VAN EEN ELEKTRISCHE SCHOK, MECHANISCHE OF ANDERE GEVAREN.**

BRĪDINĀJUMS

- **ŠĪ APKALPES ROKASGRĀMATA IR PIEEJAMA TIKAI ANGĻU VALODĀ.**
- **JA KLIENTA APKALPES SNIEDZĒJAM NEPIECIEŠAMA INFORMĀCIJA CITĀ VALODĀ, NEVIS ANGĻU, KLIENTA PIENĀKUMS IR NODROŠINĀT TULKOŠANU.**
- **NEVEICIET APRĪKOJUMA APKALPI BEZ APKALPES ROKASGRĀMATAS IZLASĪŠANAS UN SAPRAŠANAS.**
- **ŠĪ BRĪDINĀJUMA NEIEVĒROŠANA VAR RADĪT ELEKTRISKĀS STRĀVAS TRIECIENA, MEHĀNISKU VAI CITU RISKU IZRAISĪTU TRAUMU APKALPES SNIEDZĒJAM, OPERATORAM VAI PACIENTAM.**

ĮSPĖJIMAS

- ŠIS EKSPLOATAVIMO VADOVAS YRA IŠLEISTAS TIK ANGLŲ KALBA.
- JEI KLIENTO PASLAUGŲ TEIKĖJUI REIKIA VADOVO KITA KALBA – NE ANGLŲ, VERTIMU PASIRŪPINTI TURI KLIENTAS.
- NEMĖGINKITE ATLIKTI ĮRANGOS TECHNINĖS PRIEŽIŪROS DARBŲ, NEBENT VADOVAUTUMĖTĖS ŠIUO EKSPLOATAVIMO VADOVU IR JĮ SUPRASTUMĖTE
- NEPAISANT ŠIO PERSPĖJIMO, PASLAUGŲ TEIKĖJAS, OPERATORIUS AR PACIENTAS GALI BŪTI SUŽEISTAS DĖL ELEKTROS SMŪGIO, MECHANINIŲ AR KITŲ PAVOJŲ.

ADVARSEL

- DENNE SERVICEHÅNDBOKEN FINNES BARE PÅ ENGELSK.
- HVIS KUNDENS SERVICELEVERANDØR TRENGER ET ANNET SPRÅK, ER DET KUNDENS ANSVAR Å SØRGE FOR OVERSETTELSE.
- IKKE FORSØK Å REPARERE UTSTYRET UTEN AT DENNE SERVICEHÅNDBOKEN ER LEST OG FORSTÅTT.
- MANGLENDE HENSYN TIL DENNE ADVARSELEN KAN FØRE TIL AT SERVICELEVERANDØREN, OPERATØREN ELLER PASIENTEN SKADES PÅ GRUNN AV ELEKTRISK STØT, MEKANISKE ELLER ANDRE FARER.

OSTRZEŻENIE

- NINIEJSZY PODRĘCZNIK SERWISOWY DOSTĘPNY JEST JEDYNIE W JĘZYKU ANGIELSKIM.
- JEŚLI FIRMA ŚWIADCZĄCA KLIENTOWI USŁUGI SERWISOWE WYMAGA UDOSTĘPNIENIA PODRĘCZNIKA W JĘZYKU INNYM NIŻ ANGIELSKI, OBOWIĄZEK ZAPEWNIENIA STOSOWNEGO TŁUMACZENIA SPOCZYWA NA KLIENCIE.
- NIE PRÓBOWAĆ SERWISOWAĆ NINIEJSZEGO SPRZĘTU BEZ UPRZEDNIEGO ZAPOZNANIA SIĘ Z PODRĘCZNIKIEM SERWISOWYM.
- NIEZASTOSOWANIE SIĘ DO TEGO OSTRZEŻENIA MOżE GROZIĆ OBRAŻENIAMI CIAłA SERWISANTA, OPERATORA LUB PACJENTA W WYNIKU PORAŻENIA PRĄDEM, URAZU MECHANICZNEGO LUB INNEGO RODZAJU ZAGROŻEŃ.

ATENȚIE

- ACEST MANUAL DE SERVICE ESTE DISPONIBIL NUMAI ÎN LIMBA ENGLEZĂ.
- DACĂ UN FURNIZOR DE SERVICII PENTRU CLIENȚI NECESITĂ O ALTĂ LIMBĂ DECÂT CEA ENGLEZĂ, ESTE DE DATORIA CLIENTULUI SĂ FURNIZEZE O TRADUCERE.
- NU ÎNCERCAȚI SĂ REPARAȚI ECHIPAMENTUL DECÂT ULTERIOR CONSULTĂRII ŞI ÎNȚELEGERII ACESTUI MANUAL DE SERVICE.
- IGNORAREA ACESTUI AVERTISMENT AR PUTEA DUCE LA RĂNIREA DEPANATORULUI, OPERATORULUI SAU PACIENTULUI ÎN URMA PERICOLELOR DE ELECTROCUTARE, MECANICE SAU DE ALTĂ NATURĂ.

ОСТОРОЖНО!

- ДАННОЕ РУКОВОДСТВО ПО ОБСЛУЖИВАНИЮ ПРЕДОСТАВЛЯЕТСЯ ТОЛЬКО НА АНГЛИЙСКОМ ЯЗЫКЕ.
- ЕСЛИ СЕРВИСНОМУ ПЕРСОНАЛУ КЛИЕНТА НЕОБХОДИМО РУКОВОДСТВО НЕ НА АНГЛИЙСКОМ ЯЗЫКЕ, КЛИЕНТУ СЛЕДУЕТ САМОСТОЯТЕЛЬНО ОБЕСПЕЧИТЬ ПЕРЕВОД.
- ПЕРЕД ОБСЛУЖИВАНИЕМ ОБОРУДОВАНИЯ ОБЯЗАТЕЛЬНО ОБРАТИТЕСЬ К ДАННОМУ РУКОВОДСТВУ И ПОЙМИТЕ ИЗЛОЖЕННЫЕ В НЕМ СВЕДЕНИЯ.
- НЕСОБЛЮДЕНИЕ УКАЗАННЫХ ТРЕБОВАНИЙ МОЖЕТ ПРИВЕСТИ К ТОМУ, ЧТО СПЕЦИАЛИСТ ПО ТЕХОБСЛУЖИВАНИЮ, ОПЕРАТОР ИЛИ ПАЦИЕНТ ПОЛУЧАТ УДАР ЗЛЕКТРИЧЕСКИМ ТОКОМ, МЕХАНИЧЕСКУЮ ТРАВМУ ИЛИ ДРУГОЕ ПОВРЕЖДЕНИЕ.

UPOZORNENIE

- TÁTO SERVISNÁ PRÍRUČKA JE K DISPOZÍCII LEN V ANGLIČTINE.
- AK ZÁKAZNÍKOV POSKYTOVATEĽ SLUŽIEB VYŽADUJE INÝ JAZYK AKO ANGLIČTINU, POSKYTNUTIE PREKLADATEĽSKÝCH SLUŽIEB JE ZODPOVEDNOSŤOU ZÁKAZNÍKA.
- NEPOKÚŠAJTE SA VYKONÁVAŤ SERVIS ZARIADENIA SKÔR, AKO SI NEPREČÍTATE SERVISNÚ PRÍRUČKU A NEPOROZUMIETE JEJ.
- ZANEDBANIE TOHTO UPOZORNENIA MÔŽE VYÚSTIŤ DO ZRANENIA POSKYTOVATEĽA SLUŽIEB, OBSLUHUJÚCEJ OSOBY ALEBO PACIENTA ELEKTRICKÝM PRÚDOM, PRÍPADNE DO MECHANICKÉHO ALEBO INÉHO NEBEZPEČENSTVA.

VARNING

- DEN HÄR SERVICEHANDBOKEN FINNS BARA TILLGÄNGLIG PÅ ENGELSKA.
- OM EN KUNDS SERVICETEKNIKER HAR BEHOV AV ETT ANNAT SPRÅK ÄN ENGELSKA ANSVARAR KUNDEN FÖR ATT TILLHANDAHÅLLA ÖVERSÄTTNINGSTJÄNSTER.
- FÖRSÖK INTE UTFÖRA SERVICE PÅ UTRUSTNINGEN OM DU INTE HAR LÄST OCH FÖRSTÅR DEN HÄR SERVICEHANDBOKEN.
- OM DU INTE TAR HÄNSYN TILL DEN HÄR VARNINGEN KAN DET RESULTERA I SKADOR PÅ SERVICETEKNIKERN, OPERATÖREN ELLER PATIENTEN TILL FÖLJD AV ELEKTRISKA STÖTAR, MEKANISKA FAROR ELLER ANDRA FAROR.

DİKKAT

- BU SERVİS KILAVUZU YALNIZCA İNGİLİZCE OLARAK SAĞLANMIŞTIR.
- EĞER MÜŞTERİ TEKNİSYENİ KILAVUZUN İNGİLİZCE DIŞINDAKİ BİR DİLDE OLMASINI İSTERSE, KILAVUZU TERCÜME ETTİRMEK MÜŞTERİNİN SORUMLULUĞUNDADIR.
- SERVİS KILAVUZUNU OKUYUP ANLAMADAN EKİPMANLARA MÜDAHALE ETMEYİNİZ.
- BU UYARININ GÖZ ARDI EDİLMESİ, ELEKTRİK ÇARPMASI YA DA MEKANİK VEYA DİĞER TÜRDEN KAZALAR SONUCUNDA TEKNİSYENİN, OPERATÖRÜN YA DA HASTANIN YARALANMASINA YOL AÇABİLİR.

このサービスマニュアルには英語版しかありません。
ＧＥＭＳ以外でサービスを担当される業者が英語以外の言語を要求される場合、翻訳作業はその業者の責任で行うものとさせていただきます。

警告

このサービスマニュアルを熟読し理解せずに、装置のサービスを行わないで下さい。
この警告に従わない場合、サービスを担当される方、操作員あるいは患者さんが、感電や機械的又はその他の危険により負傷する可能性があります。

本维修手册仅存有英文本。
非 GEMS 公司的维修员要求非英文本的维修手册时，客户需自行负责翻译。

注意:

未详细阅读和完全了解本手册之前，不得进行维修。忽略本注意事项会对维修员，操作员或病人造成触电，机械伤害或其他伤害。

경고

- 본 서비스 지침는 영어로 만 이용할 수 있습니다.
- 고객 서비스 제공가 영어 이외 언어를 요할 경우, 번역 서비스를 제공는 것은 고객 책임대.
- 본 서비스 지침를 참조하고 이해지 않는 한은 해당 장비 수리를 시도지 마십오.
- 이 경우에 유의지 않으면 전기 쇼크, 기계의 혹은 다른 위험부터 서비스 제공, 운행 혹은 환자에게 위해 가할 수 있습니다.

DAMAGE IN TRANSPORTATION

All packages should be closely examined at time of delivery. If damage is apparent write “Damage In Shipment” on ALL copies of the freight or express bill BEFORE delivery is accepted or “signed for” by a GE representative or hospital receiving agent. Whether noted or concealed, damage MUST be reported to the carrier immediately upon discovery, or in any event, within 14 days after receipt, and the contents and containers held for inspection by the carrier. A transportation company will not pay a claim for damage if an inspection is not requested within this 14 day period.

CERTIFIED ELECTRICAL CONTRACTOR STATEMENT - FOR USA ONLY

All electrical Installations that are preliminary to positioning of the equipment at the site prepared for the equipment shall be performed by licensed electrical contractors. Other connections between pieces of electrical equipment, calibrations and testing shall be performed by qualified GE Healthcare personnel. In performing all electrical work on these products, GE will use its own specially trained field engineers. All of GE’s electrical work on these products will comply with the requirements of the applicable electrical codes.

The purchaser of GE equipment shall only utilize qualified personnel (i.e., GE’s field engineers, personnel of third-party service companies with equivalent training, or licensed electricians) to perform electrical servicing on the equipment.

OMISSIONS & ERRORS

If there are any omissions, errors or suggestions for improving this documentation, please contact the GE Healthcare Global Documentation Group with specific information listing the system type, manual title, part number, revision number, page number and suggestion details. Mail the information to: Service Documentation, 9900 Innovation Drive (RP-2123), Wauwatosa, WI 53226, USA.

GE Healthcare employees should use the iTrak System to report all documentation errors or omissions.

LEGAL NOTES

TRADEMARKS

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Revision History

Revision	Date	Reason for change
1	2006-07-25	Initial Version for LOGIQworks 3.0
2	2006-08-07	Released Version for LOGIQworks 3.0
3	2007-01-09	Added Dell Precision 390 and description about TripleMonitor
4	2007-03-21	Released Version for LOGIQworks 3.0.4
5	2007-09-04	Version for LOGIQworks 3.0.5

List of Effected Pages

Pages	Revision	Pages	Revision	Pages	Revision
Title	N/A	Chapter 3 - Installation on page 3-1 to 3-207	5	Chapter 9 - Renewal Parts on page 9-1 to 9-10	5
Important Precautions i - vi	5	Chapter 4 - Functional Checks on page 4-1 to 4-32	5	Chapter 10 - Quality Assurance on page 10-1 to 10-16	5
Revision History vii - viii	5	Chapter 5 - Components and Functions (Theory) on page 5-1 to 5-42	5	Index I to II	5
Table of Contents ix to xx	5	Chapter 6 - Service Adjustments on page 6-1 to 6-6	5	Back Cover	N/A
Chapter 1 - Introduction on page 1-1 to 1-20	5	Chapter 7 - Diagnostics/ Troubleshooting on page 7-1 to 7-7	5		
Chapter 2 - Pre-Installation on page 2-1 to 2-20	5	Chapter 8 - Replacement Procedures on page 8-1 to 8-28	5		

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Chapter 1
Introduction

Section 1-1
Overview

1-1-1 Purpose of Chapter 1

This chapter describes important issues related to safely servicing the LOGIQworks.
The service provider must read and understand all the information presented in this manual before installing or servicing a unit.

Table 1-1 Contents in Chapter 1

1-1-2 Purpose of Service Manual

This Service Manual provides installation and service information for the LOGIQworks and contains the following chapters:

1.) **Chapter 1 - Introduction:** Contains a content summary and warnings.
2.) **Chapter 2 - Pre-Installation:** Contains any pre-installation requirements for the LOGIQworks.
3.) **Chapter 3 - Installation:** Contains the LOGIQworks installation procedure with installation checklist.
4.) **Chapter 4 - Functional Checks:** Contains functional checks that must be performed as part of the installation, or as required during servicing and periodic maintenance.
5.) **Chapter 5 - Components and Functions (Theory):** Contains block diagrams and functional explanations of the LOGIQworks electronics.
6.) **Chapter 6 - Service Adjustments:** Contains instructions on how to make available adjustments to the LOGIQworks.
7.) **Chapter 7 - Diagnostics/Troubleshooting:** Provides procedures for running diagnostic or related routines for the LOGIQworks.
8.) **Chapter 8 - Replacement Procedures:** Provides disassembly procedures and reassembly procedures for all changeable Field Replaceable Units (FRU).
9.) **Chapter 9 - Renewal Parts:** Contains a complete list of replacement parts for the LOGIQworks.
10.) **Chapter 10 - Quality Assurance:** Provides periodic maintenance procedures for the LOGIQworks.

1-1-3 Typical Users of the Basic Service Manual

- Service Personnel (installation, maintenance, etc.).
- Hospital's Service Personnel. Third party Service institutions.
- Architects (Some parts of the Pre-Installation Section).
- GE Service Personnel (Installation, Maintenance).

1-1-4 LOGIQworks Models covered by this Manual

Table 1-2 LOGIQworks Standard Hardware of System based on Dell Precision 340 (delivered from April 2003 to April 2004)

	PART	PC	CRT1	CRT2	LCD1	LCD2	Modem	
	BTU/h	860	495	495	195	195	164	
	Power (W)	250	135	135	57	57	48	Total BTU/h
LOGIQworks Models	H49021LA	x	x				x	1520
	H49021LB	x	x	x			x	2015
	H49021LC	x			x		x	1220
	H49021LD	x			x	x	x	1415

Table 1-3 LOGIQworks Standard Hardware of System based on Dell Precision 360 (delivered since May 2004 until December 2004)

	PART	PC	LCD1	LCD2	Modem	
	BTU/h	860	195	195	164	
	Power (W)	250	57	57	48	Total BTU/h
LOGIQworks Models	H49021AA	x	x		x	1520
	H49021AB	x	x	x	x	2015
	H49021AC	x	x		x	1220
	H49021AD	x	x		x	1415

1-1-4 LOGIQworks Models covered by this Manual (cont'd)

Table 1-4 LOGIQworks Standard Hardware of System based on Dell Precision 370 (delivered from December 2004 until November 2005)

	PART	PC	LCD1	LCD2	Modem	
	BTU/h	860	195	195	164	
	Power (W)	250	57	57	48	Total BTU/h
LOGIQworks Models	H49021AA	x	x		x	1520
	H49021AB	x	x	x	x	2015
	H49021AC	x	x		x	1220
	H49021AD	x	x		x	1415

Table 1-5 LOGIQworks Standard Hardware of System based on Dell Precision 380 (delivered from November 2005) and on Dell Precision 390 (delivered from December 2006)

	PART	PC	LCD1	LCD2	Modem	
	BTU/h	1280	195	195	164	
	Power (W)	375	57	57	48	Total BTU/h
LOGIQworks Models	H49021AK	x	x		x	1639
	H49021AL	x	x	x	x	1834
	H49021AM	x	x		x	1639
	H49021AN	x	x		x	1639

1-1-4-1 How to Turn the LOGIQworks workstation on/off

See chapter 3, Section 3-4-4 on page 3-60.

1-1-4-2 How to Check for Hardware/Software version, Options

See chapter 3, Section 3-5-13 on page 3-203.

1-1-5 Purpose of Operator Manual(s)

The Operator Manual(s), Part Numbers available in chapter 9, should be fully read and understood before operating the LOGIQworks workstation and also kept near the unit for quick reference.

Section 1-2
Important Conventions

1-2-1 Conventions Used in Book

Model Designations

This manual covers the LOGIQworks PC.

(See Chapter 1 - LOGIQworks Models covered by this Manual on page 1-2.)

Icons

Pictures, or icons, are used wherever they reinforce the printed message. The icons, labels and conventions used on the product and in the service information are described in this chapter.

Safety Precaution Messages

Various levels of safety precaution messages may be found on the equipment and in the service information. The different levels of concern are identified by a flag word that precedes the precautionary message. Known or potential hazards are labeled in one of following ways:

WARNING Warnings that must take heed of to protect the patients / users against the danger of injury.

CAUTION Warnings that must be heeded to avoid causing damage to the equipment.

NOTE General or additional information relating to specific topics.

1-2-2 Standard Hazard Icons

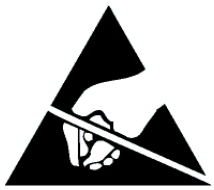
Important information will always be preceded by the exclamation point contained within a triangle, as seen throughout this chapter. In addition to text, several different graphical icons (symbols) may be used to make you aware of specific types of hazards that could cause harm.

Table 1-6 Standard Hazard Icons

ELECTRICAL	MECHANICAL	RADIATION
		
LASER	**HEAT**	**PINCH**
		

Other hazard icons make you aware of specific procedures that should be followed.

Table 1-7 Standard Icons Indicating a Special Procedure be Used

AVOID STATIC ELECTRICITY	TAG AND LOCK OUT	WEAR EYE PROTECTION
		

1-2-3 Product Icons

The following table describes the purpose and location of safety labels and other important information provided on the equipment.

Table 1-8 Product Icons

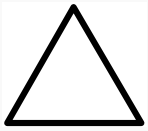
LABEL/SYMBOL	PURPOSE/MEANING	LOCATION
Identification and Rating Plate	Manufacturer's name and address Model and serial numbers Electrical ratings	On top of PC
Device Listing/Certification Labels	Laboratory logo or labels denoting conformance with industry safety standards such as UL or IEC.	Rear side of the unit Rear side of the monitor
Type/Class Label	Used to indicate the degree of safety or protection.	
"CAUTION This unit weighs... Special care must be used to avoid..." 	This precaution is intended to prevent injury that may result if one person attempt to move the unit considerable distances or on an incline due to the weight of the unit.	Service Manual
	"CAUTION" The equilateral triangle is usually used in combination with other symbols to advise or warn the user.	Various
	ATTENTION - Consult accompanying documents " is intended to alert the user to refer to the operator manual or other instructions when complete information cannot be provided on the label.	Various
	"CAUTION - Dangerous voltage" (the lightning flash with arrowhead in equilateral triangle) is used to indicate electric shock hazards.	Various
	"Mains OFF" Indicates the power off position of the mains power switch.	ON/OFF switches

Table 1-8 Product Icons (Continued)

LABEL/SYMBOL	PURPOSE/MEANING	LOCATION
	"OFF/Standby" Indicates the power off/ standby position of the power switch. **CAUTION** **This Power Switch DOES NOT ISOLATE Mains Supply**	ON/OFF switches
	"Mains ON" Indicates the power on position of the mains power switch.	
	"Protective Earth" Indicates the protective earth (grounding) terminal.	
	"Equipotentiality" Indicates the terminal to be used for connecting equipotential conductors when interconnecting (grounding) with other equipment.	
	“Nonionizing Radiation” indicates that the system applies RF energy.	Rear of printer near power inlet

Section 1-3
Safety Considerations

WARNING For hardware related risks please pay attention to the safety instructions of the DELL hardware manuals (e.g. System Information Guide).

1-3-1 Safety Hints

If hardware from different manufacturers as ViewPoint is used Safety Notes are in their responsibility. So also see in the relevant manuals.

1-3-1 Safety Hints (cont'd)

WARNING **Danger of Electrical Shock!**

Danger of Electrical Shock!

A connection between the patient and a personal computer can result in risks for the patient from electric current. Consider, therefore, these safety references:

– Use only CE marked electrical equipment!

– Install a galvanic isolator to insulate the connection between the personal computer and all connected medical equipment (e.g. fibre optic cable or certified video isolator)!

– Set up the personal computer outside the patient's vicinity (1.5 m/4.9 ft.)!

Use only CE marked galvanic isolators or medical devices appropriate under EN/IEC 60601-1 and EN/IEC 60601-1-1!

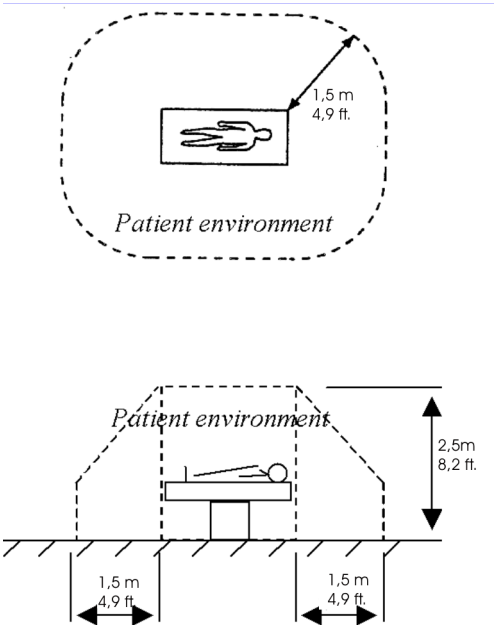


Figure 1-1 Sketch of the patient's environment

WARNING **Danger of Electromagnetic Incompatibility!**

Devices that are not CE marked can create an electromagnetic field which could impair the operation of other devices.

To prevent this, check if the device is CE marked or FCC-marked.

Use only CE marked devices and medical devices appropriate under EN/IEC 60601-1-2.

1-3-1 Safety Hints (cont'd)

WARNING

Danger of False Diagnosis!
Danger of Data Loss!

Personal computers can be affected by electromagnetic fields from other devices.

Do not place devices which could cause electromagnetic interference near the personal computer!

WARNING

Danger of False Diagnosis!

An incorrect monitor or incorrect monitor configuration can lead to false diagnosis.

Adjust the monitor to display the images in adequate quality according to the manufacturer's instructions for use. If in doubt, please contact your service representative.

WARNING

Danger of Data Loss!

System connected to the inter-/intranet could be infected by a computer virus. This infection can result in a loss of data or falsified data or an unoperable system.

The user has to ensure that the LOGIQworks system is protected from viruses, e.g. by using antivirus programs, firewalls and regular updates for antivirus programs, firewalls and the operation system.

WARNING

Danger of Data Loss!

Activation of the function for automatic deletion of patient studies might cause data loss.

To avoid this back up your data frequently.

CAUTION

Danger of Power Failure!

We recommend to install an UPS (Uninterruptible Power Supply) if frequent power failure occurs.

CAUTION

Danger of Inoperable System!

LOGIQworks should be installed by a GE service technician to avoid unoperable system.

1-3-2 Label Locations of System based on Dell Precision 340

Sony Labels only. Guarantee agreement

Figure 1-2 Labeling

1.) CE-Label
2.) VDE-Label
3.) UL-Label
4.) Identification plate
5.) Homologation label (for Japan only)

1-3-2 Label Locations of System based on Dell Precision 340 (cont'd)

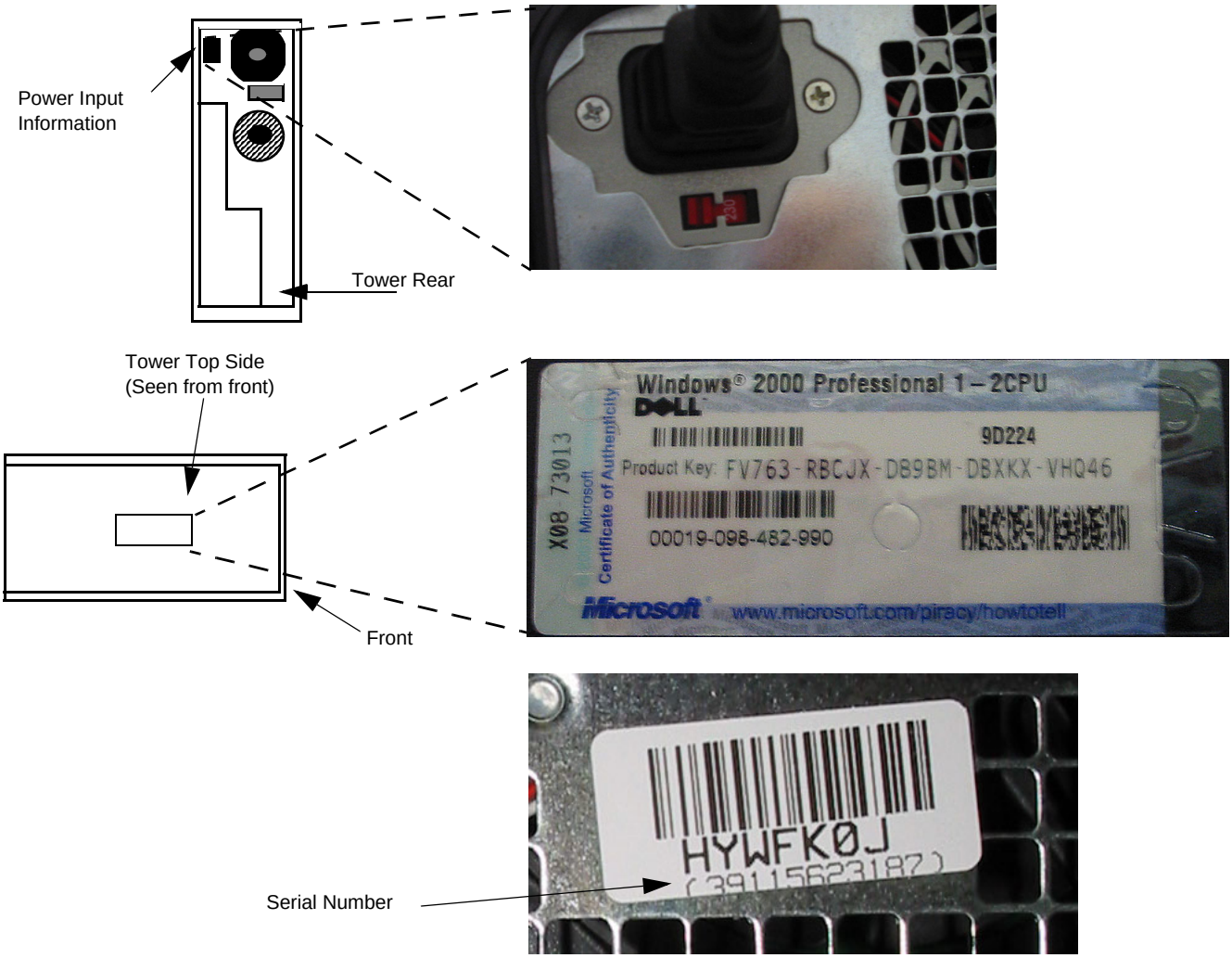


Figure 1-3 Computer Tower Labelling

1-3-2 Label Locations of System based on Dell Precision 340 (cont'd)

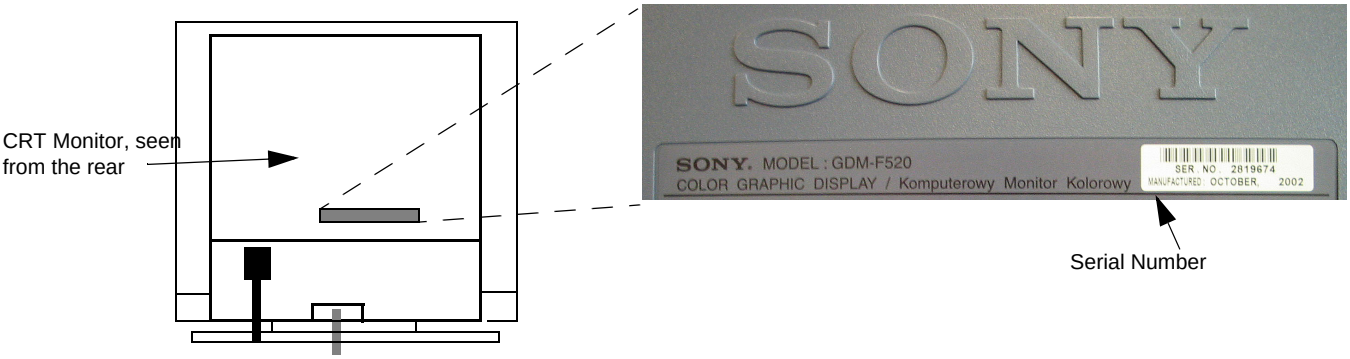


Figure 1-4 CRT Monitor Labels

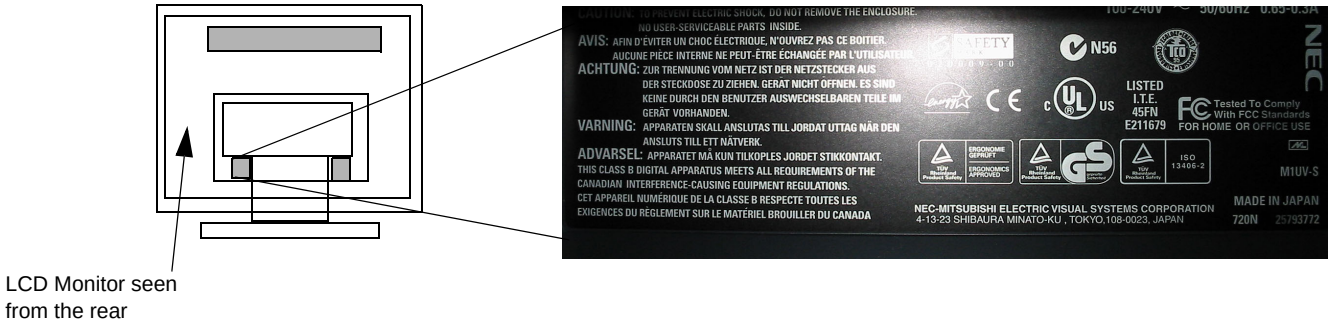


Figure 1-5 LCD NEC 1880 Monitor Labels

1-3-2 Label Locations of System based on Dell Precision 340 (cont'd)

Figure 1-6 Recovery CD Label with Rating Plate Label

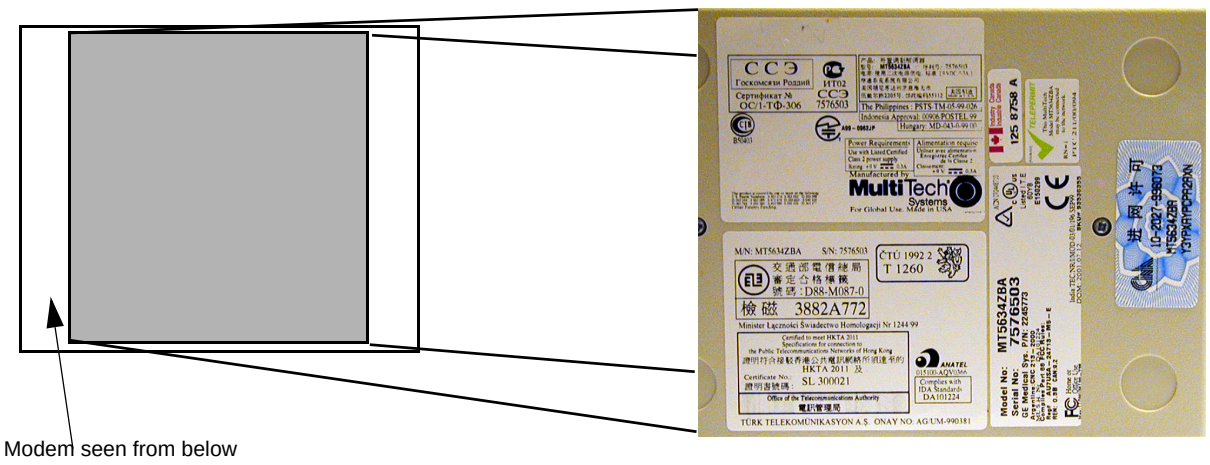


Figure 1-7 Modem Labels

1-3-3 Label Locations of System based on Dell Precision 360 and Dell Precision 370

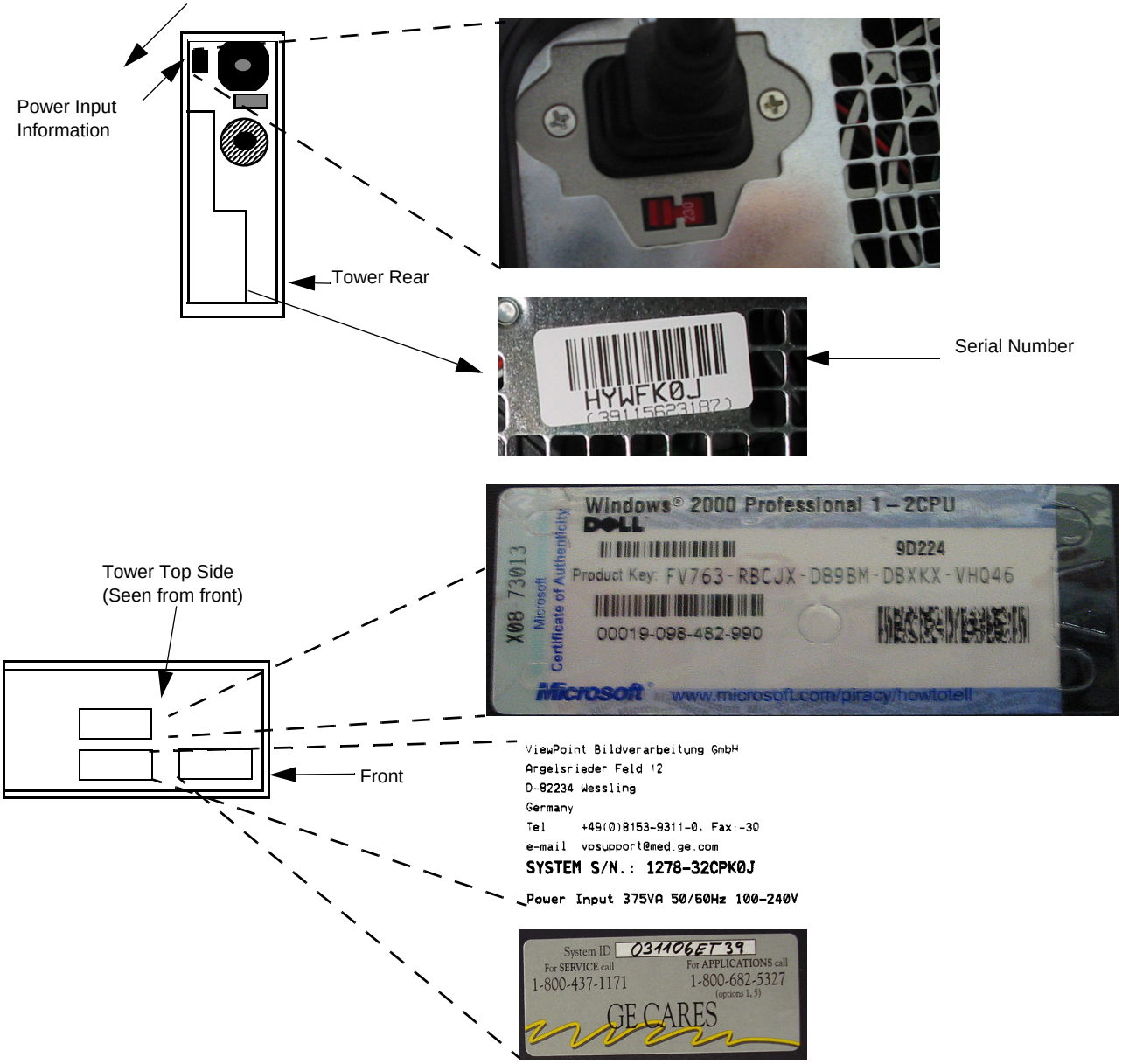


Figure 1-8 Computer Tower Labeling

1-3-3 Label Locations of System based on Dell Precision 360 and Dell Precision 370 (cont'd)

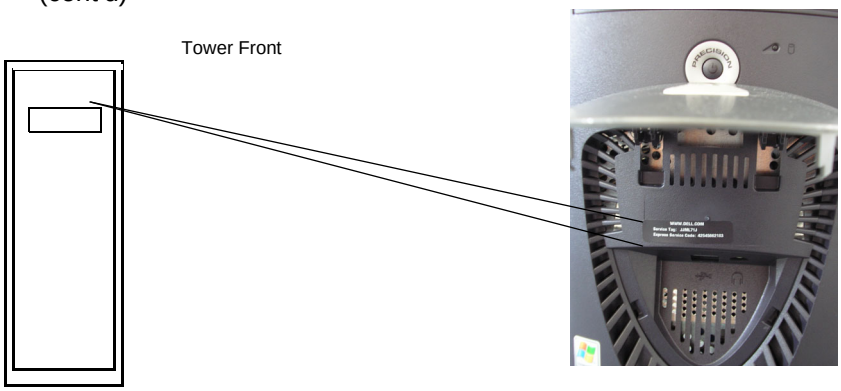


Figure 1-9 Additional Computer Labeling for Dell Precision 370 only

1-3-3 Label Locations of System based on Dell Precision 360 and Dell Precision 370 (cont'd)

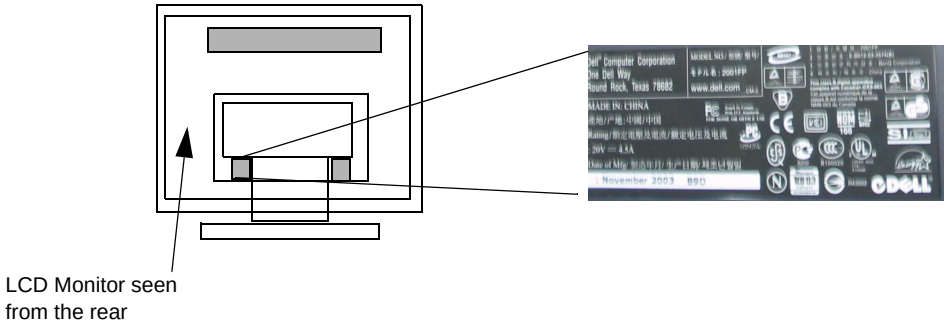


Figure 1-10 LCD DELL 2001 Monitor Labels

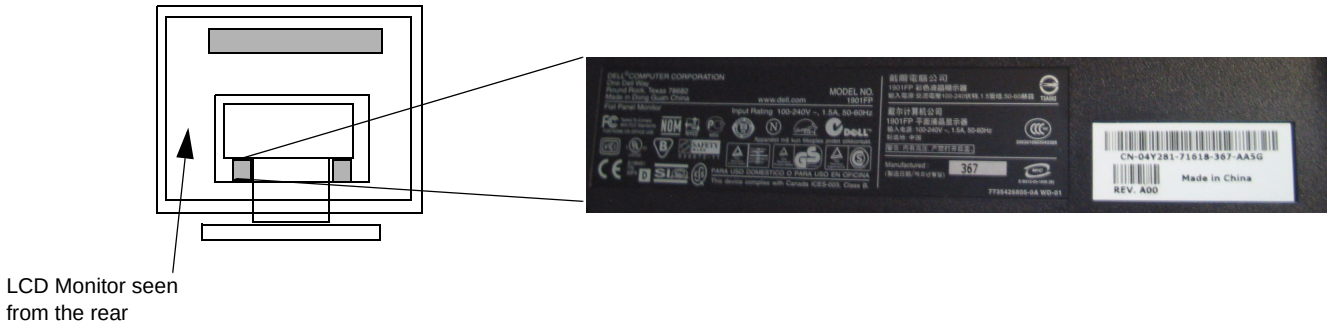
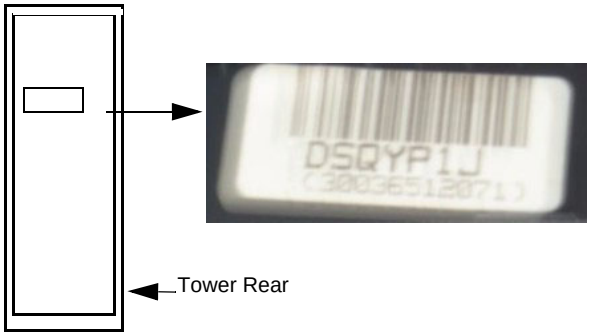
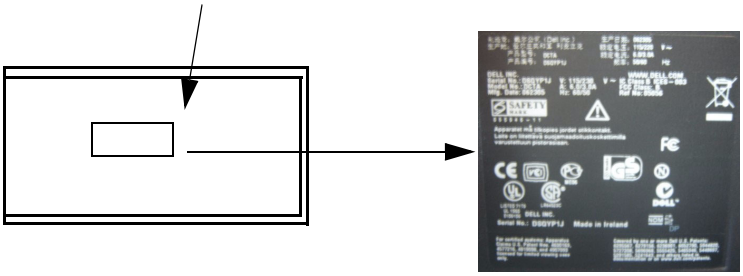


Figure 1-11 LCD DELL 1901 Monitor Labels

1-3-4 Label Locations of System based on Dell Precision 380 and Dell Precision 390



Tower Bottom Side



Tower Top Side

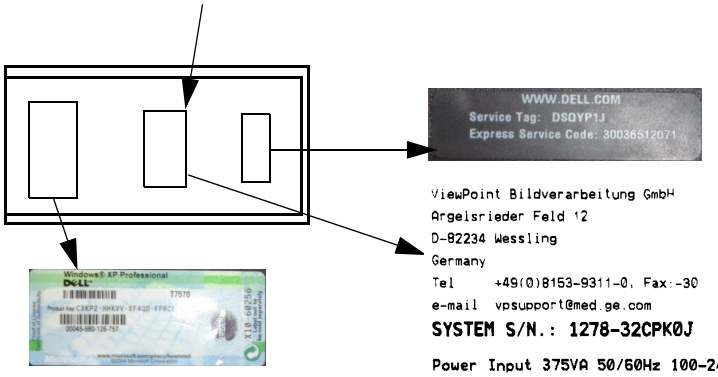


Figure 1-12 Computer Tower Labeling

Figure 1-13

1-3-5 Label Locations

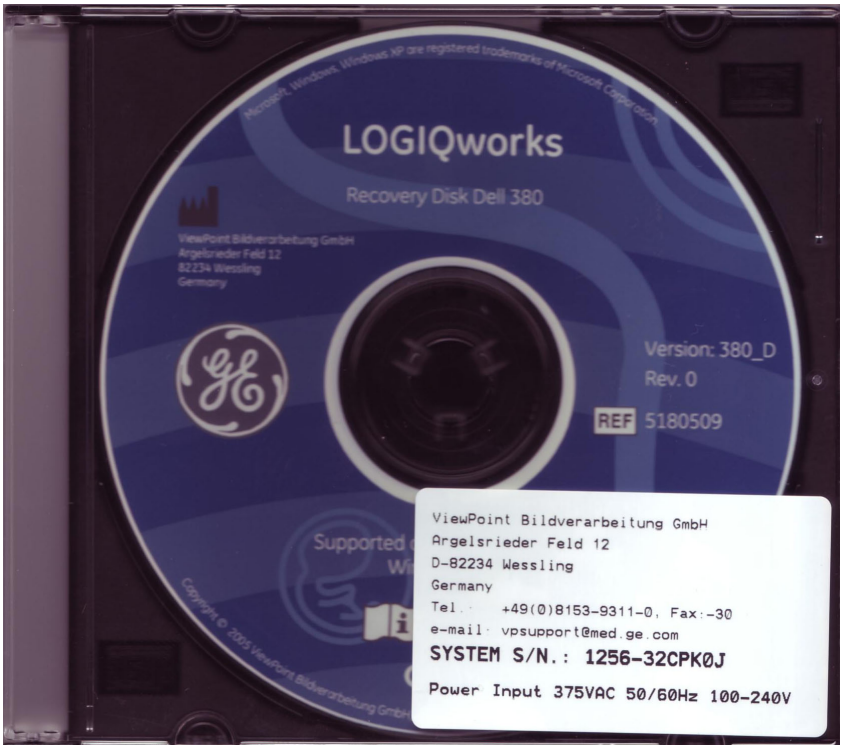


Figure 1-14 Recovery CD Label with Rating Plate Label

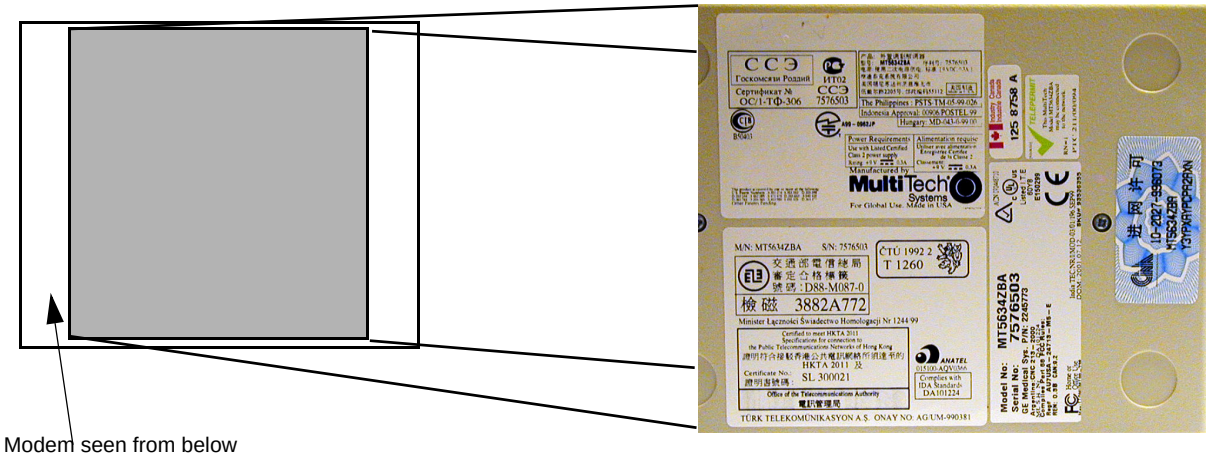


Figure 1-15 Modem Label

Section 1-4
Customer Assistance

1-4-1 Contact Information

If this equipment does not work as indicated in this service manual or in the Basic User Manual, or if you require additional assistance, please contact the local distributor or appropriate support resource, as listed below.

Prepare the following information before you call:

- System ID serial number.
- Software version.

Table 1-9 Phone Numbers for Customer Assistance

Location	Phone Number
USA/Canada GE Medical Systems Ultrasound Service Engineering 4855 W. Electric Avenue Milwaukee, WI 53219 Customer Answer Center	Service 1-800-437-1171 1-800-321-7937 (Latin America) 1-800-668-0732 (Canada) Applications 1-800-682-5327 1-262-524-5698 Fax: +1-414-647-4125
Europe GE Ultraschall Deutschland GmbH & Co. KG Beethovenstraße 239 Postfach 11 05 50, D-42665 Solingen Germany	Tel: +33 130831300 (General Imaging & Cardiac) Fax: +49-212 2802 431
Asia Singapore/Japan) GE Ultrasound Asia Service Department - Ultrasound 298 Tiong Bahru Road #15-01/06 Central Plaza Singapore 169730	Asia Support Center - Singapore Phone: +65-6291-8528 Fax: +65-6291-7006 Japan Support Center Phone: 81-426-48-2940 Fax: 81-426-48-2905

1-4-2 System Manufacturer

Table 1-10 Phone Numbers for Customer Assistance

Manufacturer	Phone Number
ViewPoint Bildverarbeitung GmbH Argelsrieder Feld 12 D-82234 Wessling GERMANY	(+49) 8153 9311 0

Chapter 2
Pre-Installation

Section 2-1
Overview

2-1-1 Purpose of Chapter 2

This chapter provides the information required to plan and prepare for the installation of a LOGIQworks. Included are descriptions of the facility and electrical needs to be met by the purchaser of the unit. A checklist is also provided at the end of this section to help determine whether the proper planning and preparation is accomplished before the actual equipment installation is scheduled.

Table 2-1 Contents in Chapter 2

Section 2-2
General Console Requirements

2-2-1 Environmental Requirements of System based on Dell Precision 340

Table 2-2 Dell Precision 340 Workstation

	Operation	Non-Operation	Storage	Transport
Temperature	10 to 35 ^{o}C (50 to 95 ^{o}F)	-40 to 65 ^{o}C (- 40 to 149°F)	-40 to 65 ^{o}C (- 40 to 149°F)	-40 to 65 ^{o}C (-40 to 149 ^{o}F)
Humidity	20% to 80% non-condensing	20% to 80% non-condensing	20% to 80% non-condensing	20% to 80% non-condensing
Altitude	-52 - 10000ft -16 - 3048 m	-52 - 34777ft -16 - 10600 m	52 - 34777ft -16 - 10600 m	52 - 34777ft -16 - 10600 m

Table 2-3 NEC LCD 1880 Monitor

	Operation	Non-Operation	Storage	Transport
Temperature	5 to 35 ^{o}C (41to 95°F)	-10 to 60 ^{o}C (- 14 to 140°F)	-10 to 60 ^{o}C (-14 to 140°F)	-10 to 60 ^{o}C (-14 to 140 ^{o}F)
Humidity	30% to 80% non-condensing	10% to 85% non-condensing	10% to 85% non-condensing	10% to 85 non-condensing
Altitude	0 - 15912ft 0 - 4850m	0 - 45000ft 0 - 13716m	0 - 45000ft 0 - 13716m	0 - 45000ft 0 - 13716m

Table 2-4 Global Modem

	Operation	Non-Operation	Storage	Transport
Temperature	0 to 50 ^{o}C (32 to 120°F)	0 to 50 ^{o}C (32 to 120°F)	-20 to 70 ^{o}C (-4 to 158°F)	-20 to 70 ^{o}C (-4 to 158°F)
Humidity	20% to 90% non-condensing	20% to 90% non-condensing	20% to 90% non-condensing	20% to 90% non-condensing
Altitude	N/A	N/A	N/A	N/A

2-2-1-1 Cooling

The cooling requirement for the LOGIQworks is within the range 1220-2100 BTU/hr. This is depending on whether a CRT Monitor or LCD Monitor is used, and on the hardware options installed. For detailed BTU/hr. see table 2-7 and table 2-8. The BTU/hr. value relates to the maximum operational Power consumption of the LOGIQworks Workstation. This figure does not include cooling needed for lights, people, or other equipment in the room. Each person in the room places an additional 300 BTU/hr. Demand on the cooling system.

2-2-1-1 Cooling (cont'd)

Table 2-5 LOGIQworks Standard Hardware of System based on Dell Precision 340

	PART	PC	CRT1	CRT2	LCD1	LCD2	Modem	
	BTU/HR	860	495	495	195	195	164	
	Power (W)	250	135	135	57	57	48	Total BTU/HR
LOGIQworks Models	H49021LA	x	x				x	1520
	H49021LB	x	x	x			x	2015
	H49021LC	x			x		x	1220
	H49021LD	x			x	x	x	1415

2-2-1-2 Lighting

Bright light is needed for system installation, updates and repairs. However, operator and patient comfort may be optimized if the room light is subdued and indirect. Therefore a combination lighting system (dim/bright) is recommended. Keep in mind that lighting controls and dimmers can be a source of EMI which could degrade image quality. These controls should be selected to minimize possible interference.

2-2-2 Environmental Requirements of System based on Dell Precision 360, on Dell Precision 370, on Dell Precision 380 or on Dell Precision 390

Table 2-6 Dell Precision 360, Dell Precision 370, Dell Precision 380, Dell Precision 390 Workstation

	Operation	Storage	Transport
Temperature	10 to 35 ^{o}C (50 to 95 ^{o}F)	-40 to 65 ^{o}C (- 40 to 149°F)	-40 to 65 ^{o}C (-40 to 149 ^{o}F)
Humidity	20% to 80% non-condensing	20% to 80% non-condensing	20% to 80 non-condensing
Altitude	-52 - 10000ft -16 - 3048 m	52 - 34777ft -16 - 10600 m	52 - 34777ft -16 - 10600 m

Table 2-7 DELL LCD 1901, DELL LCD 2001 Monitor

	Operation	Storage	Transport
Temperature	5 to 35 ^{o}C 41 to 95 ^{o}F	0 to 60°C 32 to 140 ^{o}F	-20 to 60 ^{o}C -4 to 140°F
Humidity	10% to 80% non-condensing	5% to 90% non-condensing	5% to 90% non-condensing
Altitude	3,657.6m (12,000 ft) max.	12,192 m (40,000 ft) max	12,192 m (40,000 ft) max

Table 2-8 Global Modem

	Operation	Storage	Transport
Temperature	0 to 50 ^{o}C (32 to 120°F)	-20 to 70 ^{o}C (-4 to 158°F)	-20 to 70 ^{o}C (-4 to 158°F)
Humidity	20% to 90% non-condensing	20% to 90% non-condensing	20% to 90% non-condensing
Altitude	N/A	N/A	N/A

2-2-2-1 Cooling

The cooling requirement for the LOGIQworks is within the range 1220-2100 BTU/hr. This is depended on which hardware options that have been installed. For detailed BTU/hr. see table 2-7 and table 2-8. The BTU/hr. value relates to the maximum operational Power consumption of the LOGIQworks Workstation. This figure does not include cooling needed for lights, people, or other equipment in the room. Each person in the room places an additional 300 BTU/hr. Demand on the cooling system.

2-2-2-1 Cooling (cont'd)

Table 2-9 LOGIQworks Standard Hardware of DELL Precision 360 and DELL Precision 370

	PART	PC	LCD1	LCD2	Modem	
	BTU/h	860	195	195	164	
	Power (W)	250	57	57	48	Total BTU/h
LOGIQworks Models	H49021AC	x	x		x	1220
	H49021AD	x	x	x	x	1415
	H49021AA	x	x		x	1220
	H49021AB	x	x	x	x	1415

Table 2-10 LOGIQworks Standard Hardware of DELL Precision 380 and of Dell 390

	PART	PC	LCD1	LCD2	Modem	
	BTU/h	1280	195	195	164	
	Power (W)	357	57	57	48	Total BTU/h
LOGIQworks Models	H49021AK	x	x		x	1220
	H49021AL	x	x	x	x	1415
	H49021AM	x	x		x	1220
	H49021AN	x	x		x	1415

2-2-2-1 Cooling (cont'd)

Table 2-11 LOGIQworks Optional Hardware

PART	Modem		
BTU/h	164		
Power (W)	48		Total BTU/h
All	x		164

2-2-2-2 Lighting

Bright light is needed for system installation, updates and repairs. However, operator and patient comfort may be optimized if the room light is subdued and indirect. Therefore a combination lighting system (dim/bright) is recommended. Keep in mind that lighting controls and dimmers can be a source of EMI which could degrade image quality. These controls should be selected to minimize possible interference.

2-2-3 Time and Manpower Requirements

Site preparation takes time. Begin Pre-installation checks as soon as possible, if possible, six weeks before delivery, to allow enough time to make any changes.

Table 2-12 Average Installation Time

Description	Average Installation Time	Comments
Unpacking	15 minutes	1 person
Checking delivery	15 minutes	1 person
Installation of LOGIQworks	1.0 hour	1 person
Check connectivity and setup	15 minutes	1 person

2-2-4 Electrical Requirements

NOTE *LOGIQworks requires a dedicated power and ground for the proper operation of its workstation. This dedicated power shall originate at the last distribution panel before the system. The dedicated line shall consist of one phase, a neutral (not shared with any other circuit), and a full size ground wire from the distribution panel to the workstation. Please note that image artifacts can occur, if at any time within the facility, the ground from the main facility's incoming power source to the workstation is only a conduit.*

2-2-4-1 LOGIQworks Power Requirements

Electrical Specifications for LOGIQworks

Table 2-13 Electrical Specifications of LOGIQworks System based on Dell Precision 340

GEVU P/N	Voltage	Tolerances	Power	Frequency
H49021LA	110 - 230 VAC	±10%	398W	50-60 Hz
H49021LB	110 - 230 VAC	±10%	543W	50-60 Hz
H49021LC	110 - 230VAC	±10%	310W	50-60 Hz
H49021LD	110 - 230VAC	±10%	367W	50-60 Hz

Table 2-14 Electrical Specifications for LOGIQworks System based on Dell Precision 360 or on Dell Precision 370

GEVU P/N	Voltage	Tolerances	Power	Frequency
H49021AA/AC	110 - 230VAC	±10%	310W	50-60 Hz
H49021AB/AD	110 - 230VAC	±10%	367W	50-60 Hz

Table 2-15 Electrical Specifications for LOGIQworks System based on Dell Precision 380 or on Dell Precision 390

GEVU P/N	Voltage	Tolerances	Power	Frequency
H49021AK/AM	110 - 230VAC	±10%	375W	50-60 Hz
H49021AL/AN	110 - 230VAC	±10%	375W	50-60 Hz

2-2-4-2 Inrush Current

230 VAC:2.5A

100 VAC: 5A

2-2-4-3 Site Circuit Breaker

It is recommended that the branch circuit breaker for the machine be readily accessible.

2-2-4-4 Site Power Outlets

Three to five AC power outlet must be less than 1.2 meters (3.9feet) from the LOGIQworks Workstation. Electrical installation must meet all current local, state, and national electrical codes.

2-2-4-4 Site Power Outlets (cont'd)

WARNING **POWER OUTAGE MAY OCCUR.**

The LOGIQworks **requires a dedicated single branch circuit. To avoid circuit overload and possible loss of critical care equipment, make sure you DO NOT have any other equipment operating on the same circuit.**

2-2-4-5 Unit Power Plug

If the unit arrives without a power plug, or with the wrong plug, you must contact GE Service; they must supply what is locally required.

2-2-5 EMI Limitations

WARNING Danger of Electromagnetic Incompatibility!

Devices that are not CE marked can create an electromagnetic field which could impair the operation of other devices.

To prevent this, check if the device is CE marked or FCC-marked.

Use only CE marked devices and medical devices appropriate under EN/IEC 60601-1-2.

WARNING Danger of False Diagnosis!
Danger of Data Loss!

Personal computers can be affected by electromagnetic fields from other devices.

Do not place devices which could cause electromagnetic interference near the personal computer!

Computers are susceptible to Electromagnetic Interference (EMI) from radio frequencies, magnetic fields, and transients in the air or wiring. They also generate EMI. The LOGIQworks complies with limits as stated on the EMC label. However there is no guarantee that interference will not occur in a particular installation.

Possible EMI sources should be identified before the unit is installed.

Electrical and electronic equipment may produce EMI unintentionally as the result of a defect. These sources include:

- medical lasers,
- scanners,
- cauterizing guns,
- computers,
- monitors,
- fans,
- gel warmers,
- microwave ovens,
- light dimmers
- portable phones.

The presence of a broadcast station or broadcast van may also cause interference.

see Table 2-16 for EMI Prevention tips

Table 2-16 EMI Prevention/Abatement

EMI Rule	Details
Be aware of RF sources	Keep the unit at least 5 meters or 15 feet away from other EMI sources. Special shielding may be required to eliminate interference problems caused by high frequency, high powered radio or video broadcast signals.
Ground the unit	Poor grounding is the most likely reason a unit will have noisy images. Check grounding of the power cord and power outlet.

Table 2-16 EMI Prevention/Abatement

EMI Rule	Details
Take care with cellular phones	Cellular phones may transmit a 5 V/m signal; that could cause image artifacts.

Section 2-3
Facility Needs

2-3-1 Purchaser Responsibilities

The work and materials needed to prepare the site is the responsibility of the purchaser. Delay, confusion, and waste of manpower can be avoided by completing pre installation work before delivery. Use the Pre installation checklist to verify that all needed steps have been taken. Purchaser responsibility includes:

- Procuring the materials required.
- Completing the preparations before delivery of the LOGIQworks.
- Paying the costs for any alterations and modifications not specifically provided in the sales contract.

WARNING All electrical installations that are preliminary to the positioning of the equipment at the site prepared for the equipment must be performed by licensed electrical contractors. Other connections between pieces of electrical equipment, calibrations, and testing must also be performed by qualified personnel. The products involved (and the accompanying electrical installations) are highly sophisticated and special engineering competence is required. All electrical work on these products must comply with the requirements of applicable electrical codes. The purchaser of GE equipment must only utilize qualified personnel to perform electrical servicing on the equipment.

The desire to use a non–listed or customer provided product or to place an approved product further from the workstation than the interface kit allows presents challenges to the installation team. To avoid delays during installation, such variances should be made known to the individuals or group performing the installation at the earliest possible date (preferably prior to the purchase).

The workstation suite must be clean prior to delivery of the machine. Carpet is not recommended because it collects dust and creates static. Potential sources of EMI (electromagnetic interference) should also be investigated before delivery. Dirt, static, and EMI can negatively impact system reliability.

2-3-2 Required Features

- Dedicated single branch power outlets of adequate amperage (see *Table 2-14*) meeting all local and national codes which is located less than 1.5 m (5 ft.) from the workstation's proposed location.
- Proposed location for the workstation is at least 0.3 m (1 ft.) from the wall for cooling.
- Power outlet and place for any external peripheral are within 2 m (6.6ft) of each other with peripheral within 1 m of the unit to connect cables.
- Power outlets for test equipment within 1 m (3.3 ft.) of PC.
- Either an Analog Phone Line, or a GE Approved Broadband/VPN connection, is required for iLinq. A functional LAN is required for Network connectivity.
- An Ethernet network wall jack is required.

2-3-3 Desirable Features

- Circuit breaker for dedicated power outlet is easily accessible.
- Dual level lighting (bright and dim).
- Lockable cabinet ordered by GE for its software and proprietary manuals.

2-3-3 Desirable Features (cont'd)

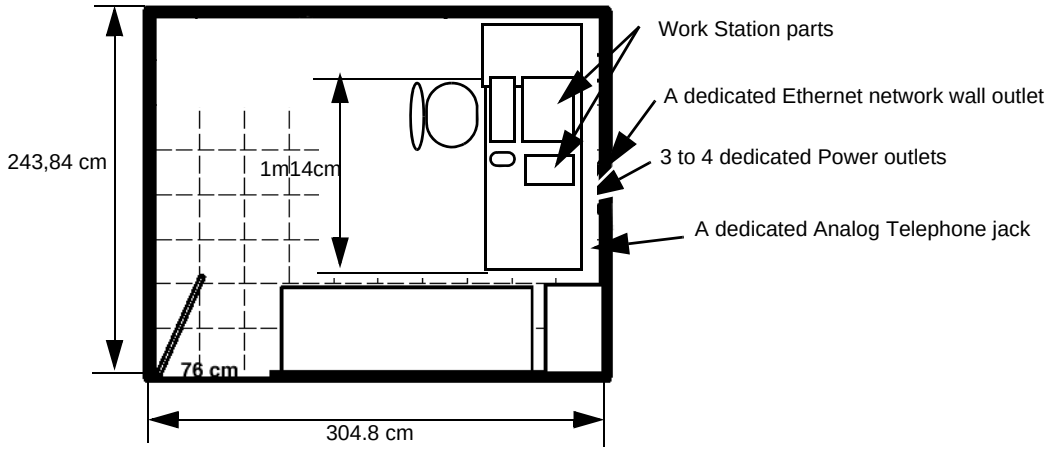


Figure 2-1 Minimum room needs for LOGIQworks

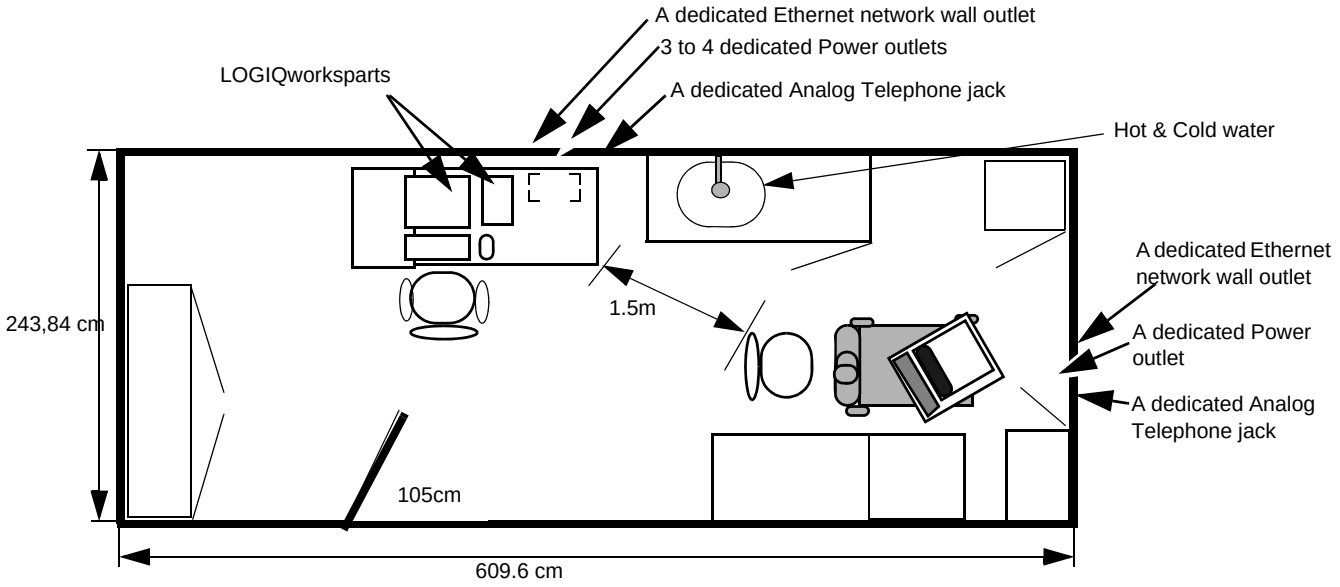


Figure 2-2 Suggested Maximum Room with LOGIQworks and Ultrasound Scanner

2-3-3-1 Patient environment IEC 60601-1-1

An area in which patients are normally cared for, the patient vicinity is the space with surfaces likely to be contacted by the patient or attendant who can touch the patient.

In practice a distance of 2,5 m (8.2 ft.) above the floor on which the medical personnel stand and a horizontal distance of 1,5 m (4.9 ft.) have justified themselves as indicative of the dimensions of the Patient Environment.

The patient environment/vicinity will be depicted as a dashed line in this procedure. See example below.

WARNING Danger of Electrical Shock!

Danger of Electrical Shock!

A connection between the patient and a personal computer can result in risks for the patient from electric current. Consider, therefore, these safety references:

– Use only CE marked electrical equipment!

– Install a galvanic isolator to insulate the connection between the personal computer and all connected medical equipment (e.g. fibre optic cable or certified video isolator)!

– Set up the personal computer outside the patient's vicinity (1.5 m/4.9 ft.)!

Use only CE marked galvanic isolators or medical devices appropriate under EN/IEC 60601-1 and EN/IEC 60601-1-1!

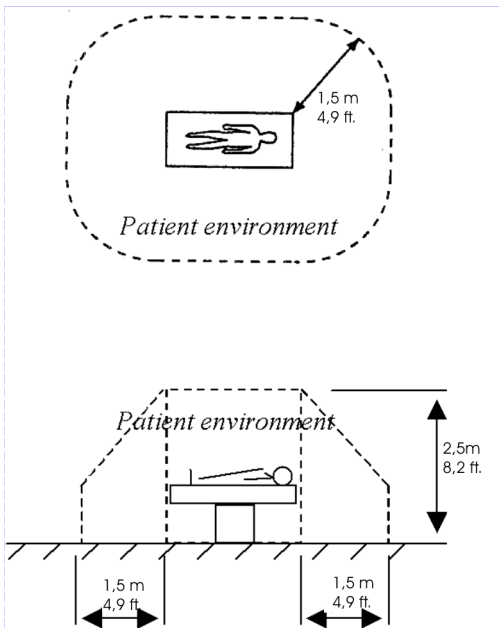


Figure 2-3 Patient safety information

2-3-3-2 Patient environment IEC 601-1

Sub clause 2.204

Such an area is an environment in which medical diagnosis, monitoring or treatment is carried out. It is very difficult to attach unique dimensions to the PATIENT ENVIRONMENT.

2-3-4 Networking Pre-installation Requirements

2-3-4-1 LOGIQworks Connected to a Network

Supported networks:

- 10 or 100 Megabit Network can be used.

2-3-4-2 Stand Alone Network or Integrated into Hospital's Network

If LOGIQworks is to be used in a separate network together with a LOGIQ 9 or LOGIQ 7 and a network printer with no connection to the Hospital's network or LOGIQworks is to be on the Hospital network either the predefined factory settings should be used.

2-3-4-3 DICOM Network Option Pre-Installation Requirements

To configure the LOGIQworks to work with other network connections, the site's network administrator must provide information to complete the Data Collection Document on *page 14*. Ensure that there are no spaces in any field of the form except for those fields under PHYSICAL LOCATION. Entries must include:

- Verify that there is a Conformancy Statement that documents the DICOM server you are about to use supports Ultrasound images.
- A host name, local port number, AE Title, IP address and Net Mask for the LOGIQworks.
- The IP addresses for the default gateway and other routers at the site for ROUTING INFORMATION.
- The host name, IP address, port and AE Title for each device the site wants connected to the LOGIQworks for DICOM APPLICATION INFORMATION. Fields for Description, Institution Name, Institution Department Name and Station Name are also available to describe the sending devices in more detail. This information may be useful for error solving.

2-3-4-4 Insite 2

For Insite 2 a connection to the internet is required.

Recommendation: A permanent broadband to the internet. The customer is responsible for the connectivity, configuration and operation of this internet access funktionality.

2-3-4-4 Insite 2 (cont'd)

Hospital Name

Department
Physical Address
City, State Zip

Project Mgr:
Release Date:

Scope of Project

Sales Order Information

Acct. Mgr:	Apps:	FDO#:	FE:
Product	Qty	Comments	

Customer Contacts

Name	Title	E-mail address	Work #	Fax #

Figure 2-4 Data Collection Document Page 1

2-3-4-4 Insite 2 (cont'd)

Risk Identified	
Application Notes	
FE Notes	
Manufacturing Notes	

Network Drawing <LINK>

Chronology <LINK>

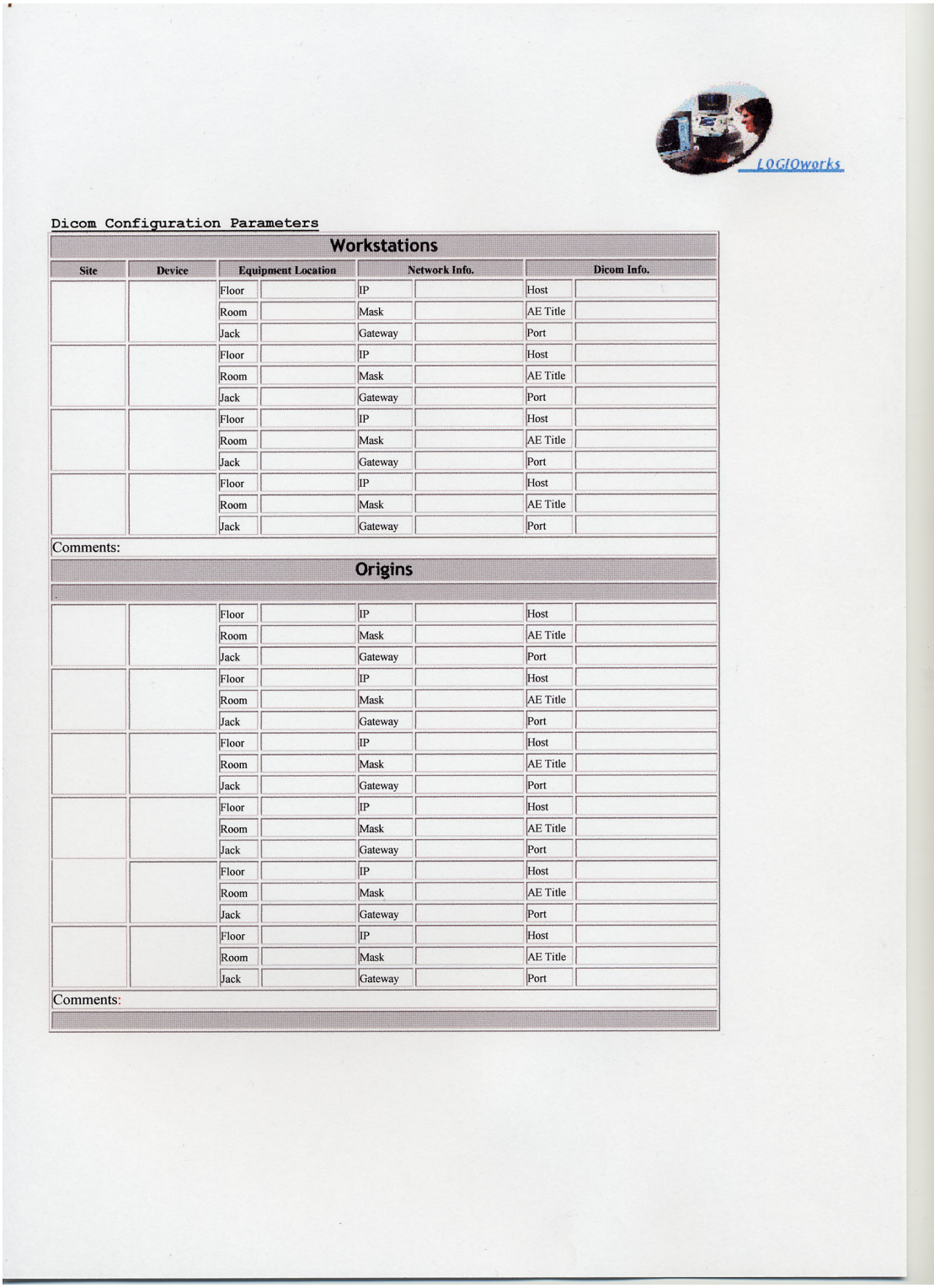
Windows Configuration Parameters

Windows Setup	Organization	User Name	User Passwd	Time Zone

Windows Control Panel Settings			
	Computer Name		Domain / Workgroup
System Network identification Properties			
If not filled out use following defaults:	LOGIQworks-x (1,2..)		LOGIQworks

Figure 2-5 Data Collection Document Page 2

2-3-4-4 Insite 2 (cont'd)



Dicom Configuration Parameters

Workstations

Site	Device	Equipment Location		Network Info.		Dicom Info.	
		Floor		IP		Host	
		Room		Mask		AE Title	
		Jack		Gateway		Port	
		Floor		IP		Host	
		Room		Mask		AE Title	
		Jack		Gateway		Port	
		Floor		IP		Host	
		Room		Mask		AE Title	
		Jack		Gateway		Port	
		Floor		IP		Host	
		Room		Mask		AE Title	
		Jack		Gateway		Port	

Comments:

Origins

		Floor		IP		Host	
		Room		Mask		AE Title	
		Jack		Gateway		Port	
		Floor		IP		Host	
		Room		Mask		AE Title	
		Jack		Gateway		Port	
		Floor		IP		Host	
		Room		Mask		AE Title	
		Jack		Gateway		Port	
		Floor		IP		Host	
		Room		Mask		AE Title	
		Jack		Gateway		Port	
		Floor		IP		Host	
		Room		Mask		AE Title	
		Jack		Gateway		Port	
		Floor		IP		Host	
		Room		Mask		AE Title	
		Jack		Gateway		Port	

Comments:

Figure 2-6 Data Collection Document Page 3

2-3-4-4 Insite 2 (cont'd)

LOGIQworks

Destinations							
Site	Device	Equipment Location		Network Info.		Dicom Info.	
		Floor		IP		Host	
		Room		Mask		AE Title	
		Jack		Gateway		Port	
		Film Size		Destination		Densities	min max
		Layouts		Media Type		Config string	
		Floor		IP		Host	
		Room		Mask		AE Title	
		Jack		Gateway		Port	
.							
		Floor		IP		Host	
		Room		Mask		AE Title	
		Jack		Gateway		Port	
		Floor		IP		Host	
		Room		Mask		AE Title	
		Jack		Gateway		Port	
Comments:							

Remote Access

Location	Connection	Access #	RAS or VPN		IP	
			User Login		Mask	
.			Passwd		Gateway	
Comments:						

1. If connection to site is through VPN, is secure authentication ID required?
2. Does your site currently have a persistent (24x7) Internet connection?
3. Equipment Type

User Defined Account Mgmt

Log On-User Name	Password	Membership (User or Administrator?)

Figure 2-7 Data Collection Document Page 4

2-3-4-4 Insite 2 (cont'd)

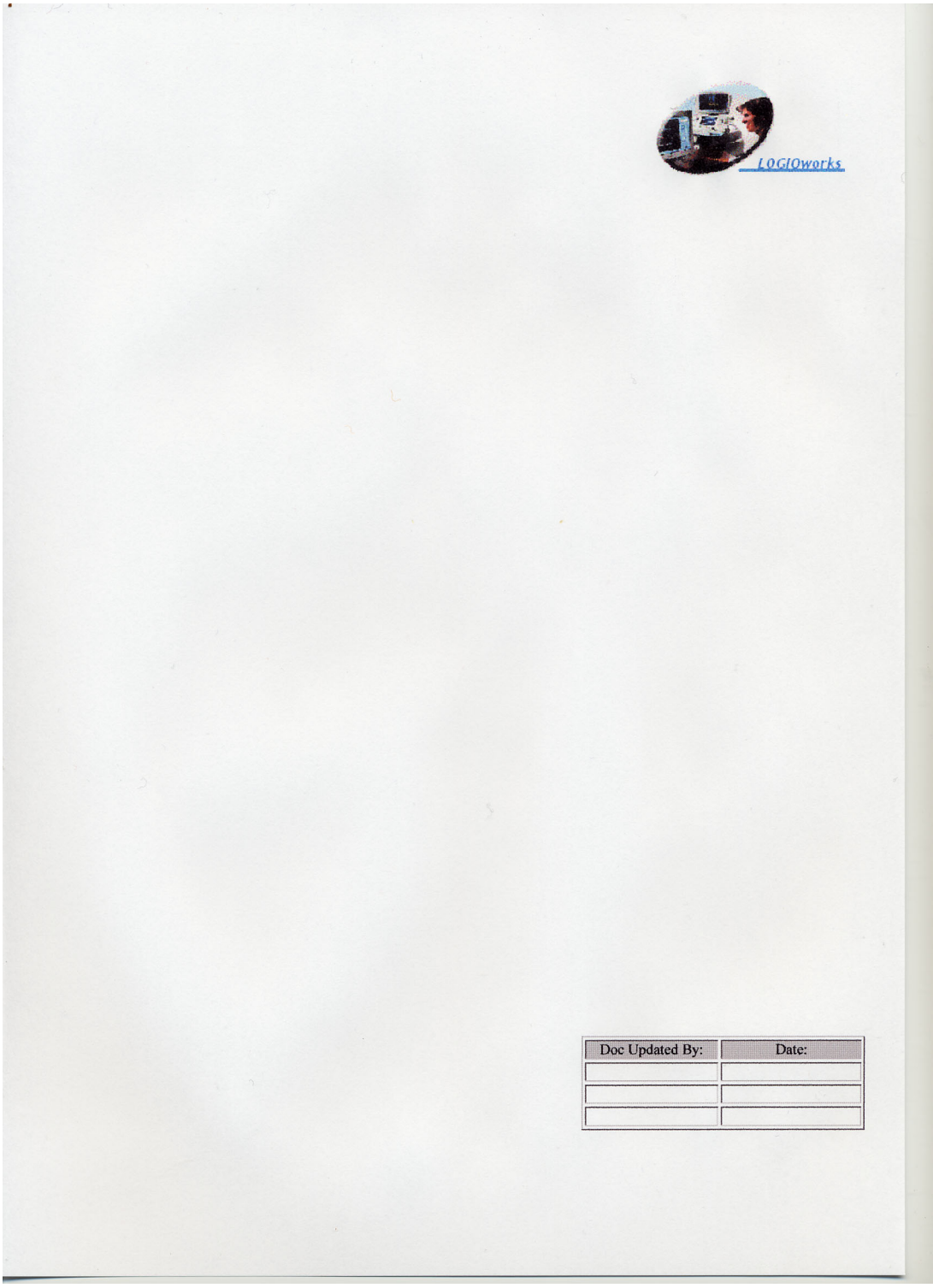


Figure 2-8 Data Collection Document Page 5

Your Notes:

Chapter 3
Installation

Section 3-1
Overview

3-1-1 The Purpose of Chapter 3

This chapter contains information **NEEDED** to install the UNIT, a procedure that describes how to receive and unpack the equipment and how to file a damage or loss claim.

How to prepare the facility and unit of the actual installation, and how to check and test the unit and external peripherals for electrical safety are included in this procedure.

Table 3-1 Contents in Chapter 3

3-1-2 Average Installation Time

For time and personnel estimates during the installation see: Section 2-2-3 "Time and Manpower Requirements" on page 2-6.

3-1-3 Safety Reminders

WARNING **WHEN USING ANY TEST INSTRUMENT THAT IS CAPABLE OF OPENING THE AC GROUND LINE (I.E., METER'S GROUND SWITCH IS OPEN), DON'T TOUCH THE UNIT!**

WARNING Two people should unpack the unit because of its weight. Two people are required whenever a part weighing 22 kg (50 lbs.) or more must be lifted.

CAUTION If the unit is very cold or hot, do not turn on its power until it has had a chance to acclimate to its operating environment.

Table 3-2 LOGIQworks Acclimate Time

°C	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60
°F	-40	-31	-22	-13	-4	5	-50	41	32	41	50	59	68	77	86	95	104	113	122	131	140
hrs	20	18	16	14	12	10	8	6	4	2	0	0	0	0	0	0	0	2	4	6	8

WARNING **To prevent electrical shock, connect the unit to a properly grounded power outlet. Do not use a three to two prong adapter. This defeats safety grounding.**

WARNING **OPERATOR MANUAL(S)**
The User Manual(s) should be fully read and understood before operating the LOGIQworks and kept near the unit for quick reference.

Section 3-2
Receiving and Unpacking the Equipment

3-2-1 Shipment Description

From the source factory all LOGIQworks parts are packed in the original packaging and put into a cardboard box.

3-2-1-1 Check of Delivered Box

1.) Check that cardboard box is undamaged as it was shipped.

CAUTION Do not accept if damaged!

2.) Check that they match the contents on the included Delivery Note.
3.) Check that each box is undamaged and unopened.
4.) Open each of these cardboard boxes.
5.) Check that contents are there and undamaged.
6.) Move the shipment to the place where it is to be installed.
7.) Unpack the Parts, run the check list shown below.
8.) Handling Incomplete or Damaged Shipment.

Please read that procedure before packing/unpacking the LOGIQworks.

User Manual(s):

Check that the correct User Manual(s) for the system and software revision is included with the installation. Specific language versions of the User Manual may also be available. Check with your GE Sales Representative for availability.

We strongly advise you to store the LOGIQworks packing material in undamaged condition in case of future transportation.

3-2-1-1 Check of Delivered Box (cont'd)

WARNING

Transport only with forklift or stracker truck.
During transport pay attention to the point of gravity!

Have two people available to unpack the LOGIQworks.
Attempts to move the unit considerable distances or on an incline by one person could result in injury or damage or both.

The envelope with delivery address, packing list and invoice is located on the front panel of the crate.

Check whether delivery is complete (according to packing list) and check visual damage!

Shipping packaging, cut the black ribbon with a knife and unpack the system components

Figure 3-1 Shipping packaging and envelope at front panel of the crate

CAUTION

The device must only be transported in the original packaging!
Unpack the devices such a way that packaging can be reused.

3-2-1-1Check of Delivered Box (cont'd)

Figure 3-2 The LOGIQworks H49021LC delivery

Table 3-3 The LOGIQworks H49021LC parts

	Name	Qty	✔
1	Dell Precision 340	1	
2	Monitor NEC LCD 1880 Sx	1	
3	Modem	1	

3-2-1-1Check of Delivered Box (cont'd)

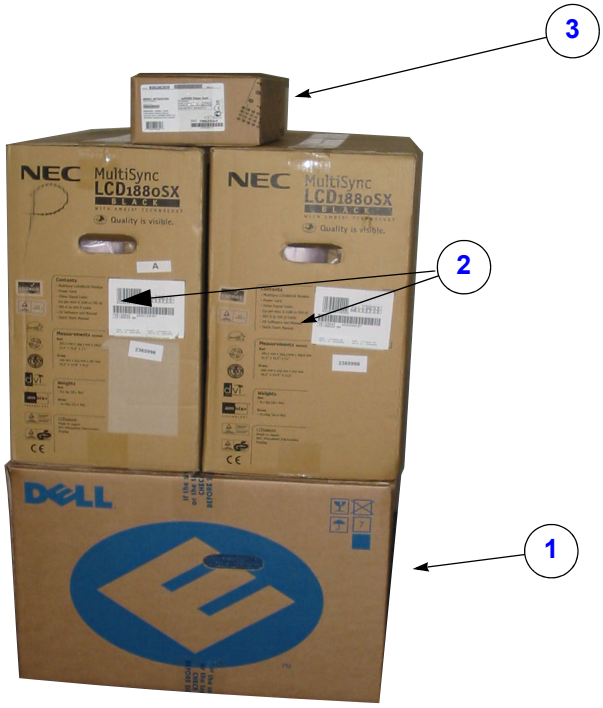


Figure 3-3 The LOGIQworks H49021LD delivery

Table 3-4 The LOGIQworks H49021LD parts

	Name	Qty	✔
1	Dell Precision 340	1	
2	Monitor NEC LCD 1880 Sx	2	
3	Modem	1	

3-2-1-1Check of Delivered Box (cont'd)

Figure 3-4 The LOGIQworks H49021LA delivery

Table 3-5 The LOGIQworks H49021LA parts

Item	Name	Qty	✔
1	Dell Precision 340	1	
2	Monitor Sony GMD-F520	1	
3	Modem	1	

3-2-1-1Check of Delivered Box (cont'd)

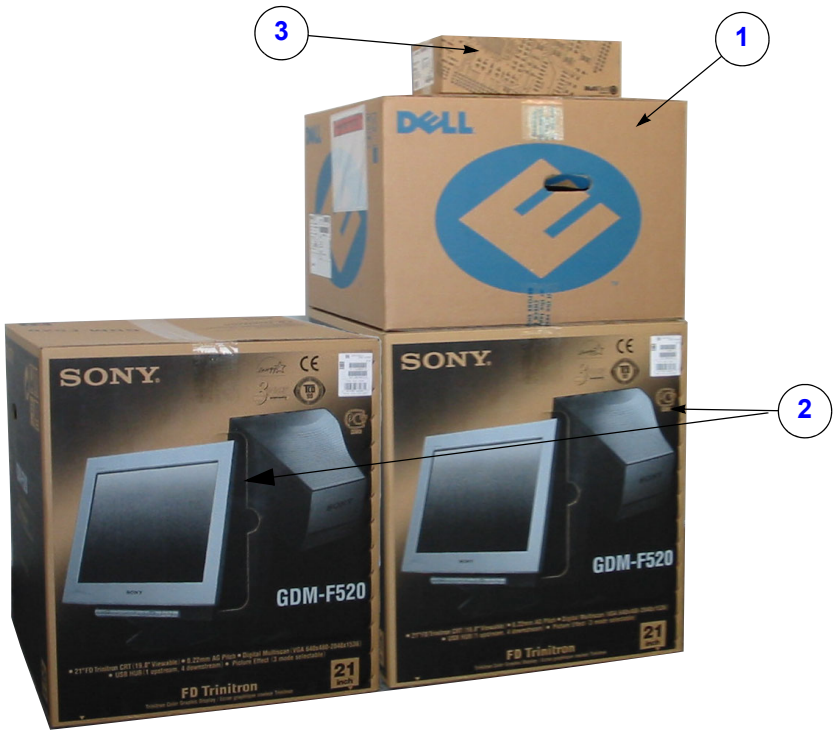


Figure 3-5 The LOGIQworks H49021LB delivery

Table 3-6 The LOGIQworks H49021LB parts

	Name	Qty	✔
1	Dell Precision 340	1	
2	Monitor Sony GMD-F520	2	
3	Modem	1	

3-2-1-1Check of Delivered Box (cont'd)

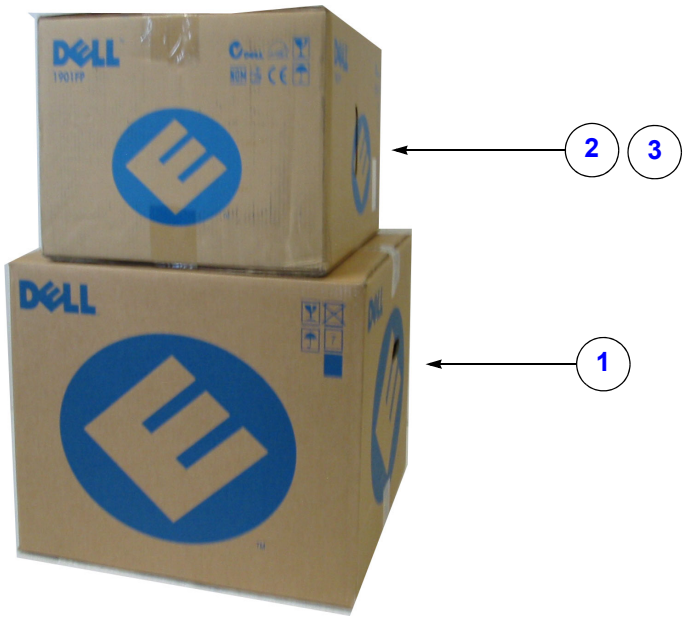


Figure 3-6 The LOGIQworks H49021AC/H49021AA or H49021AK/H49021AM delivery.

Table 3-7 The LOGIQworks 1FP H49021AA/H49021AC parts

	Name	Qty	✔
1	Dell Precision 360 or Dell Precision 370	1	
2	Monitor Dell LCD 1901 Europe	1	
3	Monitor Dell LCD 2001 US/ASIA	1	

Table 3-8 The LOGIQworks 1FP H49021AK/H49021AM parts

	Name	Qty	✔
1	Dell Precision 380 or Dell Precision 390	1	
2	Monitor Dell LCD 1901 Europe	1	
3	Monitor Dell LCD 2001 US/ASIA	1	

3-2-1-1Check of Delivered Box (cont'd)

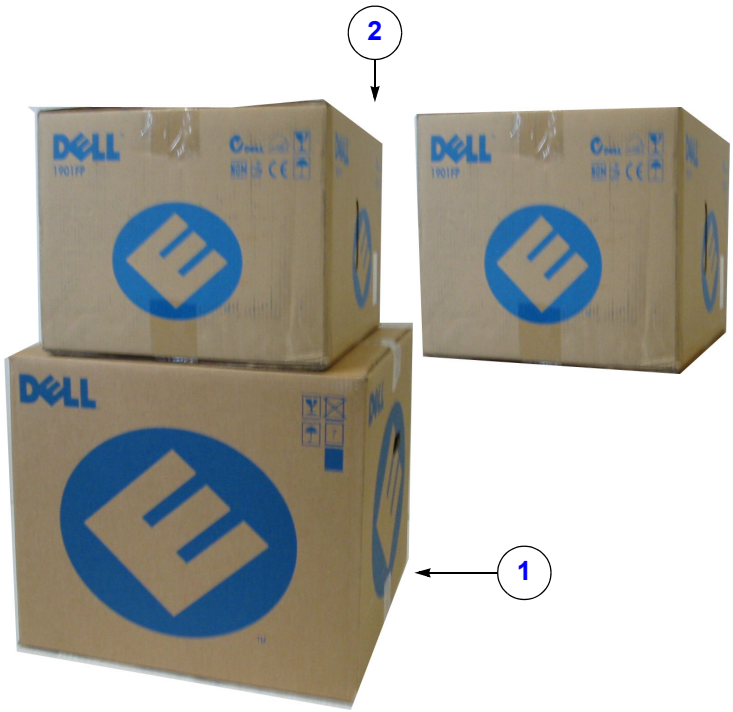


Figure 3-7 The LOGIQworks H49021AD/H49021AB or H49021AL/H49021AN delivery

Table 3-9 The LOGIQworks H49021AD/H49021AB parts

	Name	Qty	✔
1	Dell Precision 360 or Dell Precision 370	1 or 1	
2	Monitor Dell LCD 1901 Europe	2	
	Monitor Dell LCD 2001 US/Asia	2	

Table 3-10 The LOGIQworks H49021AL/H49021AN parts

	Name	Qty	✔
1	Dell Precision 380 or Dell Precision 390	1	
2	Monitor Dell LCD 1901 Europe	2	
	Monitor Dell LCD 2001 US/Asia	2	

3-2-1-2 Contents of CPU Box

3-2-1-2-1 Contents of CPU Box of System based on Dell Precision 340

Figure 3-8 Contents of CPU Box

Table 3-11 Contents of CPU Box of System based on Dell Precision 340

Item	Name	Qty	✔
1	Dell Precision 340	1	
2	US Keyboard	1	
3	Installation Guide Setup	1	
4	Quick Reference Guide	1	
5	System Information Guide	1	
6	PS/2 Mouse	1	
7	Power Cable German	1	
8	Y-Monitor Cable digital	1	
9	Y-Monitor Cable analog	1	
10	Windows 2000 CD	1	
11	Utility CDs	1	

3-2-1-2-2 Contents of CPU Box of System based on Dell Precision 360 or on Dell Precision 370

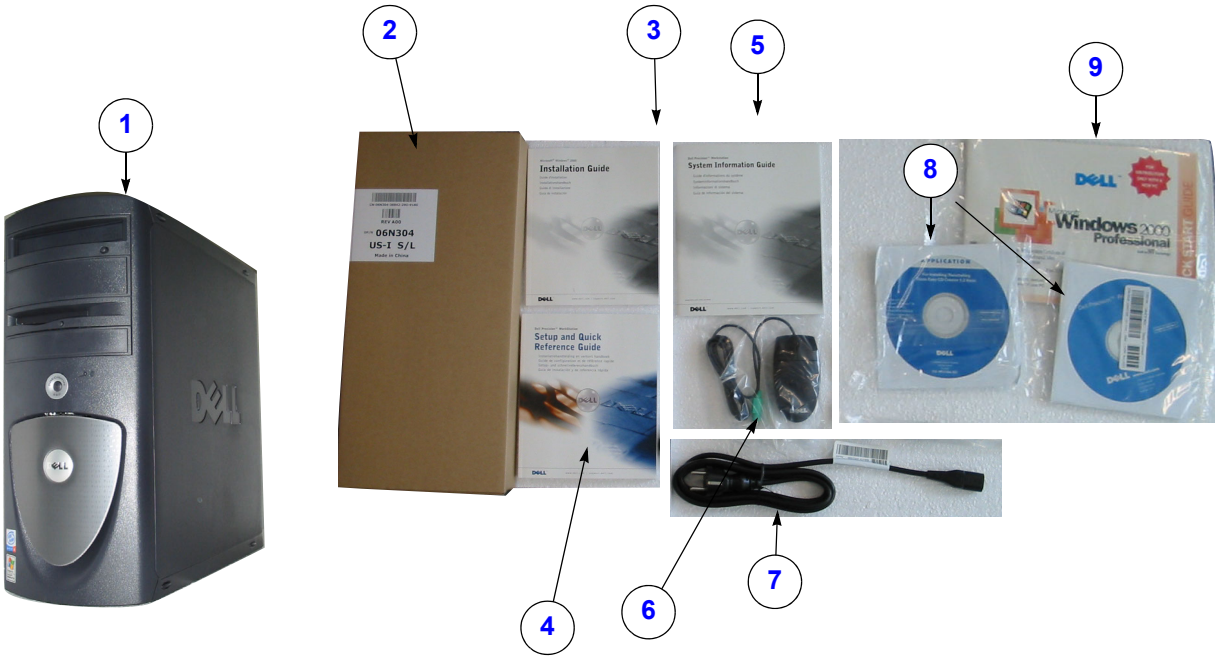


Figure 3-9 Contents of CPU Box of System based on Dell Precision 360 or on Dell Precision 370

Table 3-12 Contents of CPU Box of System based on Dell Precision 360 or on Dell Precision 370

Item	Name	Qty	✔
1	Dell Precision 340	1	
2	US Keyboard	1	
3	Installation Guide Setup	1	
4	Quick Reference Guide	1	
5	System Information Guide	1	
6	PS/2 Mouse	1	
7	Power Cable German	1	
8	Windows 2000 CD	1	
9	Utility CDs	1	

3-2-1-2-3 Contents of CPU Box of System based on Dell Precision 380 and Dell Precision 390

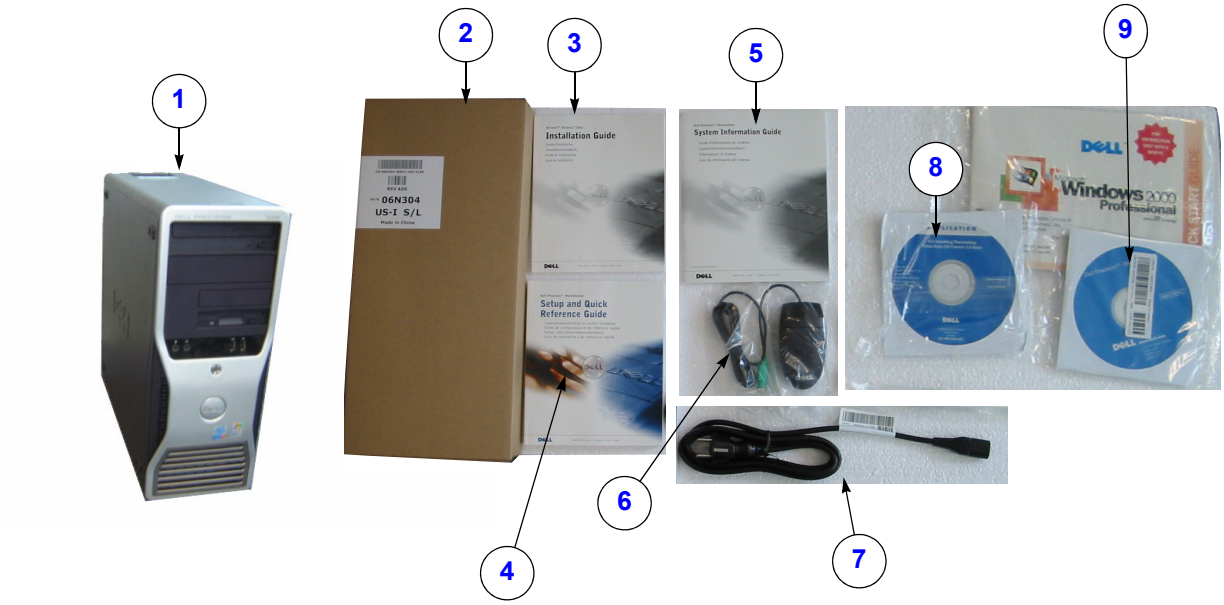


Figure 3-10 Contents of CPU Box of System based on Dell Precision 380 and Dell Precision 390

Table 3-13 Contents of CPU Box of System based on Dell Precision 380 and Dell Precision 390

Item	Name	Qty	✔
1	Dell Precision 380/Dell Precision 390	1	
2	US Keyboard	1	
3	Installation Guide Setup	1	
4	Quick Reference Guide	1	
5	System Information Guide	1	
6	USB Mouse	1	
7	Power Cable German	1	
8	Windows XP CD	1	
9	Utility CDs	1	

3-2-1-3 Additional Parts in CPU Box

3-2-1-3-1 Additional Parts in CPU Box of System based on Dell Precision 340

Figure 3-11 Additional Parts in CPU Box

Table 3-14 CPU Box parts list

Item	Name	Qty.	✔
1	Basic Service Manual	1	
2	Quick Guide with User Manual CD	1	
3	Quick Card	1	
4	Cat5 Patch cable	1	
5	Optical USB Mouse	1	
6	Recovery CD's	1	
7	USB Harddisk	1	
8	RA 600 Dongle	1	
9	Release Notes	1	
10	Log on Informations	1	
11	3-5 Power cords, if not shipped to Germany	3-5	

3-2-1-3-2 Additional Parts in CPU Box of System based on Dell Precision 360, Dell Precision 370, Dell Precision 380 and Dell Precision 390

Figure 3-12 Additional Parts in CPU Box of System based on Dell Precision 360, Dell Precision 370, Dell Precision 380 and Dell Precision 390

Table 3-15 CPU Box parts list

Item	Name	Qty.	✔
1	Quick Card	1	
2	Quick Guide	1	
3	Basic Service Manual	1	
4	Cat5 Patch cable	1	
5	Cat5 Cross Over Patch cable (for Europe only)	1	
6	2 Power cords, if not shipped to Germany	2	
7	Recovery CD	1	
8	User Documentation CD	1	

Table 3-15 CPU Box parts list

Item	Name	Qty.	✔
9	Optical USB Mouse	1	
10	Software Option Dongle	1	
11	USB Harddisk	3-5	
13	Instant CD/DVD		
15	Powercord FP2001US for US only	1-2	
16	Y-Monitor cable	1	

3-2-1-4 LCD Monitor

3-2-1-4-1 LCD Monitor of System based on Dell Precision 340

Figure 3-13 Parts in the LCD delivery of System based on Dell Precision 340

Table 3-16 Contents of LCD Monitor

Item	Name	Qty.	✔
1	Monitor, LCD	1	
2	Signal Cable analog	1	
3	Signal Cable digital	1	
4	Power Cable EU*	1	
5	Documentation	1	
	(*If not shipped to Germany, the EU power cord is not used; see Table 3-22 and Table 3-23 for power cord information)		

3-2-1-4-2 LCD Monitor of System based on Dell Precision 360, Dell Precision 370, Dell Precision 380 or Dell Precision 390

Figure 3-14 Parts in the LCD delivery of System based on Dell Precision 360, Dell Precision 370, Dell Precision 380 or Dell Precision 390

Table 3-17 Contents of LCD monitor of System based on Dell Precision 360, Dell Precision 370, Dell Precision 380 or Dell Precision 390

Item	Part Name	Qty	✔
1	Monitor, LCD	1	
2	Power Supply	1	
3	Power Cable US	1	
4	USB Cable	1	
5	Signal Cable analog	1	
6	Software CD	1	
7	Installation Manual	1	

3-2-1-5 Sony CRT Monitor

Figure 3-15 Parts in the CRT delivery

Table 3-18 Contents of CRT Monitor Box

Item	Name	Qty	✔
1	Monitor CRT	1	
2	Signal Cable analog	1	
3	Power Cable EU*	1	
4	Documentation	1	
	(*If not shipped to Germany, the EU power cord is not used; see Table 3-22 and Table 3-23 for power cord information)		

3-2-1-6 Modem Kit Parts Delivery Inspection

3-2-1-6-1 Modem Kit Parts Delivery Inspection of System based on Dell Precision 340

Figure 3-16 Modem Kit 066E0796 Parts overview.

Table 3-19 Modem Kit 066E0796 Parts Table

ITEM	Name	Part Number	Qty.	✔
1	Read Me First Document	Part of GE Part Number 2245794	1	
2	Modem	GE Part Number 2245794	1	
3	Telephone cable	Part of GE Part Number 2245794	1	
4	Telephone Wire	Part of GE PartNumber 2245794	1	
5	AC/DC Power convertor	Part of GE Part Number 2245794	1	
6	Power Cable	Part of GE Part Number 2245794	1	
7	Plastic bag with 4 Stand-Offs	Part of GE Part Number 2245794	1	
8	Velcro-fasteners	Part of GE Part Number 2245794	1	
9	Installation manual	Part of GE Part Number 2245794	1	
10	Telephone jack adapters	Part of GE Part Number 2245794	1	

3-2-1-6-2 Modem Parts Delivery Inspection of System based on Dell Precision 360, Dell Precision 370, Dell Precision 380 and Dell Precision 390

Figure 3-17 Modem Parts overview.

Table 3-20 Modem Parts Table

ITEM	Name	Part Number	Qty.	✔
1	Installation CD	Part of GE Part Number 2413338	1	
2	Modem	GE Part Number 2413338	1	
3	Telephone cable	Part of GE Part Number 2413338	1	
4	Quick Start Guide	Part of GE Part Number 2413338	1	
5	Telephone Wire	Part of GE PartNumber 2413338	1	
6	Plastic bag with 4 Stand-Offs	Part of GE Part Number 2413338	1	

Section 3-3
Preparing for Installation

3-3-1 Physical Inspection

3-3-1-1 LOGIQworks Voltage Settings

- Verify that the LOGIQworks has the correct voltage delivery.

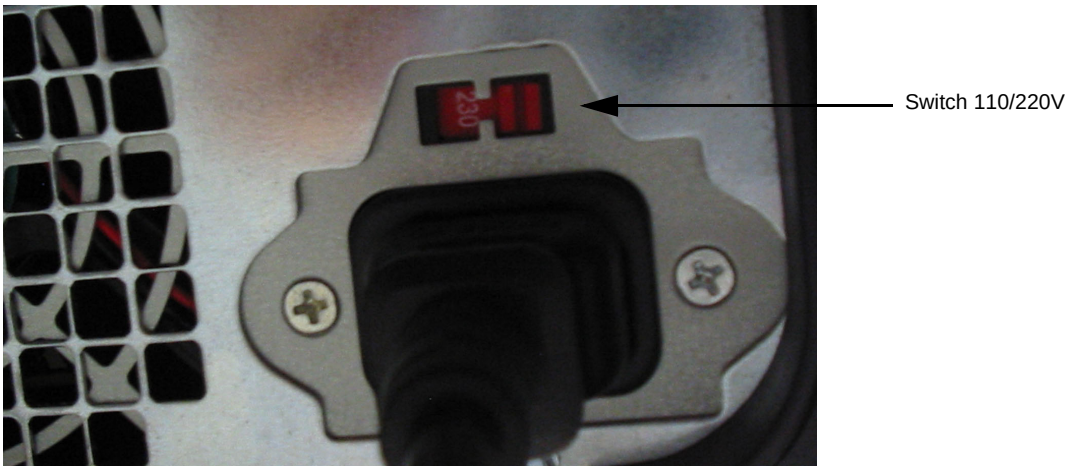


Figure 3-18 Correct Voltage Settings

Table 3-21 International Voltage and Frequencies settings

Country	V	Hz
Argentina	220	50
Australia	230	50
Austria	230	50
Bahamas	120	60
Belgium	230	50
Brazil	110/220	60
Canada	120	60
China, People’s Republic of	220	50
Croatia	230	50
Czech Republic	230	50
Denmark	230	50
Egypt	220	50
Finland	230	50

Table 3-21 International Voltage and Frequencies settings

Country	V	Hz
France	230	50
Germany	230	50
Great Britain	230	50
Greece	220	50
Hong Kong	220	50
Hungary	230	50
Iceland	220	50
India	240	50
Israel	230	50
Italy	230	50
Japan	100	50/60
Korea, South	220	60
Luxembourg	220	50
Mexico	127	60
Monaco	127/220	50
Netherlands	230	50
New Zealand	230	50
Norway	230	50
Poland	230	50
Portugal	220	50
Russian Federation	220	50
Singapore	230	50
Slovak Republic	230	50
South Africa	220/230	50
Spain	230	50
Sweden	230	50
Switzerland	230	50
Taiwan	110	60
Turkey	230	50
United States of America	120	60

3-3-1-2 Power Cables

Table 3-22 Power Cable for DELL PC and DELL Monitor FP1901, Multitech Modem

Name	Part Number
Power Cord US	2369732
Power Cord French	2369733
Power Cord German	2369734
Power Cord Italian	2369735
Power Cord Spanish	2369736

WARNING Connecting The LOGIQworks to a wrong voltage level destroys the LOGIQworks.

Table 3-23 Power Cable for DELL Monitor 2001

Name	Part Number
Power Cord US	2409670

Section 3-4
Completing the Installation

3-4-1 System Specifications

3-4-1-1 Physical Dimensions of LOGIQworks

The physical dimensions of the LOGIQworks main parts are summarized in Table 3-25. Table 3-27 lists the weight of LOGIQworks, with monitor and without on-board peripherals.

Table 3-24 Physical Dimension Table of System based on Dell Precision 340

Unit Description	Height	Width	Depth	Unit
DellPrecision 340	42.5	18.1	44.7	cm
	17.0	7.1	17.5.	Inches
Sony GDM F520	49.9	49.7	48.7	cm
	19.0	19.4	19.0	Inches
NEC LCD 1880	39.4	38.7	18.0	cm
	15.0	15.1	7.0	Inches
Modem	10.9	2.5	14.5	cm
	4.3	1.0	5.7	Inches

Table 3-25 Physical Dimensions table of System based on Dell Precision 360, Dell Precision 370, Dell Precision 380 or on Dell Precision 390

Unit Description	Height	Width	Depth	Unit
Dell Precision 360 Dell Precision 370	42.5	18.1	44.7	cm
	17.0	7.1	17.5	Inches
Dell Precision 380 Dell Precision 390	44.5	16.5	45.7	cm
	17.5	6.5	18	Inches
DELL LCD 1901	39.4	38.7	18.0	cm
	15.0	15.1	7.0	Inches
Modem	10.9	2.5	14.5	cm
	4.3	1.0	5.7	Inches
DELL LCD 2001	39.4	38.7	18.0	cm
	15.0	15.1	7.0	Inches

3-4-1-2 Required Space for LOGIQworks Installation

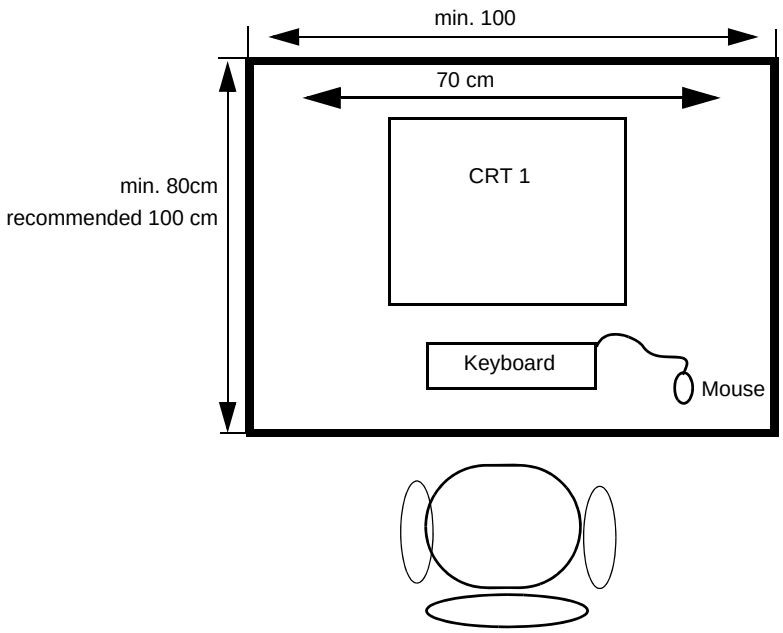


Figure 3-19 Required Space for System with 1 CRT Monitor

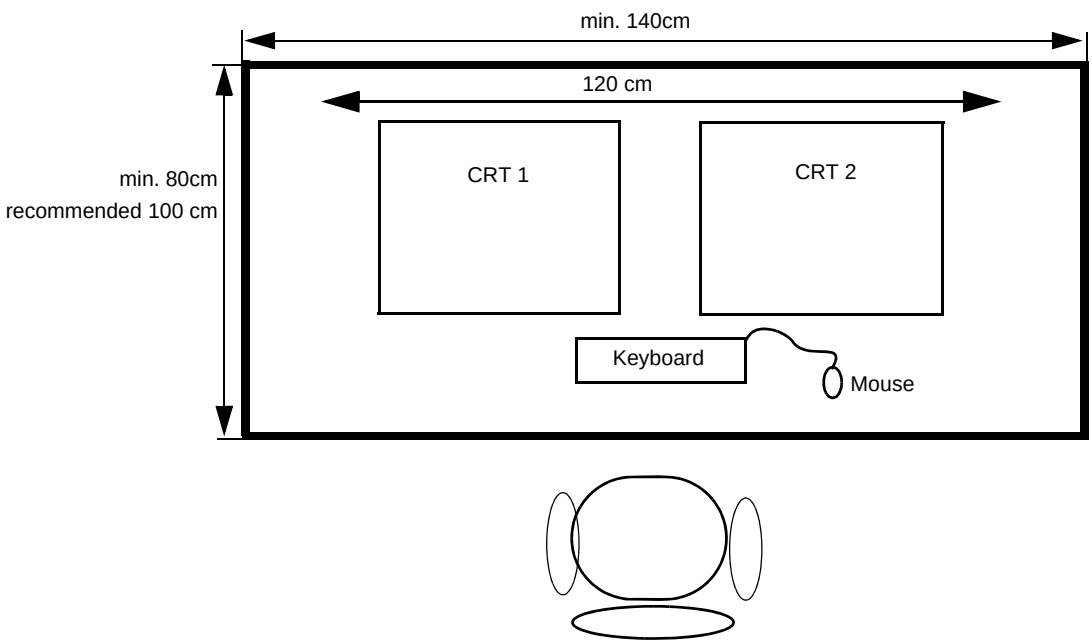


Figure 3-20 Required Space for System with 2 CRT Monitors

3-4-1-2 Required Space for LOGIQworks Installation (cont'd)

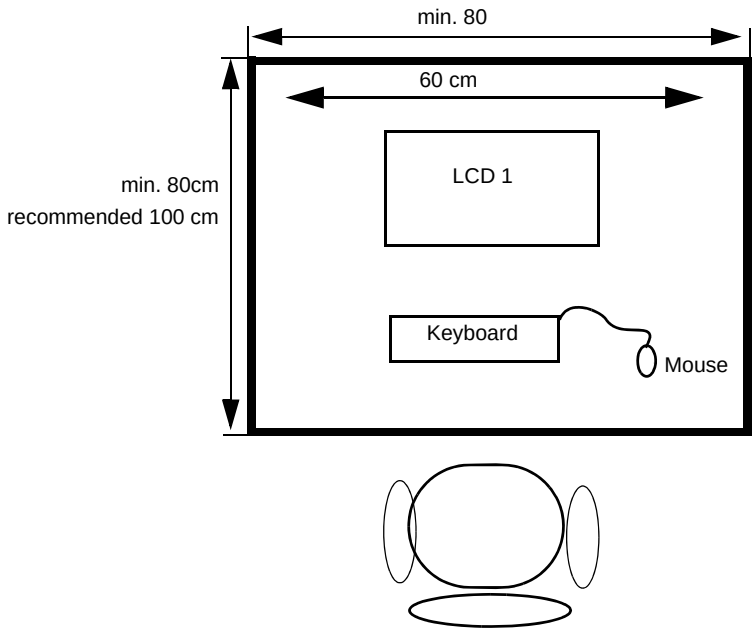


Figure 3-21 Required Space for System with 1 LCD Monitor

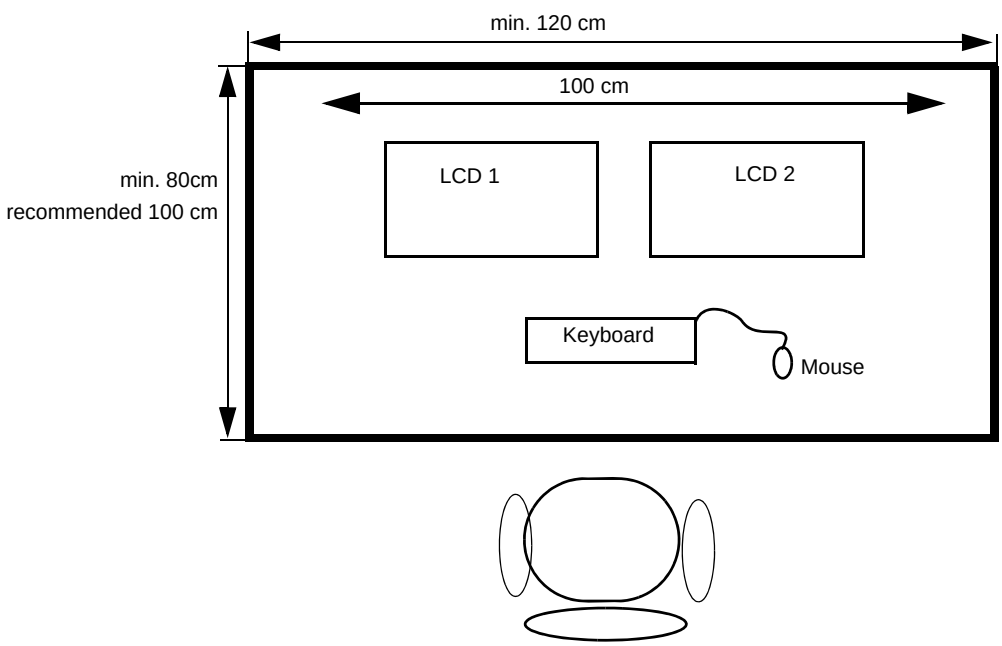


Figure 3-22 Required Space for System with 2 LCD Monitors

3-4-1-3 Weight

3-4-1-3-1 Weight of System based on Dell Precision 340

Table 3-26 Weight table of System based on Dell Precision 340

Model	Weight [kg]	Weight [lbs]
Dell Precision 340	9.9	21.83
LOGIQworksw/CRT Monitor	30.5	67.24
LOGIQworksw/LCD Monitor	8.2	18.08
Modem	0.2	0.5

Table 3-27 Weight table of System based on Dell Precision 360, Dell Precision 370, on Dell Precision 380 or on Dell Precision 390

Model	Weight [kg]	Weight [lbs]
Dell Precision 360 Dell Precision 370	9.9	21.83
Dell Precision 380 Dell Precision 390	17.7	39
LOGIQworks/LCD Monitor	8.2	18.08
Modem	0.2	0.5

3-4-1-3-2 Transport of PC and Monitor

The weight of PC and Monitor exceeds 25lbs. To prevent injuries form carrying PC and Monitor, cut the delivered box (See “3-2-1-1 Check of Delivered Box (cont’d)” on page 4.) and move PC and Monitor to the installation location.

3-4-1-4 Acoustic Noise Output

max. 57dB(A)

3-4-2 Electrical Specifications

To see the Electrical Specifications for the LOGIQworks see Table 2-14 on page 2-7.

Power Consumption nominal 550 VA including all options.

.

WARNING Modification of voltage setting only by an authorized service person! Output power: 550VA per mains outlet, max. power of all connected accessories must not exceed 550VA.

3-4-3 Installing LOGIQworks at the Site

3-4-3-1 Place the Parts ergonomically correct.

Tower PC
mounted on the floor

Figure 3-23 Work Station w/ Monitor, Keyboard, PC, Mouse

1.) Place the Monitor, Keyboard, Mouse, Peripherals, Desk and stool ergonomically correct and place the Tower Computer either on the floor below the desk or on the desk top. Some prefer the computer topside while others prefer it down below.

3-4-3-2 Single LCD Monitor Installation of System based on Dell Precision 340

Items needed:

Figure 3-24 Items needed for Single LCD Monitor Installation of System based on Dell Precision 340

3-4-3-2 Single LCD Monitor Installation of System based on Dell Precision 340 (cont'd)

Table 3-28 Items needed for Single LCD Monitor Installation

Item	Name	Qty
1	Dell Precision 340	1
2	Monitor NEC LCD 1880 Sx	1
3	Signal Cable digital	1
4	Y-Monitor Cable digital	1
5	Cat5 Patch cable	1
6	RA600 Dongle	1
7	Keyboard US Keyboard France Keyboard German Keyboard Italy Keyboard Spain	1
8	Optical USB Mouse	1
9	USB Hard Disk	1
10	Power Cord	2

3-4-3-3 Single LCD Monitor Installation of System based on Dell Precision 360 or on Dell Precision 370

Items needed:

Figure 3-25 Items needed for Single LCD Monitor Installation of System based on Dell Precision 360 or on Dell Precision 370

3-4-3-3 Single LCD Monitor Installation of System based on Dell Precision 360 or on Dell Precision 370 (cont'd)

Table 3-29 Items needed for Single LCD Monitor Installation

Item	Name	Qty
1	Dell Precision 360 or Dell Precision 370	1
2	Monitor Dell LCD 1901 or LDCD 2001	1
3	Signal Cable digital	1
4	Cat5 Patch cable	1
5	Keyboard US Keyboard France Keyboard German Keyboard Italy Keyboard Spain	1
6	Optical USB Mouse	1
7	USB Hard Disk	1
8	Power Cord	2
9	Software Option Dongle	1
10	RA600 Dongle	1
11	Y-Monitor Cable (DELL 370 only)	1

3-4-3-4 Single LCD Monitor Installation of System based on Dell Precision 380 and Dell Precision 390

Items needed:

Figure 3-26 Items needed for Single LCD Monitor Installation of System based on Dell Precision 380 and Dell Precision 390

3-4-3-4 Single LCD Monitor Installation of System based on Dell Precision 380 and Dell Precision 390 (cont'd)

Table 3-30 Items needed for Single LCD Monitor Installation

Item	Name	Qty
1	Dell Precision 380/Dell Precision 390	1
2	Monitor Dell LCD 1901 or LDCD 2001	1
3	Signal Cable digital	1
4	Cat5 Patch cable	1
5	Keyboard US Keyboard France Keyboard German Keyboard Italy Keyboard Spain	1
6	Optical USB Mouse	1
7	USB Hard Disk	1
8	Power Cord	2
9	Software Option Dongle	1
10	RA600 Dongle (not used if permanent License is installed)	1
11	Y-Monitor Cable	1

3-4-3-5 Double LCD Monitor Installation of System based on Dell Precision 340

Figure 3-27 Items needed for Double LCD Monitor Installation of System based on Dell Precision 340

3-4-3-5 Double LCD Monitor Installation of System based on Dell Precision 340 (cont'd)

Table 3-31 Double LCD Monitor Installation

Item	Name	Qty
1	Dell Precision 340	1
2	Monitor NEC LCD 1880 Sx	2
3	Signal Cable digital	2
4	Y-Monitor Cable digital	1
5	Cat5 Patch cable	1
6	RA600 Dongle	1
7	Keyboard US Keyboard France Keyboard German Keyboard Italy Keyboard Spain	1
8	Optical USB Mouse	1
9	USB Hard Disk	1
10	Power Cord	3

3-4-3-6 Double LCD Monitor Installation of System based on Dell Precision 360 or on Dell Precision 370

Figure 3-28 Items needed for Double LCD Monitor Installation of System based on Dell Precision 360 or Dell Precision 370

3-4-3-6 Double LCD Monitor Installation of System based on Dell Precision 360 or on Dell Precision 370 (cont'd)

Table 3-32 Items needed for Double LCD Monitor Installation

Item	Name	Qty
1	Dell Precision 360 or Dell Precision 370	1
2	Monitor Dell LCD 1901 or LCD 2001	2
3	Signal Cable digital	2
4	Cat5 Patch cable	1
5	Keyboard US Keyboard France Keyboard German Keyboard Italy Keyboard Spain	1
6	Optical USB Mouse	1
7	USB Hard Disk	1
8	Power Cord	3
9	Software Option Dongle	1
10	RA600 Dongle	1
11	Y-Monitor cable (DELL 360 only)	1

Table 3-33 Double LCD Monitor Installation of System based on Dell Precision 380 and Dell Precision 390

Figure 3-29 Items needed for Double LCD Monitor Installation of System based on Dell Precision 380 and Dell Precision 390

3-4-3-6 Double LCD Monitor Installation of System based on Dell Precision 360 or on Dell Precision 370 (cont'd)

Table 3-34 Items needed for Double LCD Monitor Installation

Item	Name	Qty
1	Dell Precision 380/Dell Precision 390	1
2	Monitor Dell LCD 1901 or LCD 2001	2
3	Signal Cable digital	2
4	Cat5 Patch cable	1
5	Keyboard US Keyboard France Keyboard German Keyboard Italy Keyboard Spain	1
6	Optical USB Mouse	1
7	USB Hard Disk	1
8	Power Cord	3
9	Software Option Dongle	1
10	RA600 Dongle	1
11	Y-Monitor cable	1

3-4-3-7 Single CRT Monitor Installation

Figure 3-30 Items for Single CRT Monitor Installation

3-4-3-7 Single CRT Monitor Installation (cont'd)

Table 3-35 Items for Single CRT Monitor Installation

Item	Name	Qty
1	Dell Precision 380/Dell Precision 390	1
2	Monitor Sony GDM F520	1
3	Signal Cable analog	1
4	Y-Monitor Cable analog	1
5	Cat5 Patch cable	1
6	RA600 Dongle	1
7	Keyboard US Keyboard France Keyboard German Keyboard Italy Keyboard Spain	1
8	Optical USB Mouse	1
9	USB Hard Disk	1
10	Power Cord	2

3-4-3-8 Double CRT Monitor Installation

Items needed:

Figure 3-31 Items needed for Double CRT Monitor Installation

3-4-3-8 Double CRT Monitor Installation (cont'd)

Table 3-36 Items for Double CRT Monitor Installation

Item	Name	Qty	Part Number
1	Dell Precision 340	1	2365947
2	Monitor Sony GDM F520	2	2365798
3	Signal Cable analog	2	2368273
4	Y-Monitor Cable analog	1	2368269
5	Cat5 Patch cable	1	2366640
6	RA600 Dongle	1	see Centricity RA600 Service Manual - Renewal Parts chapter 10, page 269
7	Keyboard US Keyboard France Keyboard German Keyboard Italy Keyboard Spain	1	236635 2369714 2369631 2369725 2369730
8	Optical USB Mouse	1	2366634
9	USB Hard Disk	1	2365958
10	Power Cord	3	see Table 3-22

3-4-3-9 Connections at rear of PC of System based on Dell Precision 340

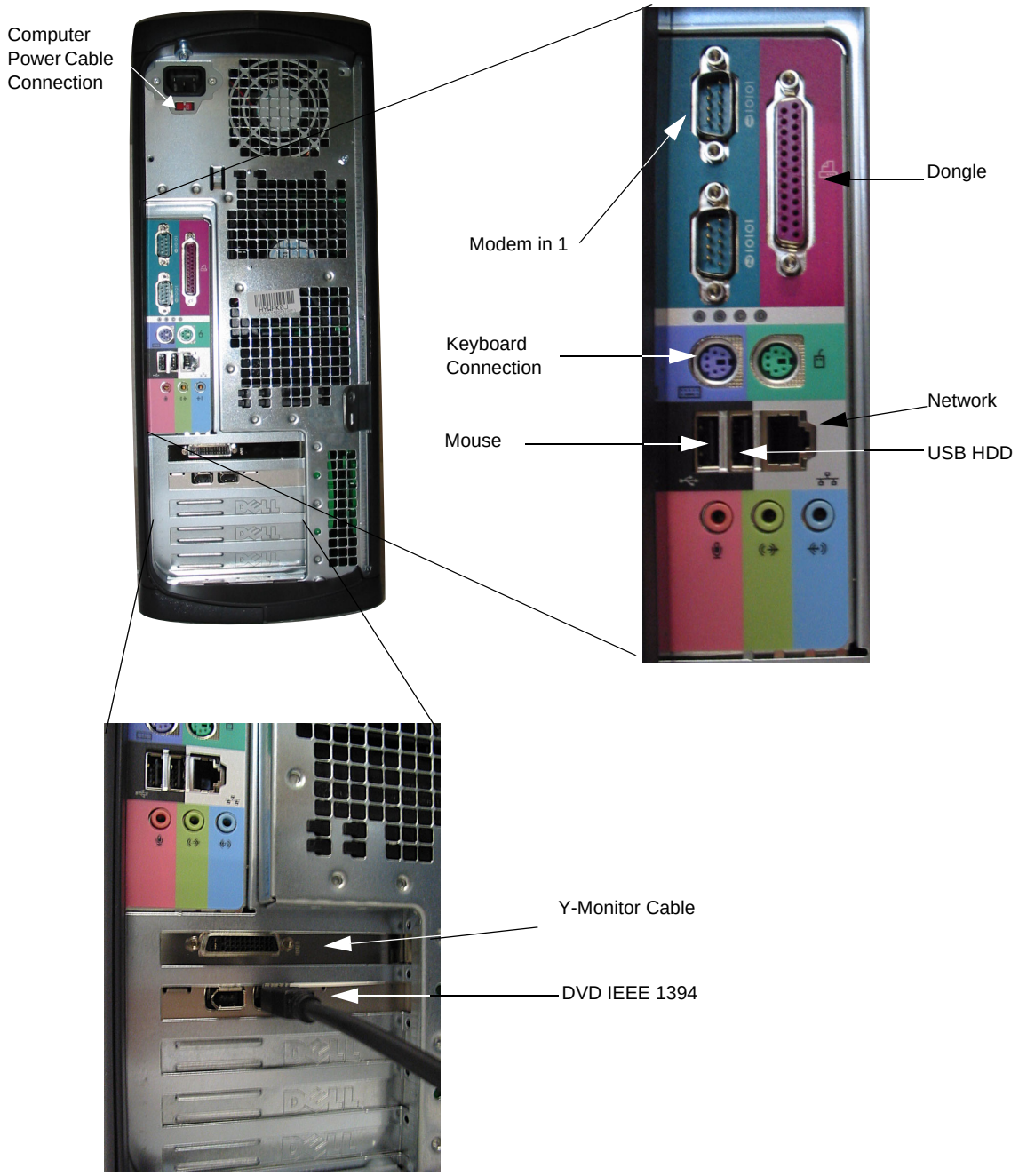


Figure 3-32 Connections at rear of PC of System based on Dell Precision 340

3-4-3-10 Mouse and USB Harddisk Connection of Dell Precision 360

1.) Connect the Mouse to one of the USB Connectors.
2.) Connect the USB Harddisk to the other USB Connector.
3.) Connect the USB Software Option Dongle.
4.) Connect the parallel RA600 Dongle.

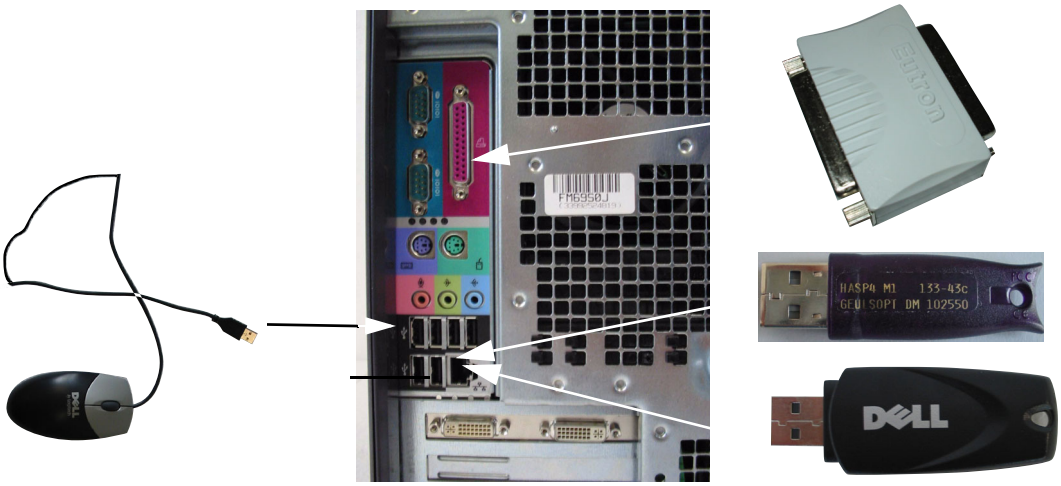


Figure 3-33 Mouse and PC Rear

3-4-3-11 Keyboard and Network Connection of Dell Precision 360

1.) Connect PS2 Cable from the keyboard, that has a red plug, to the left hand PS2 Connector at the rear of the PC.
2.) Connect the patch cable with the network connector at the rear of the PC and the wall network outlet.

3-4-3-11 Keyboard and Network Connection of Dell Precision 360 (cont'd)

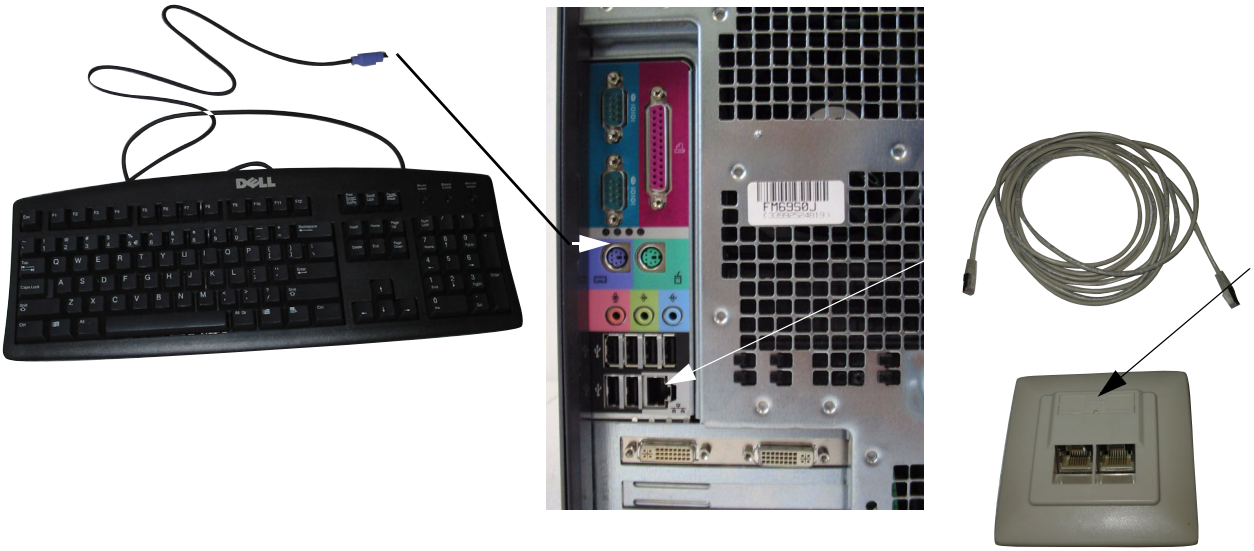


Figure 3-34 Keyboard and PC Rear.

3-4-3-12 Connections at Rear of PC of System based on Dell Precision 370

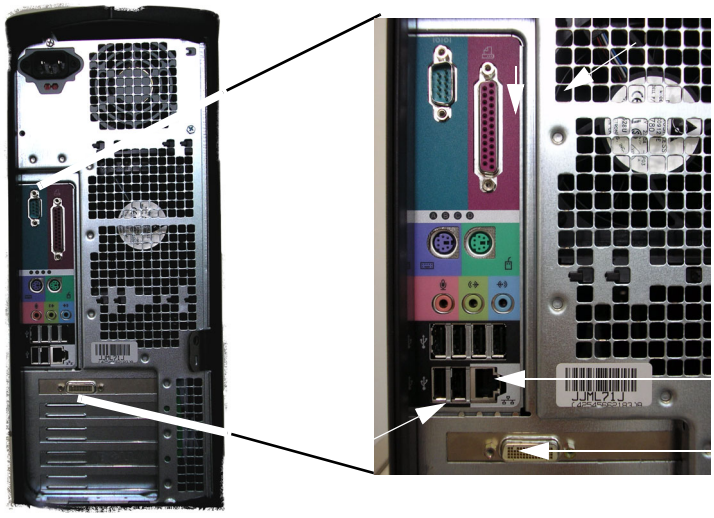


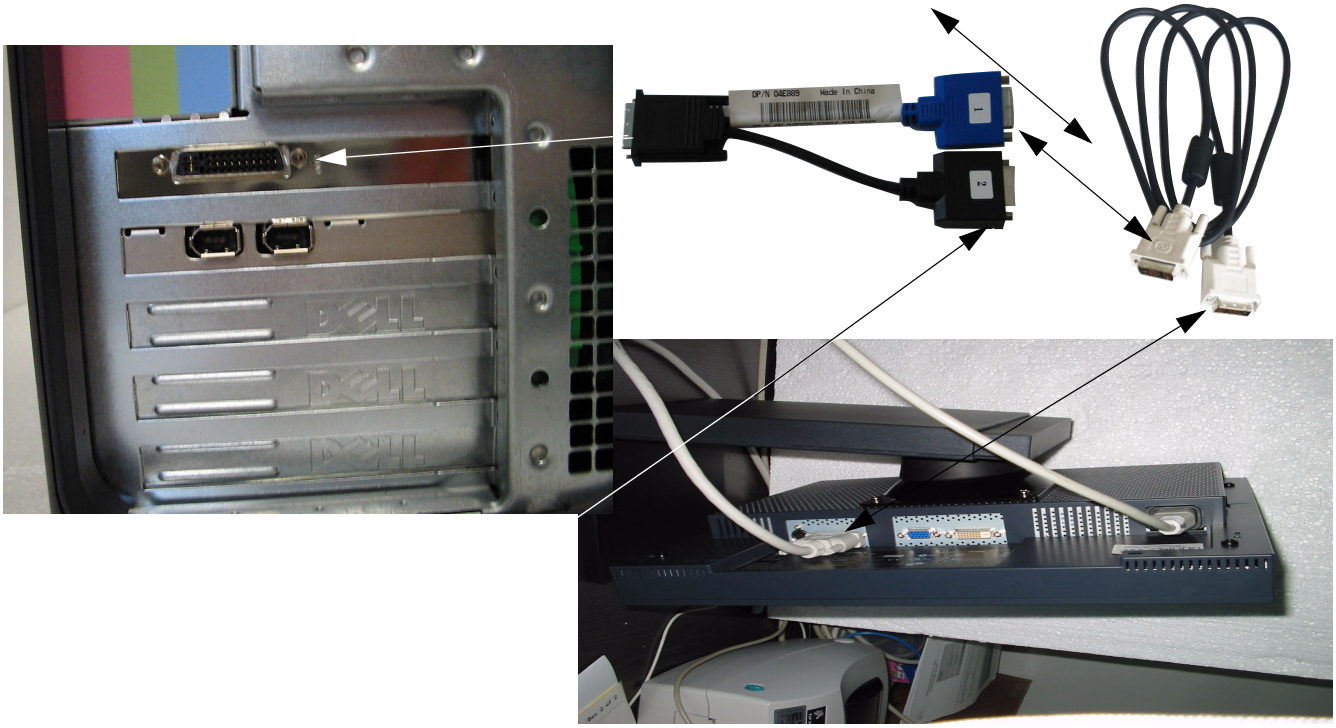
Figure 3-35 Connections at rear of PC of System based on Dell Precision 370

3-4-3-13 Monitor Connections of System based on Dell Precision 340

Figure 3-36 LCD Monitor Power Connection

1.) Connect the Monitor Power Cable to the rear of the Monitor.
2.) Connect the other end to a Wall Power Outlet.
3.) Connect the Y-Monitor Signal Cable to the display Card Socket at the rear of the PC.
4.) Connect the Monitor Signal Cable to the Y-Monitor Cable tagged with 1.
5.) Connect the other end to the digital Monitor Signal input1 as shown in the picture.
6.) In case of dual Monitor installation connect the second Monitor to the Y-cable tagged with 2

.3-4-3-13 Monitor Connections of System based on Dell Precision 340 (cont'd)



LCD Rear

Figure 3-37 PC and LCD Rear

3-4-3-14 Monitor Connection

1.) Connect the Monitor Power Cable to the rear of the Monitor.
2.) Connect the other end to a Wall Power Outlet.

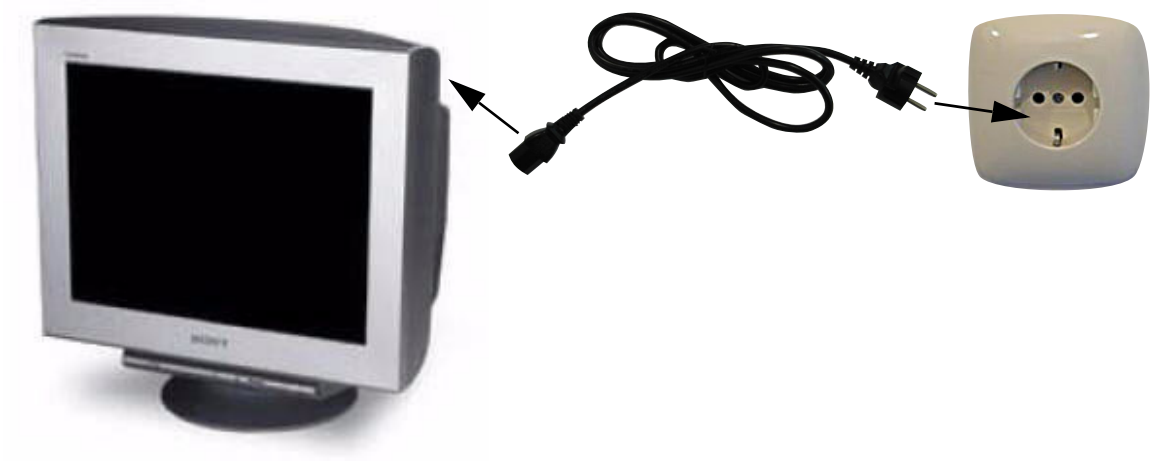


Figure 3-38 CRT Monitor power connection

3.) Connect the Y-Monitor Signal Cable to the display Card Socket at the rear of the PC.
4.) Connect the Monitor Signal Cable to the Y-Monitor Cable tagged with 1.
5.) Connect the other end to one of the analog Monitor Signal inputs.
6.) In case of dual Monitor installation connect the second Monitor to the Y-cable tagged with 2.

Figure 3-39 PC and CRT Rear

3-4-3-15 Monitor Connections of System based on Dell Precision 360

1.) Connect the Monitor Power Cable to the rear of the Monitor.
2.) Connect the other end to a Wall Power Outlet.

Rear of LCD Monitor

Figure 3-40 LCD Monitor Power Connection

3-4-3-15 Monitor Connections of System based on Dell Precision 360 (cont'd)

3.) Connect the Y-Monitor Signal Cable to the display Card Socket at the rear of the PC.

4.) Connect the other end to the digital Monitor Signal input1 as shown in the picture.

5.) In case of dual Monitor installation connect the second Monitor to the Y-cable tagged with 2.

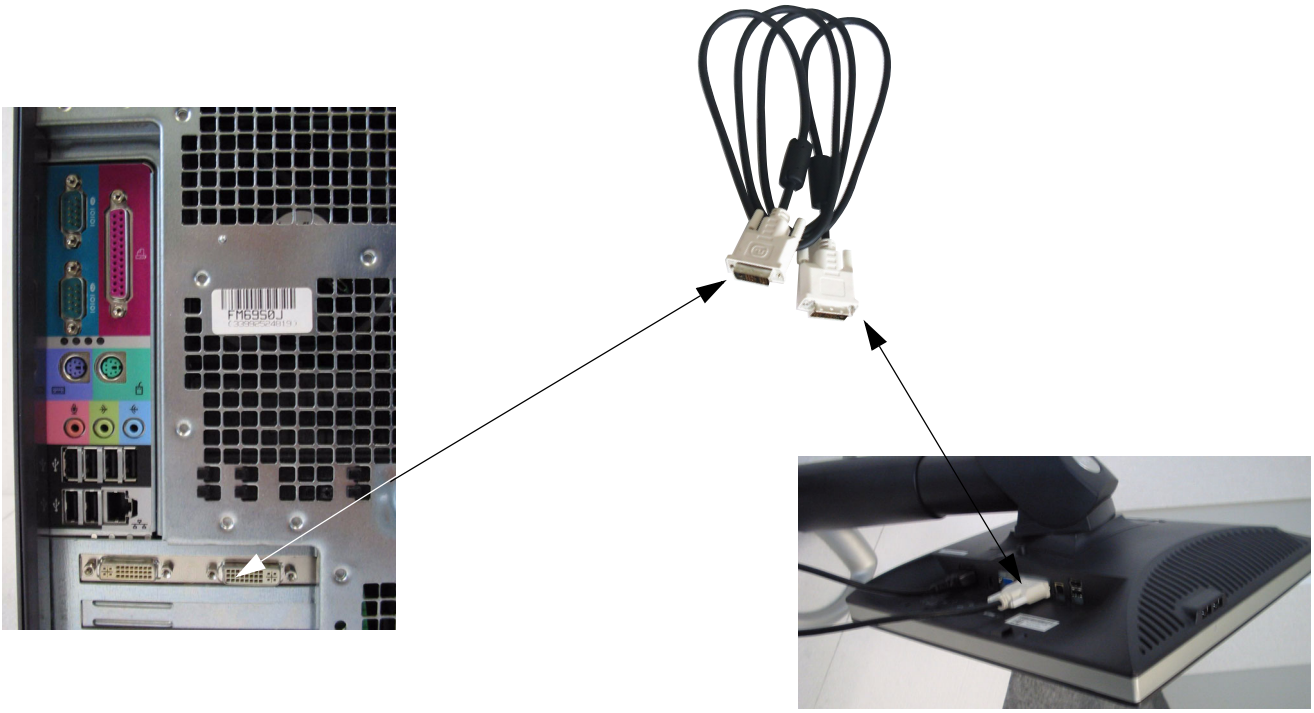
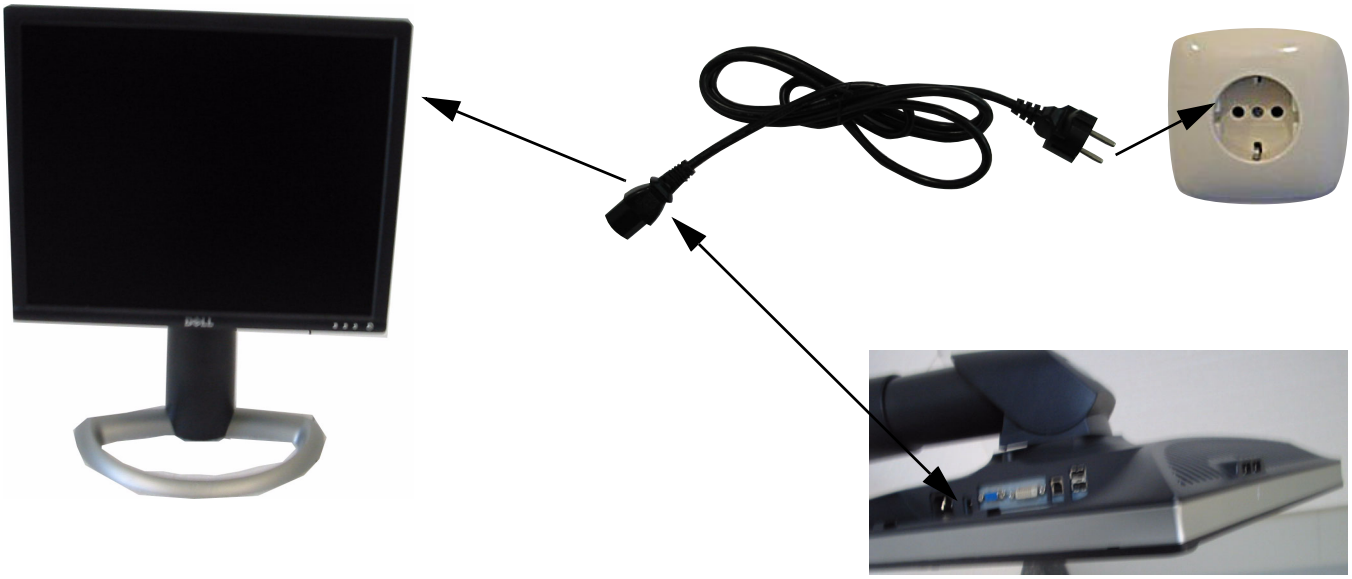


Figure 3-41 PC and LCD Rear

3-4-3-16 Monitor Connections of System based on Dell Precision 370

1.) Connect the Monitor Power Cable to the rear of the Monitor.
2.) Connect the other end to a Wall Power Outlet.



Rear of LCD Monitor

Figure 3-42 LCD Monitor Power Connection

3.) Connect the Y-Monitor Signal Cable to the display Card Socket at the rear of the PC.
4.) Connect the Monitor Signal Cable to the Y-Monitor Cable tagged with 1.
5.) Connect the other end to the digital Monitor Signal Input 1 as shown in the picture.

3-4-3-16 Monitor Connections of System based on Dell Precision 370 (cont'd)

6.) In case of dual Monitor installation connect the second Monitor to the Y-cable tagged with 2.

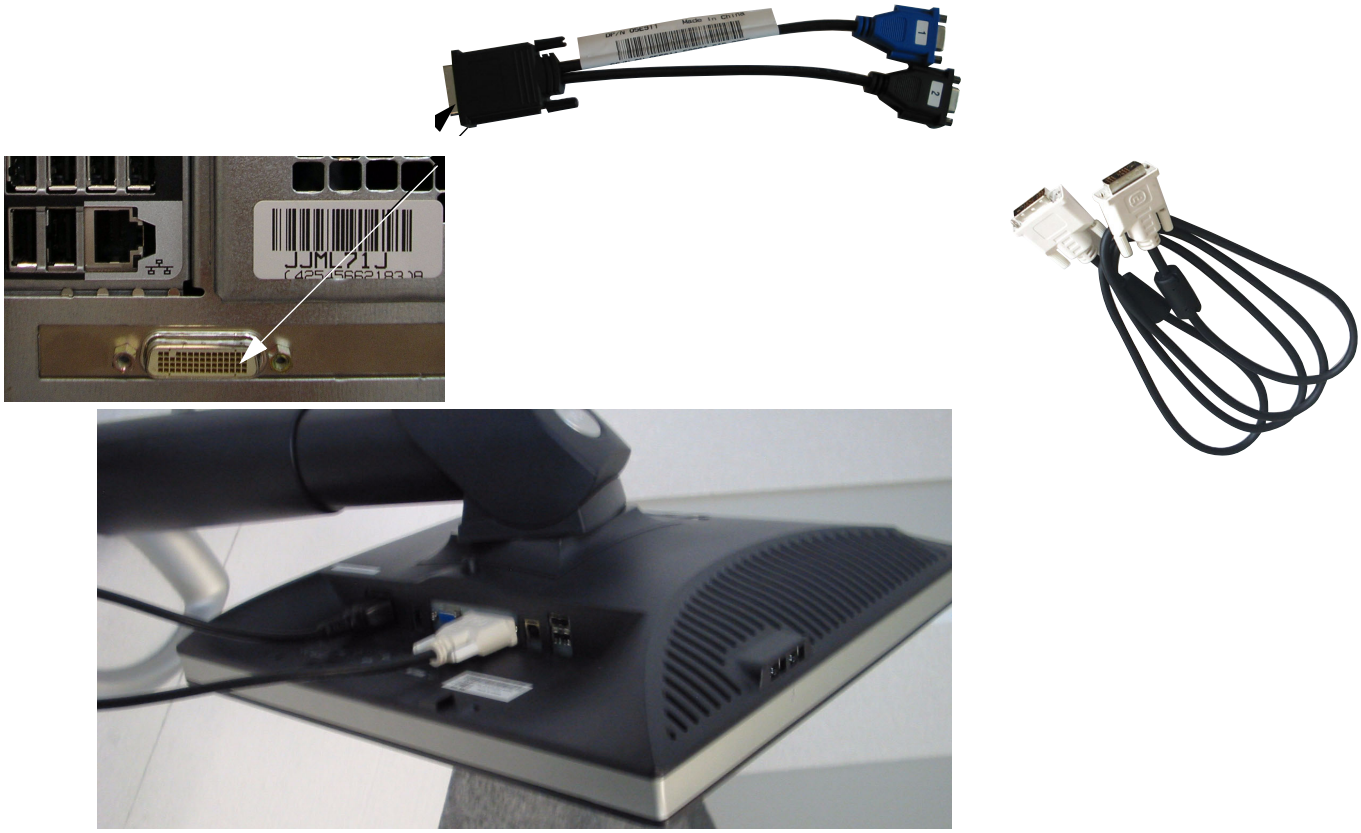


Figure 3-43 PC and LCD Rear

3-4-3-17 PC Connections

1.) Connect the female end of the PC Power Cable to the Power Socket on the PC and the other end to a wall Power Outlet.

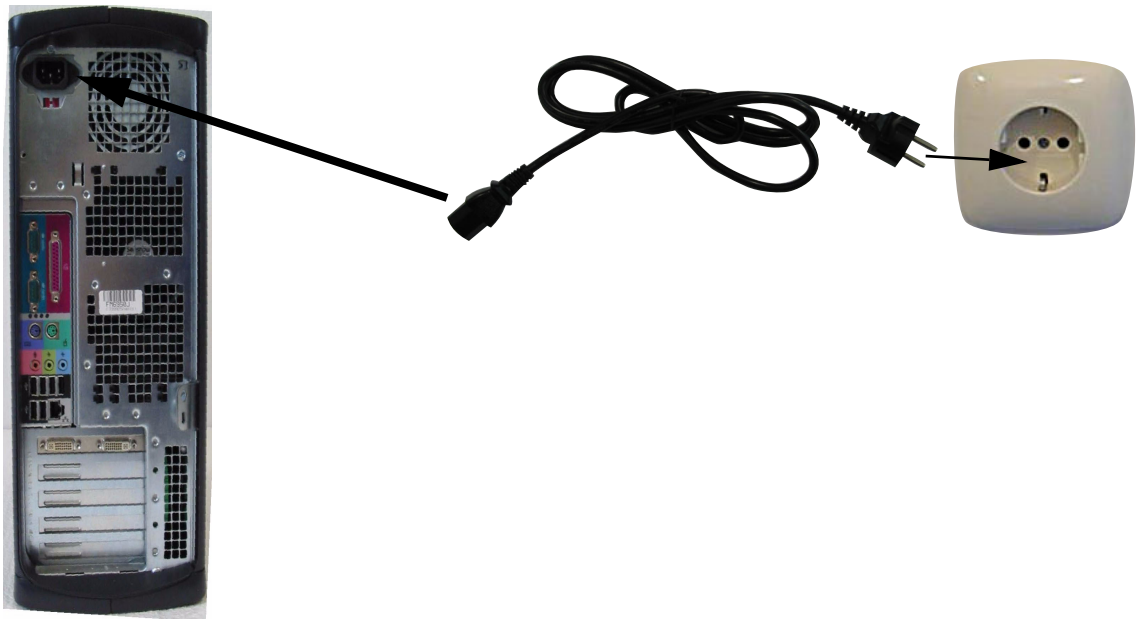


Figure 3-44 Signal and Power connections between PC rear and Power Outlet

3-4-3-18 Global Modem Connections

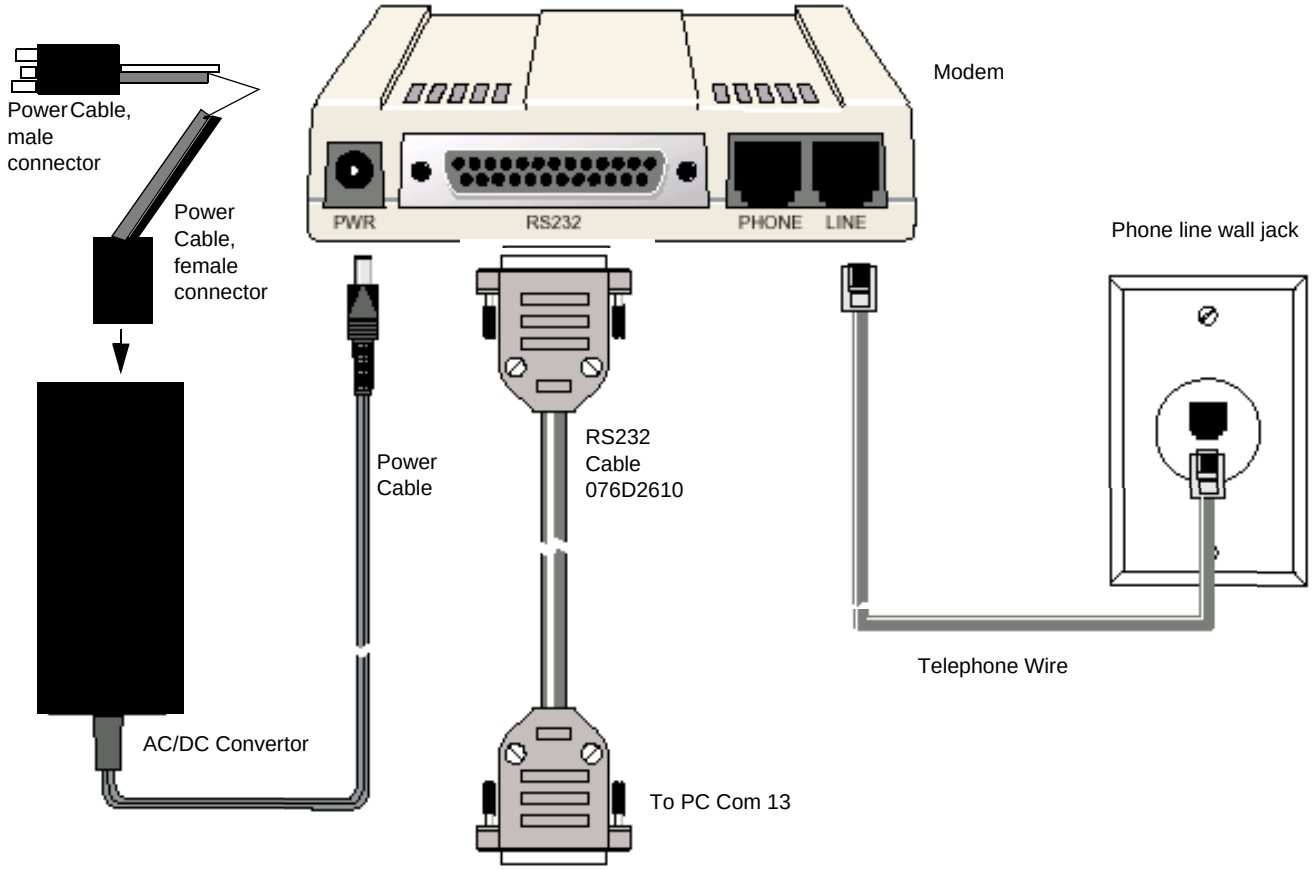


Figure 3-45 Global Modem Signal and Power connections for Dell Precision 340

1.) To do Modem RS232 Connection, plug one end of the RS232 cable into the RS232 connector on the modem, and the other end into a serial port connector on your computer, Port 1.

2.) To do Modem Line Connection, plug one end of the telephone wire into the modem's LINE jack, and the other end into a phone line wall jack.

NOTE *The modem delivery includes a large set of global telephone standards adapters for the telephone wire.*

NOTE *The LINE jack is not interchangeable with the PHONE jack. Do not plug the phone into the LINE jack or the line cable into the PHONE jack.*

3.) To do Modem Power Connection:

a.) Plug the female end of the Power Cable into the AC/DC Convertor and the male end into a vacant AC power outlet on the wall.

CAUTION *Use only the AC/DC power supply supplied with the modem. Use of any other AC/DC power supply will void the warranty and could damage the modem.*

b.) Plug the AC/DC convertor cable into the PWR jack on the modem.

3-4-3-18 Global Modem Connections (cont'd)

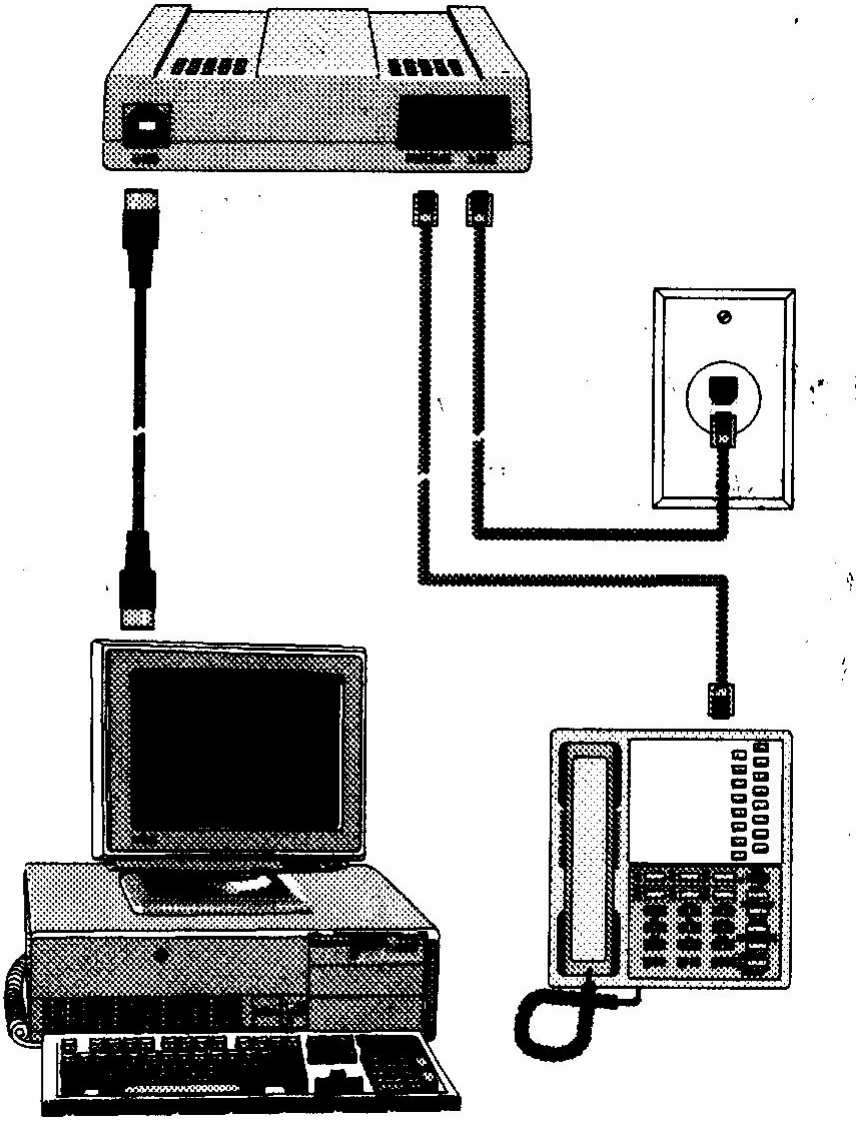


Figure 3-46 Global Modem Signal Connection for Dell Precision 360, Dell Precision 370, Dell Precision 380 or Dell Precision 390

3-4-4 Power On / Boot Up

Table 3-37 Bootup

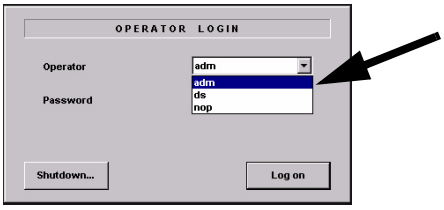
Step	Check	Expected Result
1	Turn ON the Power switch 	Drag down the menu 
2	Administrator/Admin: Password should be changed after first use	On the appearing dialog type: - lwuser Password:- lw

Table 3-38 Pre defined User

Username	Password	Permission
lwuser	lw	restricted
Administrator	admin	Administrator

3-4-5 Third Party Products

The third party product Nero Burning ROM needs to be installed from the vendor setup CDs. Please use the default installation settings. They are no longer part of the default system configuration.

3-4-6 Initialize Service Platform for LOGIQworks up to Version 2.0

The Checkout process initiates a communication between the customer and GE. Before you begin with the checkout you need to have an IP address to connect to the GE network.

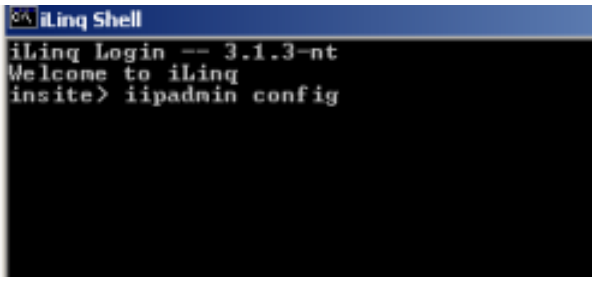
You can choose between two physical connection types the “Modem connection” or the “VPN connection”.

For a complete Checkout you have to prepare first the client (customer) PC. After the client PC is prepared you or somebody in the OLC can finish the checkout using the VOLC software.

To prepare the client PC you should know the GE InSite IP address.

To finish the Checkout using VOLC you need to know the Service SystemID, which can be derived from the Manufacturing System number (See “Recovery CD Label with Rating Plate Label” on page 18.) in the following way: Service SystemID = Dell Service Tag.

1.) Go to iLingqShell on the desktop and click the button  .
2.) To start “InSite Interactive Platform Configuration” type in the following lines:



3.) Wait for the application to come up.
4.) Click 3 times “accept” at the start screen.
5.) Select the “Device connection” tab.

3-4-6 Initialize Service Platform for LOGIQworks up to Version 2.0 (cont'd)

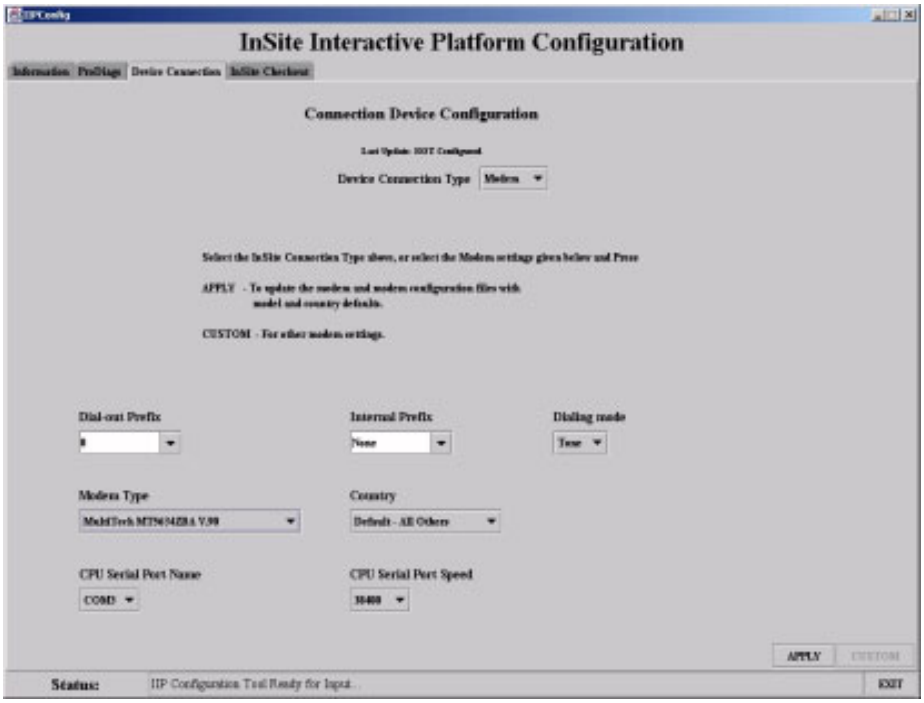


Figure 3-47 Configuring the "Device connection" tab

3-4-6-1 Modem Configuration

6.) Select "Modem" as device connection type.

7.) Select one of the following items corresponding to your telephone connection:

- Dial out prefix
- Internal prefix
- COM3 serial port
- Dialing Mode
- Modem Type "MultiTech MT5634 ZBA V.90"
- CPU Serial Port Speed 38400
- Country

8.) Click "Apply". The "Location Information" window pops up.

9.) Enter the appropriate information and click "OK".

10.) Click "OK" to the system message.

3-4-6-1 Modem Configuration (cont'd)

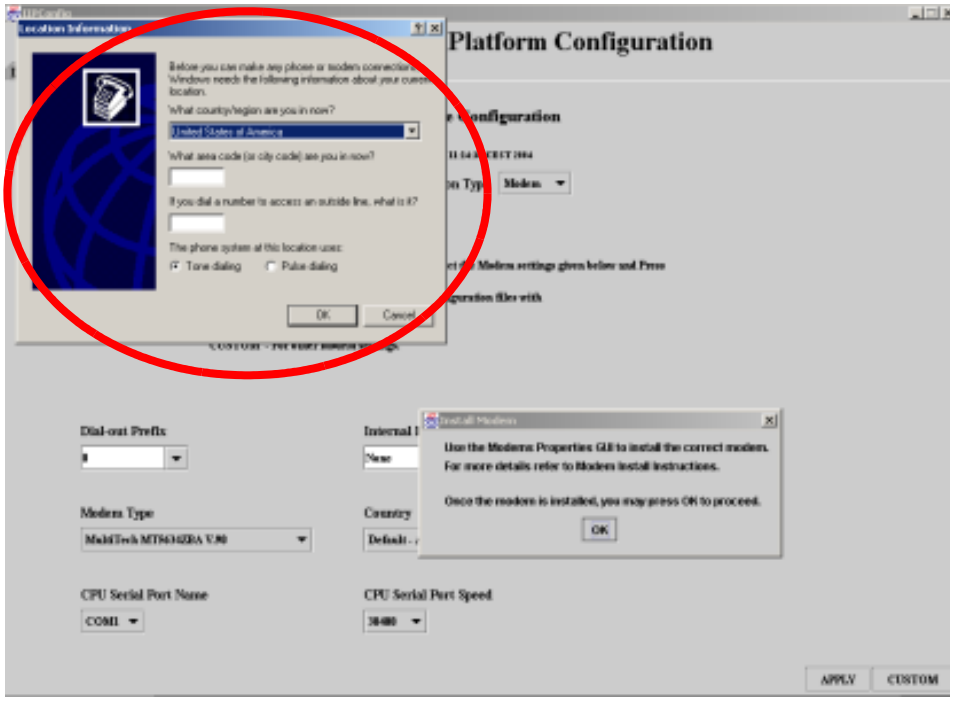


Figure 3-48 The "Location Information" window

11.) The "Phone and Modem Options" window pops up. Click on "Remove" and then "Add".

12.) Follow the instructions of the "Add/Remove Hardware Wizard".

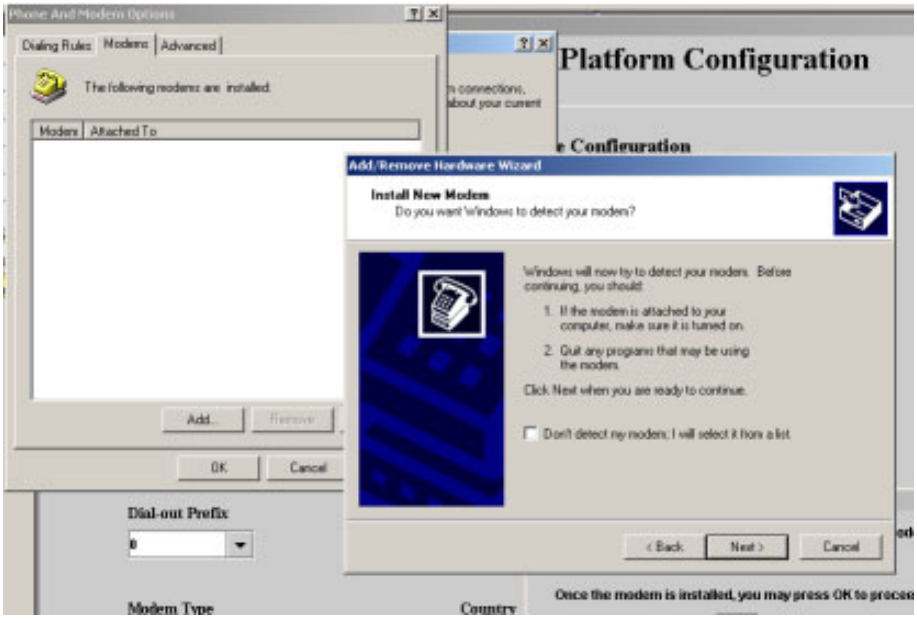


Figure 3-49 The Add/Remove Hardware Wizard

13.) Click "Next" to start the installation process. Wait until the "Finish" button pops up and click it. The modem is installed.

3-4-6-1 Modem Configuration (cont'd)

14.) The "Install Modem" system message pops up. Quit with "OK".

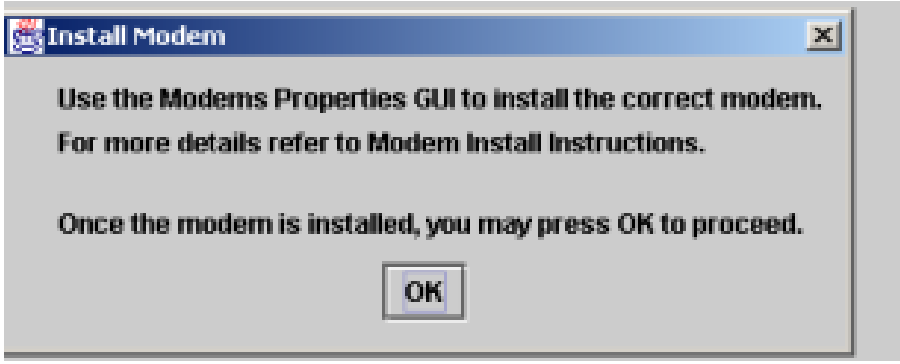


Figure 3-50 The "Install Modem" system message

15.) Click on the "InSite Checkout" tab.

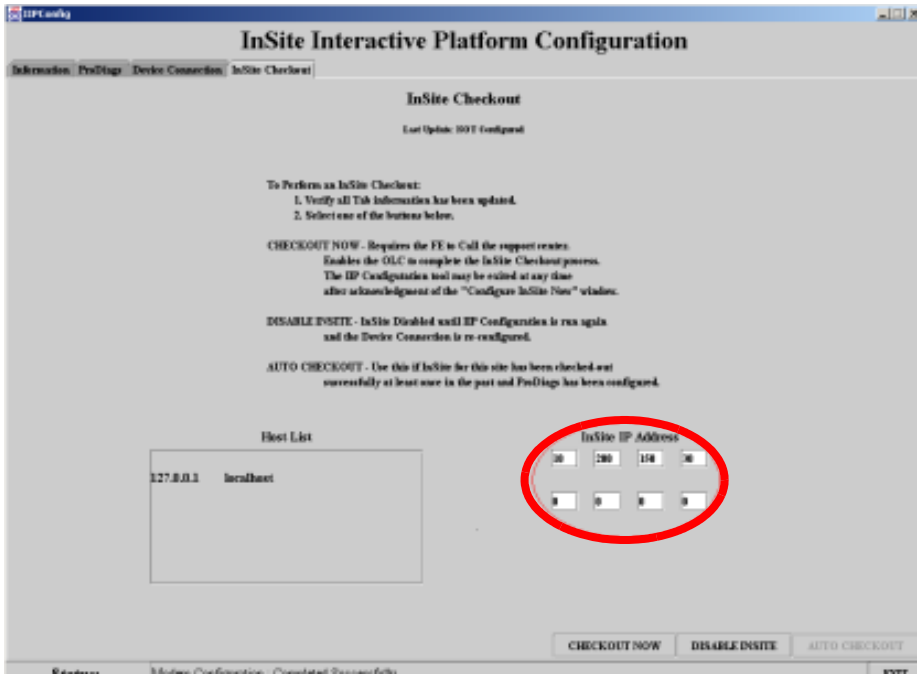


Figure 3-51 The "Insite Checkout" tab

16.) Enter the correct GE InSite IP address.

17.) Click "Checkout now" and reboot the system. The PC is ready for OLC checkout now.

3-4-6-2 VPN Configuration

1.) Open the "InSite Interactive Platform Configuration". See Initialize Service Platform for LOGIQworks up to Version 2.0 on page 3-62.

3-4-6-2 VPN Configuration (cont'd)

Figure 3-52 The InSite Interactive Platform Configuration" window

2.) Select "network" on the "Device Connection Type" field.
3.) Enter the local gateway IP address.
4.) Click "Apply".
5.) Select the "InSite Checkout" tab.
6.) Click "Checkout Now". The PC is ready for OLC checkout.

3-4-7 Initialize Service Platform for LOGIQworks 3.0

For Installation Inside II see Technical Publication, Installation Manual: InSite II ViewPoint/LOGIQworks (Direction 5181936-100).

3-4-8 Filling out and sending the Product Locator Card

To finish the installation procedure the product locator card has to be filled out and send to the given address.

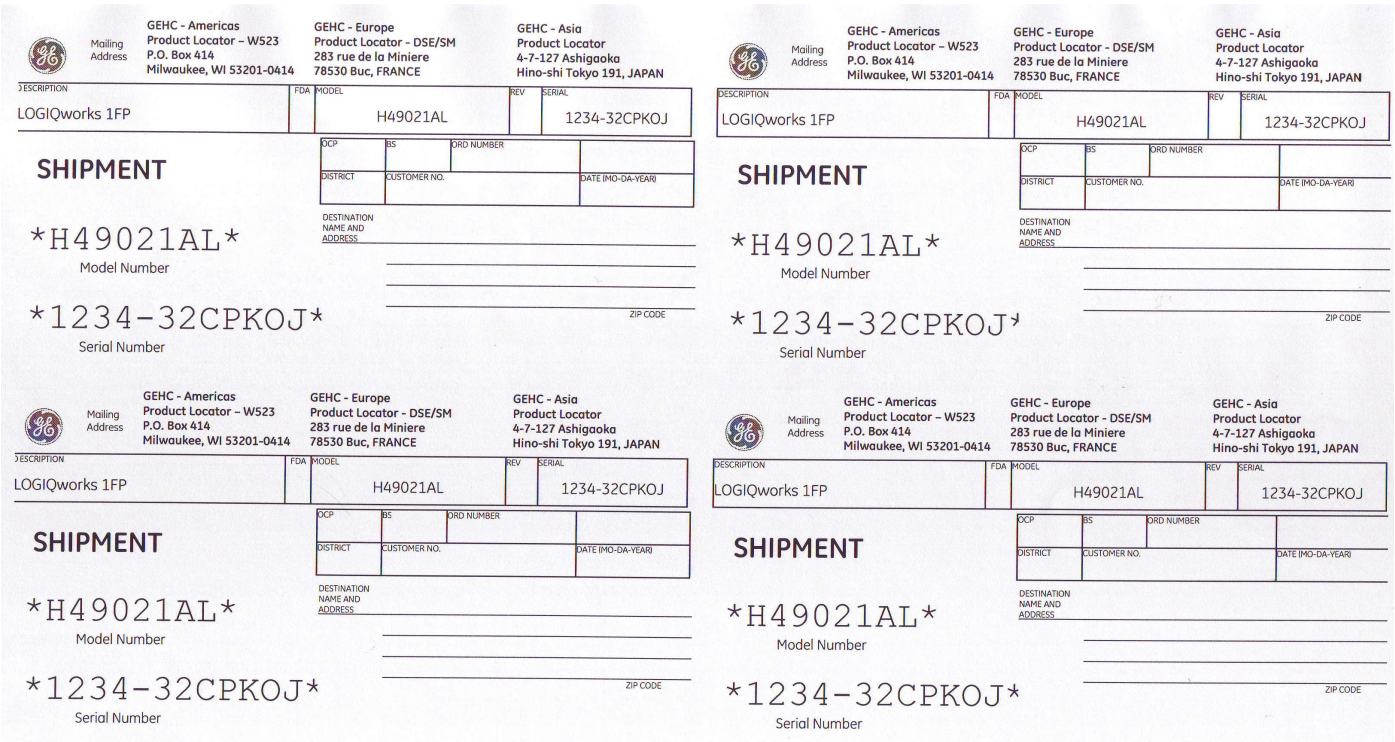


Figure 3-53 Product Locator Card

Section 3-5
Configuration

This chapter provides you with information on how to configure your LOGIQworks at an operating system and application level.

When you receive your LOGIQworks system all these configuration settings are already pre configured according to the information you provided with the Data Collection Document (please refer to Section "Recommendation: A permanent broadband to the internet. The customer is responsible for the connectivity, configuration and operation of this internet access funktionality." on page 2-14.

Please verify that all of these settings are correct.

3-5-1 Windows level configuration

3-5-1-1 Set System Time

1.) From Windows, right **click on the clock** located on the task bar.

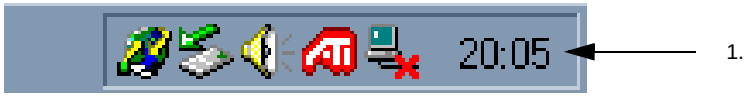


Figure 3-54 Windows Task bar

2.) Select the **Adjust Date/Time** menu option.

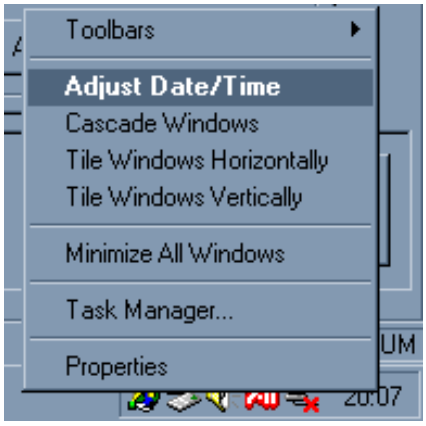


Figure 3-55 Windows Task bar - Date/Time-Adjustment

3.) Click the **Time Zone tab** and set appropriately.

3-5-1-1 Set System Time (cont'd)

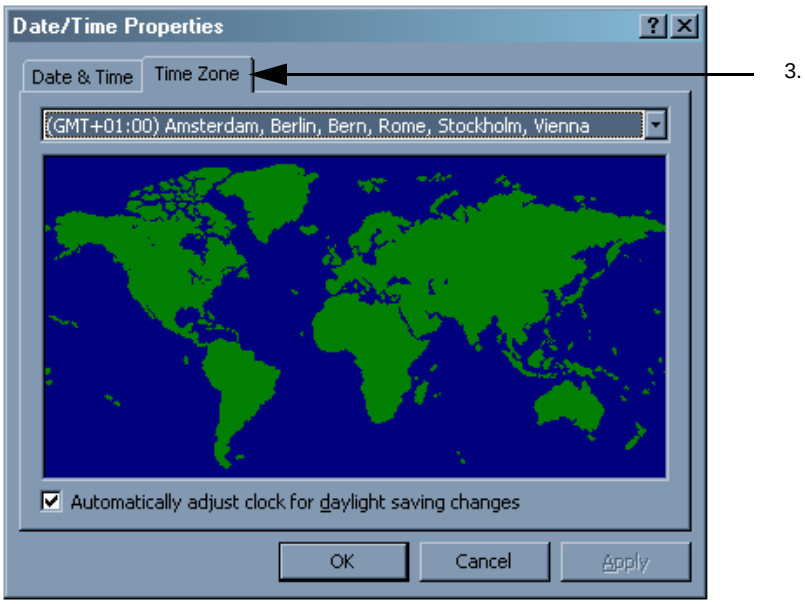


Figure 3-56 Windows Time Zone-Table

4.) Click on OK.

5.) Select the **Date & Time tab** and set the time and date appropriately.

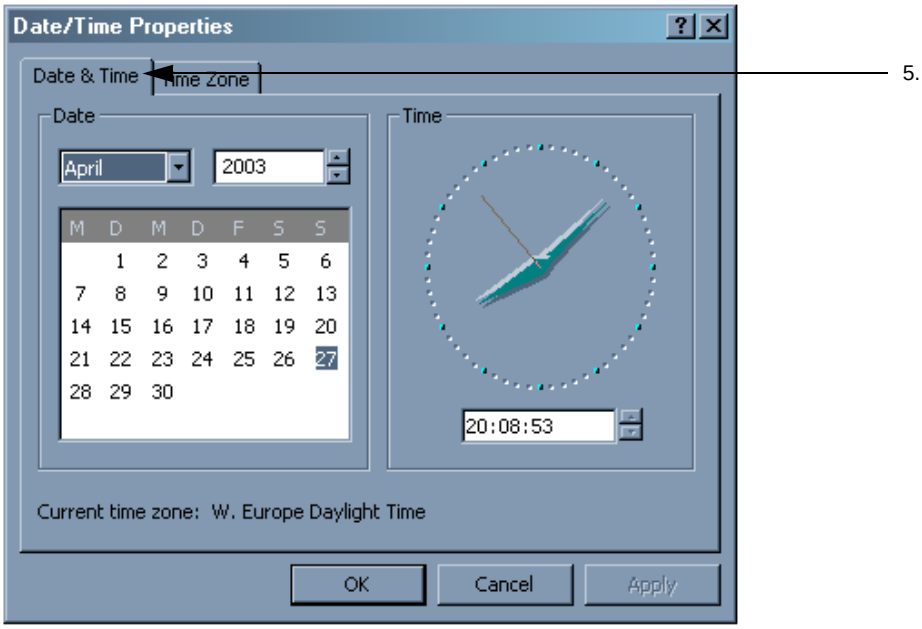


Figure 3-57 Windows Date & Time Table

6.) Click OK to apply the changes.

3-5-1-2 Select Units

To change the units of measurement use the Windows control panel.

Double click **Regional Options** in the Windows Control Panel.

Click the **Numbers tab** and select U.S. or Metric from the **Measurement System** drop down list. Then click OK.

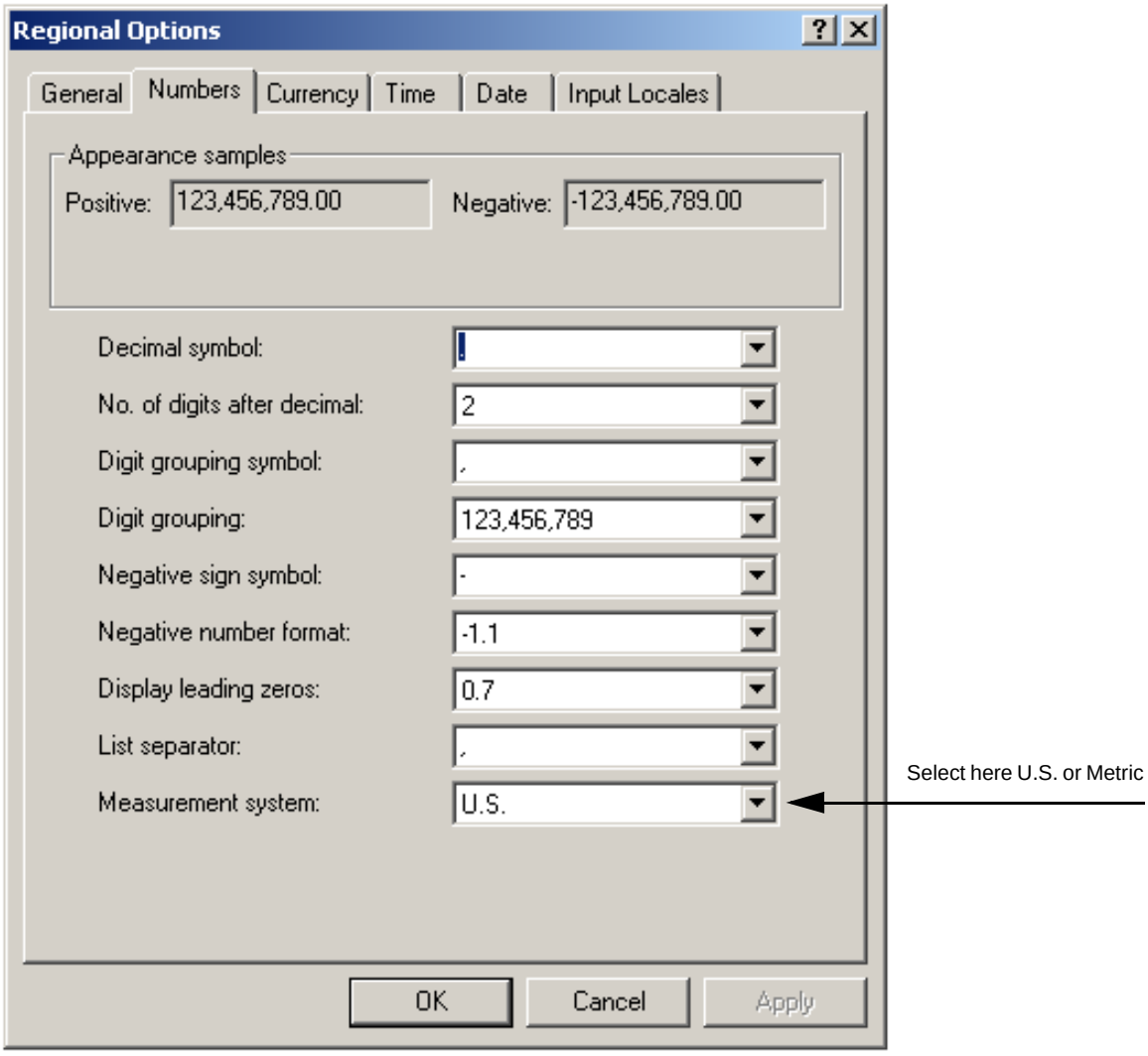


Figure 3-58 Windows Control Panel

If you wish to overrule Windows' Regional Settings you can select either Metric or U.S.from the drop down list in the LOGIQworks Generic Properties page (see Section 3-5-2-5 "System Properties").

3-5-1-3 Monitor Setup

1.) Select **Control Panel** from the Windows Start Menu.
2.) Select **Display**, the Display Properties page opens.
3.) Select the **Settings** tab and click **Advanced...**

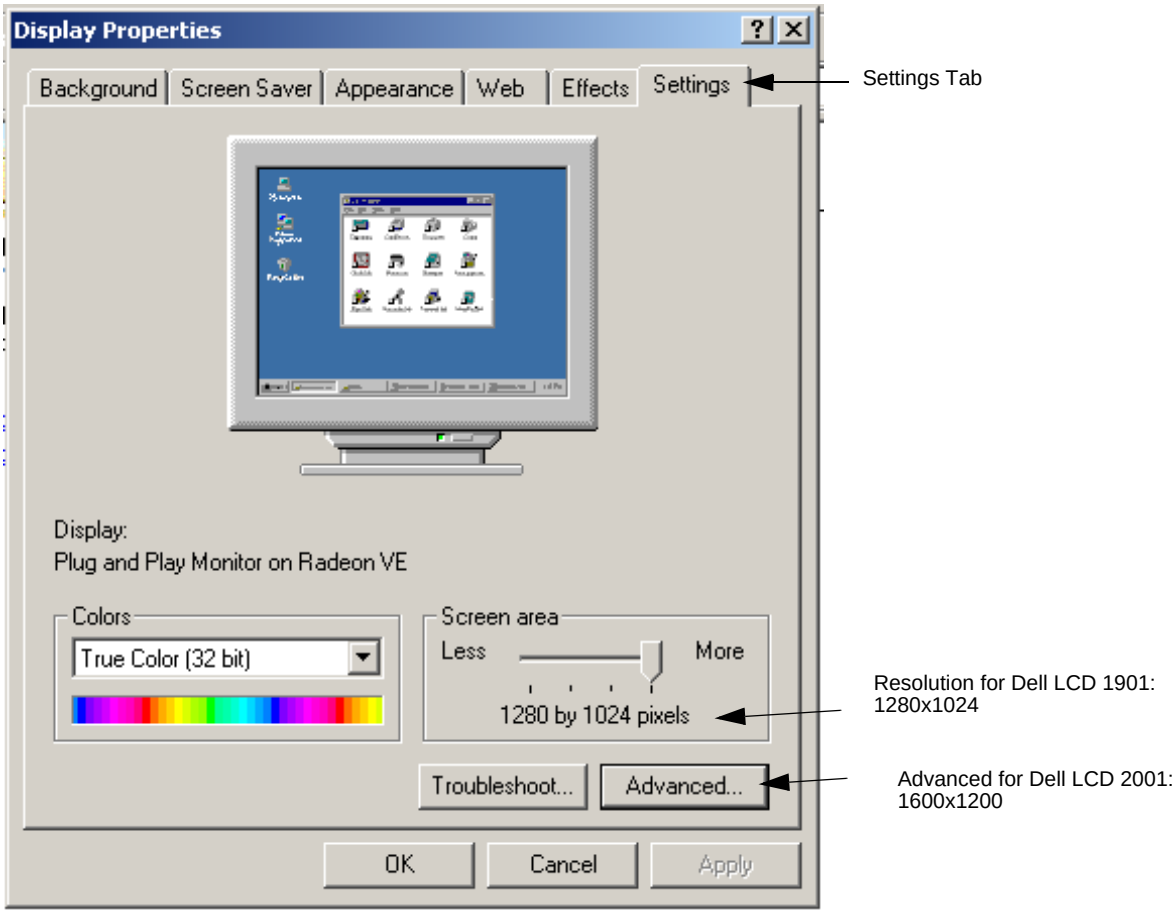


Figure 3-59 Windows Display Properties

Set up your system for single monitor use:

On the ATI Displays Tab only one monitor is available. You don't need to apply any changes, the system automatically detects the number of monitors connected.

3-5-1-3-1 Monitor Setup based on Dell 340

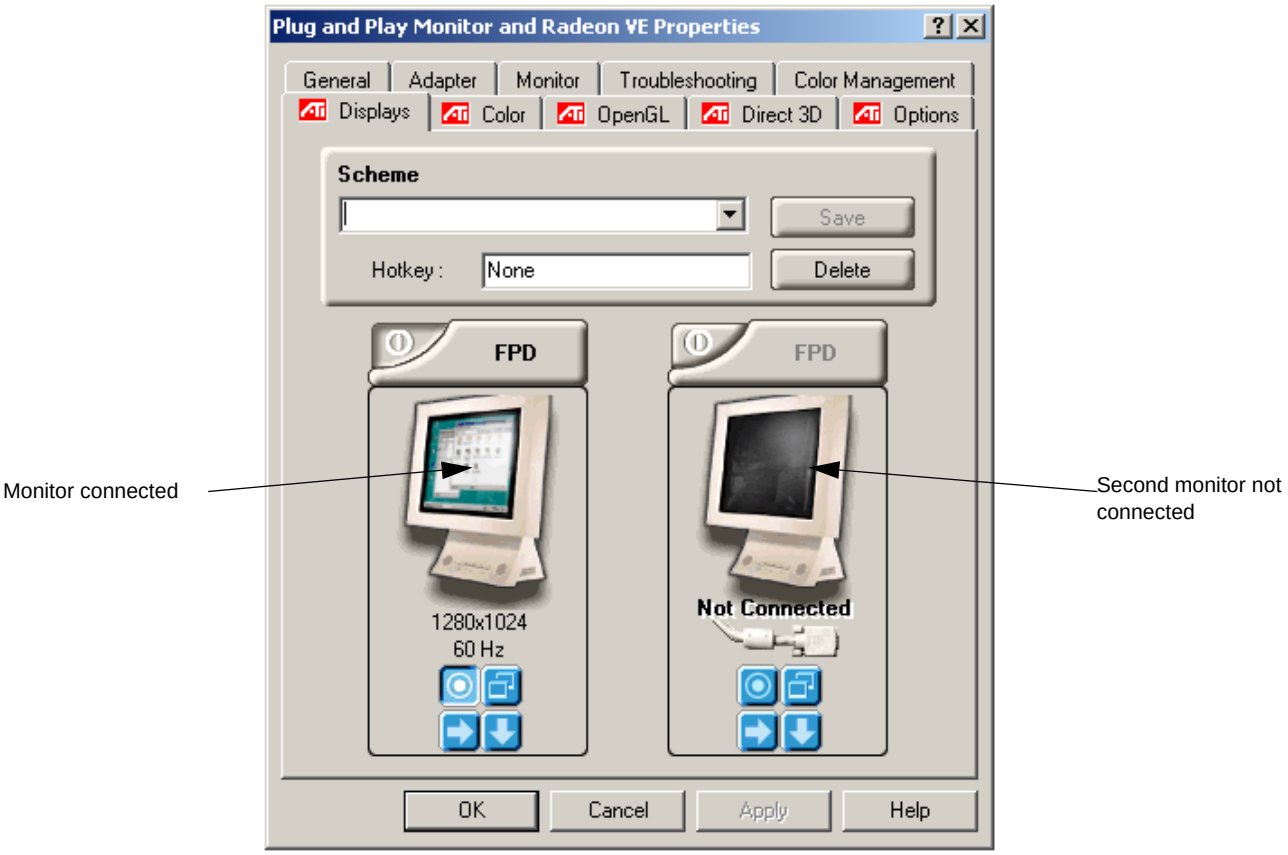


Figure 3-60 ATI Radeon Display Properties - Dual Monitor

Set up your system for dual monitor use:

4.) On the ATI Displays Tab make sure that both monitors are checked and activated (green light shows activation).

3-5-1-3 Monitor Setup (cont'd)

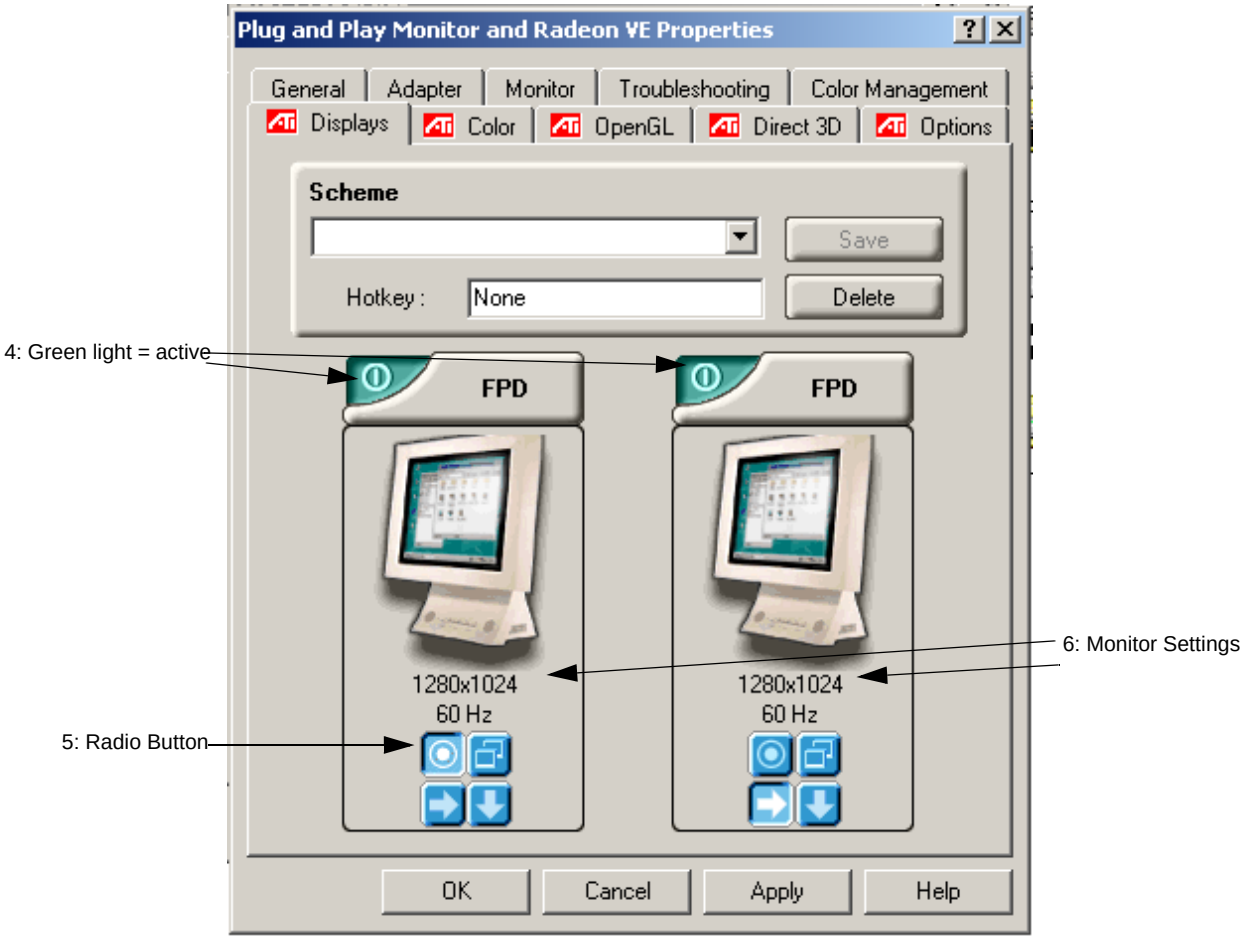


Figure 3-61 ATI Radeon Display Properties - Dual Monitor

5.) Select the radio button for the left monitor. For the right monitor select the  to create an extended desktop to the right. (Do **<u>not</u>** use the clone button )

6.) The resolution for both monitors shall be identical for both monitors.

7.) Exit each dialog by pressing the **OK** button.

3-5-1-3-2 Set up your system for true dual graphic card use (based on Dell 360)

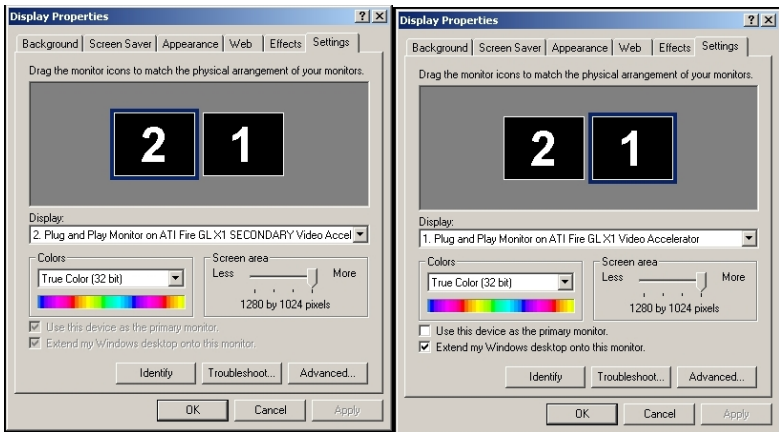


Figure 3-62 Dual Monitor Configuration for True Dual Graphic Card

Figure 3-63 Dual Monitor connection for ATI True Dual Graphic Card

3-5-1-3 Monitor Setup (cont'd)

Figure 3-64 Dual Monitor connection for Dell Precision 370

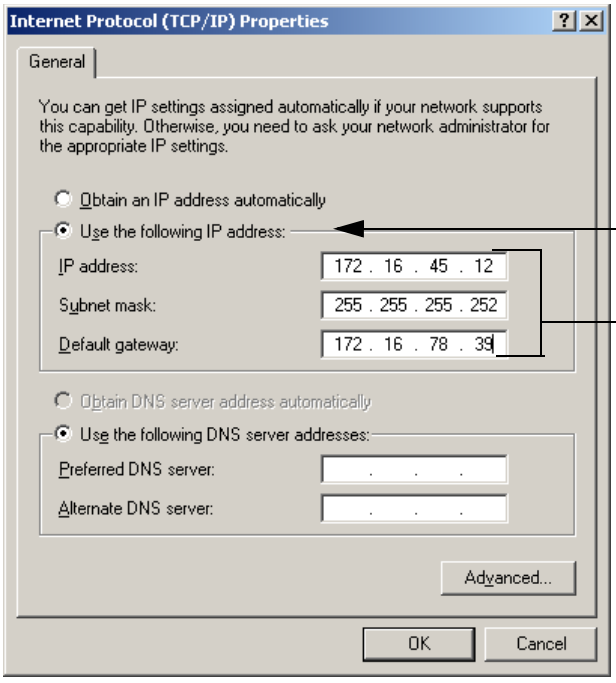
3-5-1-4 Configure TCP/IP Settings

Connect your LOGIQworks system to the network.

To achieve communication between Scanner and LOGIQworks the following steps must be completed successfully.

Configure the TCP/IP settings using the Windows Control Panel:

If not already configured according to the information you provided with the Data Collection Document (see chapter) or in case of configuration changes enter the correct data in the fields described in the figure below.



You need to ask your network administrator for the appropriate settings.

Type in:

- IP address
- Subnet mask
- Default gateway

NOTE:This example shows fictive numbers! When you receive your LOGIQworksthe TCP/IP settings should reflect the information you provide with the Data Collection Document.

Figure 3-65 Internet Protocol (TCP/IP)

NOTE *On the scanner the connectivity TCP/IP must be setup with the above TCP/IP information in the area for a Remote Archive to achieve communication with LOGIQworks.*

Please refer to Section 3-5-4-6 "Receive" on page 3-140 for details on how to configure the “receive” behavior of LOGIQworks through the Connection Service. Also please refer to Section 3-5-10 "Connectivity (Application Level)" on page 3-183 for general Connectivity Settings on the Application Level.

3-5-1-5 Keyboard setup

NOTE *This Procedure is not required if the keyboard is a US keyboard, since the default setting is set to US, English keyboards.*

Depending on your order you will receive a non-US keyboard. All keyboard input locales will be pre configured. Please check whether settings are correct.

1.) Click on the keyboard setup button, the following window will appear:

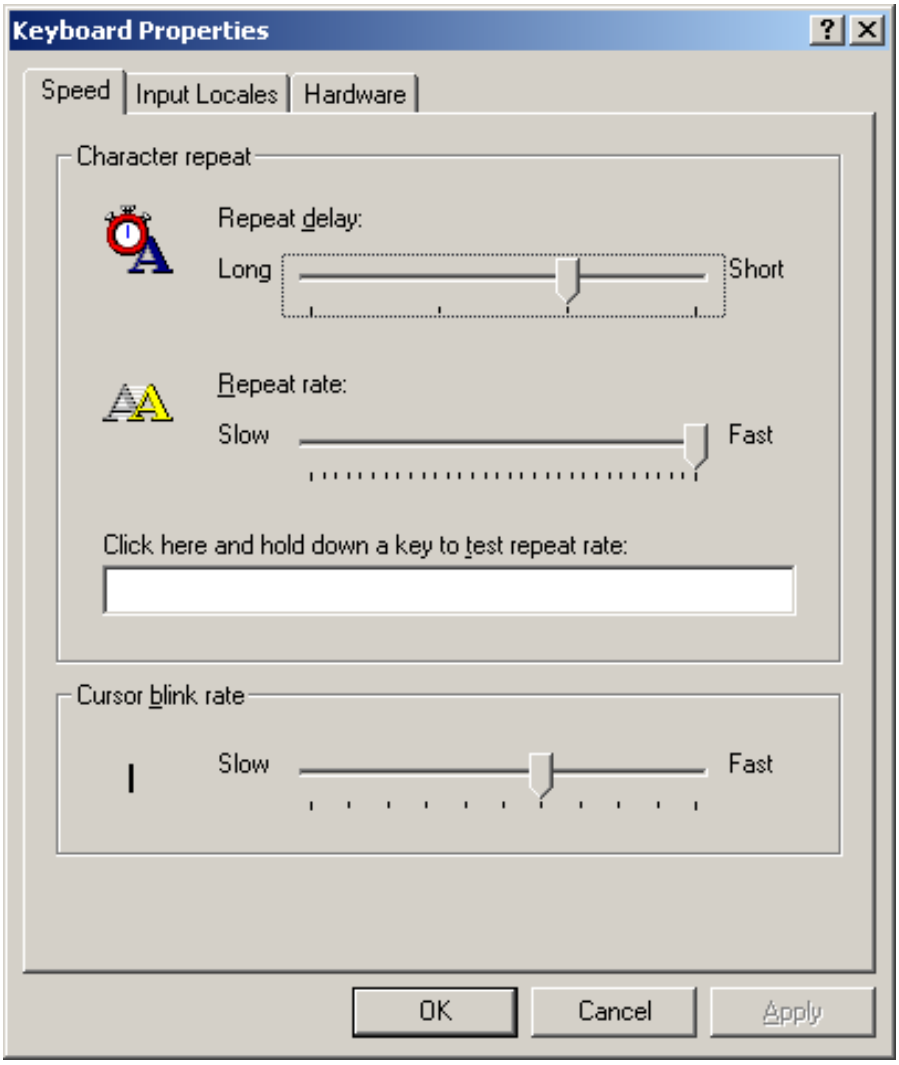


Figure 3-66 Keyboard Status Window

3-5-1-5 Keyboard setup (cont'd)

2.) Click on Input Locals, the following window will appear:

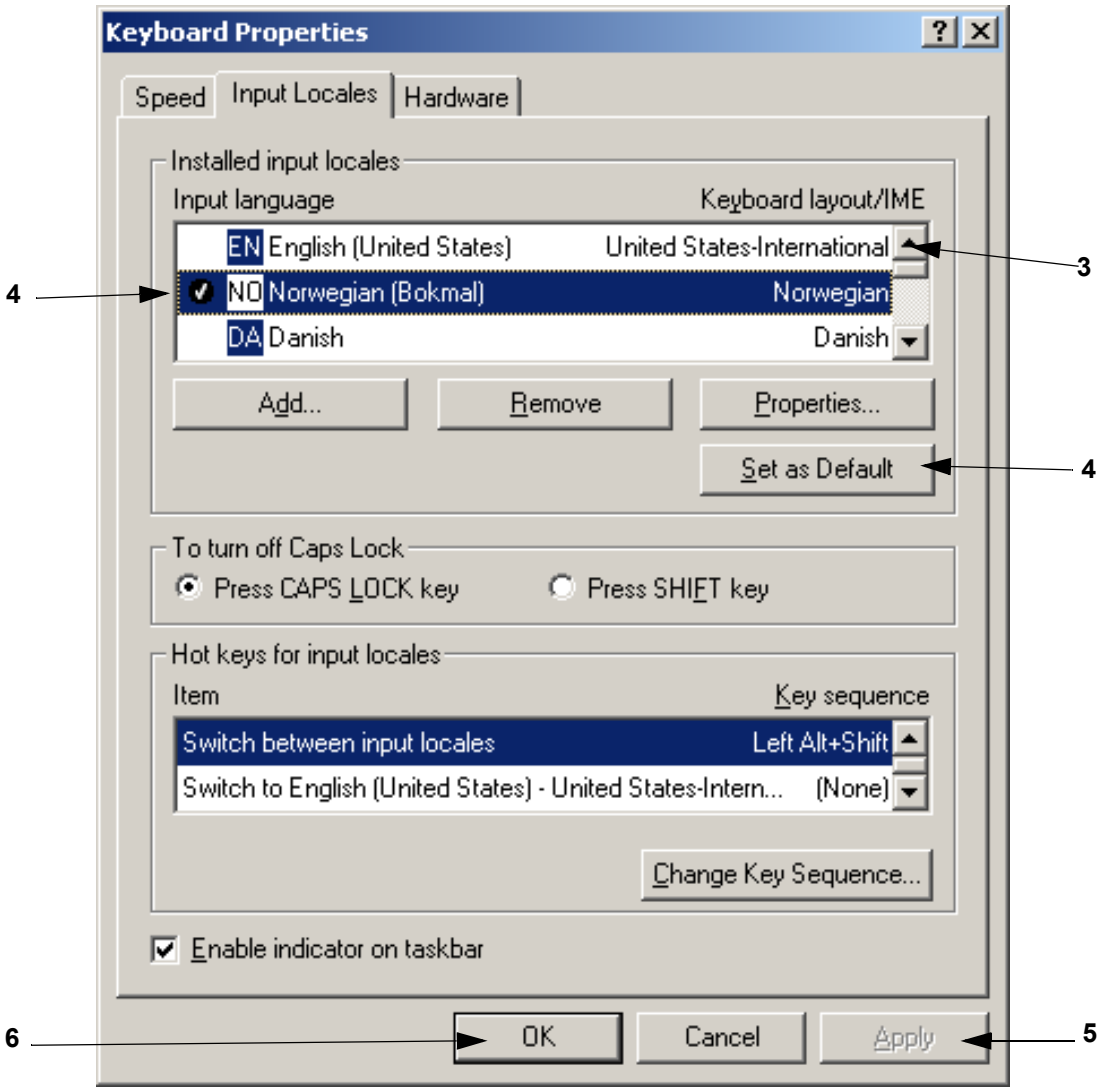


Figure 3-67 Keyboard Properties Window

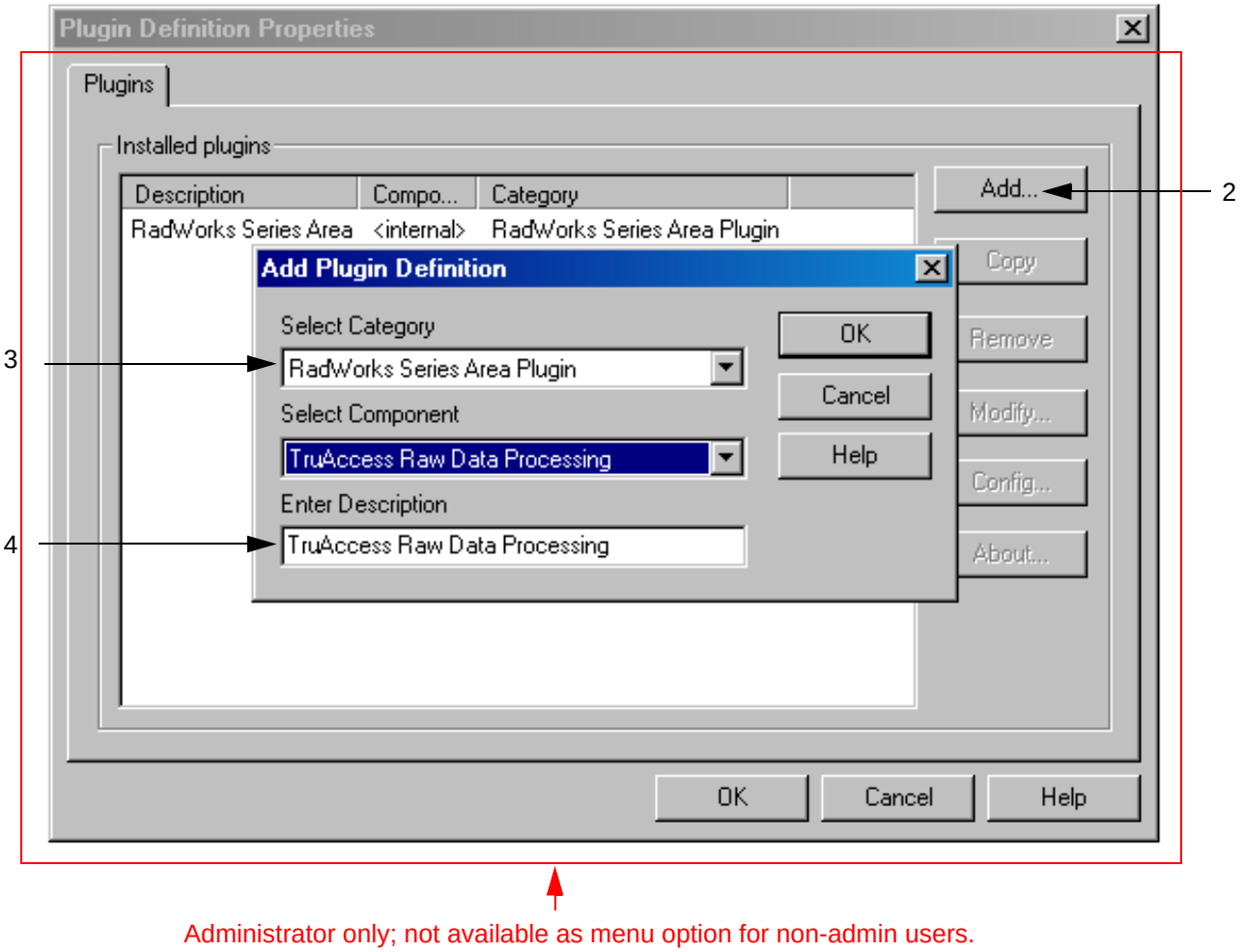
3.) Use the scroll bar to find the correct language keyboard layout for your keyboard.
4.) Click on the Set as Default button.
5.) Click on Apply button.
6.) Click on OK.
7.) Reboot LOGIQworks to get the full effect of the Keyboard Layout change.

3-5-2 General Application Level Configuration for LOGIQworks up to Rev. 1.3

3-5-2-1 TruAccess Plugin Definition

Verify that the TruAccess Raw Data Processing plugin is already defined and activate the plugin if not yet done.

1.) Select **Configuration** -> **Plugin Definitions...** from the Data Selector menu.



Administrator only; not available as menu option for non-admin users.

Figure 3-68 LOGIQworks-Plugin Definition Properties (1)

2.) If TruAccess Raw Data Processing is not yet listed in the Installed Plugins window, click **Add...** to open the Add Plugin Definitions dialog box. If it is already listed quit the dialog by clicking on “Cancel”.

3.) From the Select Component drop-down list, select TruAccess Raw Data Processing.

4.) You can change the default description in the Enter Descriptions field. The entered text will be displayed in the Series Area Plugin menu (right click popup menu).

5.) Click OK to apply the changes.

3-5-2-1 TruAccess Plugin Definition (cont'd)

Resulting list of installed plugins after TruAccess Raw Data Processing has been added:

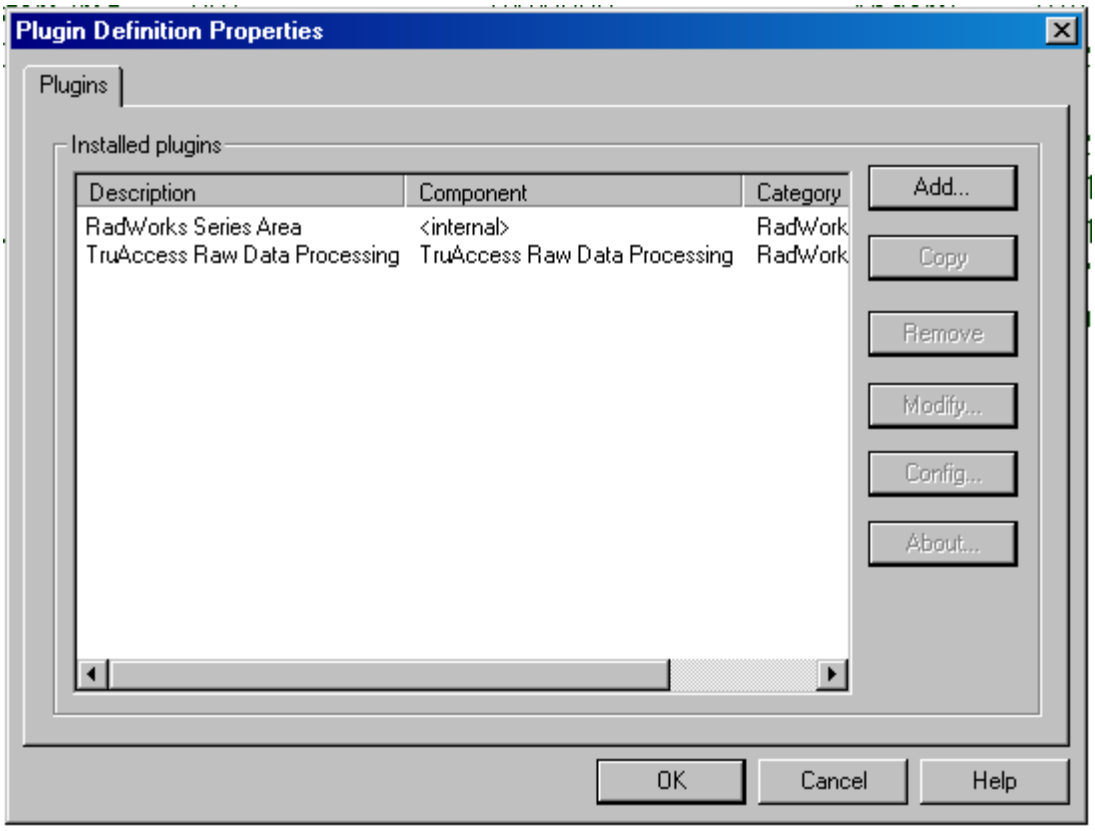


Figure 3-69 LOGIQworks- Plugin Definition Properties (2)

3-5-2-2 General settings

To view and set general LOGIQworks properties:

1.) Select **Configuration** > **Generic...** from the Data Selector Menu.
2.) Select the General tab in the Generic Properties dialog.

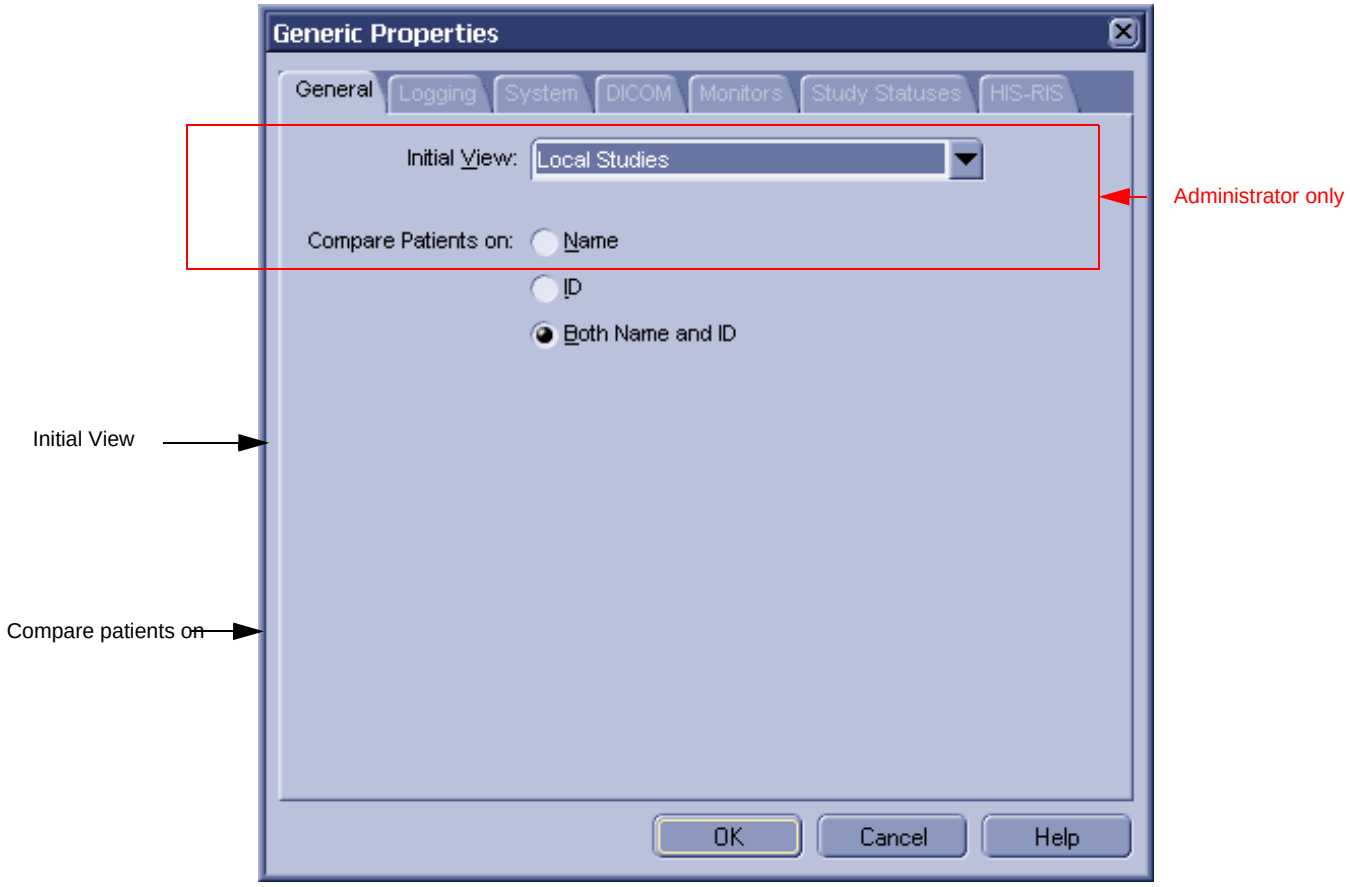


Figure 3-70 Generic Properties - General Settings

- **ROOT Directory:** Root directory of RA 600. This is the directory into which RA 600 has been installed. (Default: C:\AMI_61)
- **Work Directory:** Directory for temporary files created by RA 600. (Default: D:\AMI_61\WORK)
- **Main Window:**
  - **Initial View:** Check from the Initial View drop-down list the Worklist View you want LOGIQworks to display by default when starting. (Default: nothing selected, Local Studies will be default then)

3-5-2-2 General settings (cont'd)

- **Compare Patients on:** Indicate how you want to view patient studies in a patient worklist: by name, ID or both. LOGIQworks will collapse all the studies into one folder for viewing on the Local Patient Worklist, provided that the studies have the same patient name and/or patient ID.(Default: Both name and ID)

3-5-2-3 Logging

To set and view RA600's logging properties:

1.) Select **Configuration** > **Generic...** from the Data Selector Menu.
2.) Select the Logging tab from the Generic Properties dialog.

Do not change!

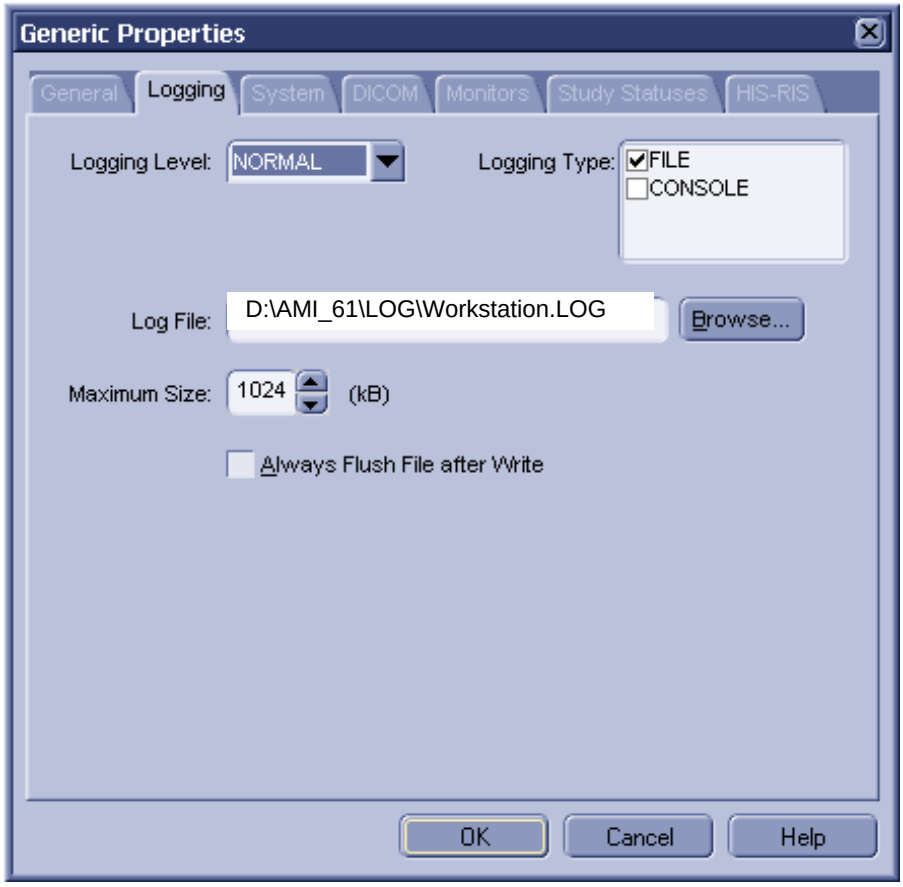


Figure 3-71 General Settings - Logging

3-5-2-3 Logging (cont'd)

- **Logging Level:** Set the level of logging messages. If set to ALL, all messages will be logged. If set to NORMAL (the typical setting) only error messages will be logged.
- **Logging Type:** Set the types of logging used by the RA 600 application. (Default: File)
  - **File:** If this check box is checked, RA 600 will write general information about its operation to the RadWorks.log file, which you can view in the Log folder.
  - **Pipe:** Used in combination with the listening tool in the X:\AMI_61\bin folder. Among other things, it enables you to observe DICOM transmissions in a pipe. Consult the technical reference manual or contact technical support for additional information.
  - **Console:** If this check box is checked, LOGIQworks will display a window that continuously shows the actions LOGIQworks is performing. This is useful when troubleshooting.
- **Log File:** Set the name of the general log file. Each Service has its own default log filename. See the Database Service, Connection Service and Print Service properties for details.

  (Default: D:\LOG\AMI_61\RadWorks.LOG; DO NOT CHANGE THE DEFAULT SETTINGS!)
- **Truncation Size (kB):** Set the truncation size of the logging file. The truncation size is the size the log file will be shortened to when its maximum size has been exceeded.(Default: 16 kB)
- **Maximum Size (kB):** Set the maximum size of the log file.

  Set the Maximum Size of the log file to 0 to disable log file truncation. This can be very handy for troubleshooting. (Default: 64 kB)
- **Always Flush File after Write:** If checked, all logging actions will be written immediately to the log file. This option will have a serious impact on the performance of LOGIQworks, so it should not normally be checked. (Default: not checked)
- **Log Pipe:** Name of the pipe where logging information is written.

  (Default: \\.\pipe\AMI2\RadWorks\Logging)

3-5-2-4 Popup Menu

To select/deselect popup menu:

1.) Select **Configuration** > **Generic...** from the Data Selector menu.
2.) Select the Popup Menu tab from the Generic Properties dialog.

3-5-2-4 Popup Menu (cont'd)

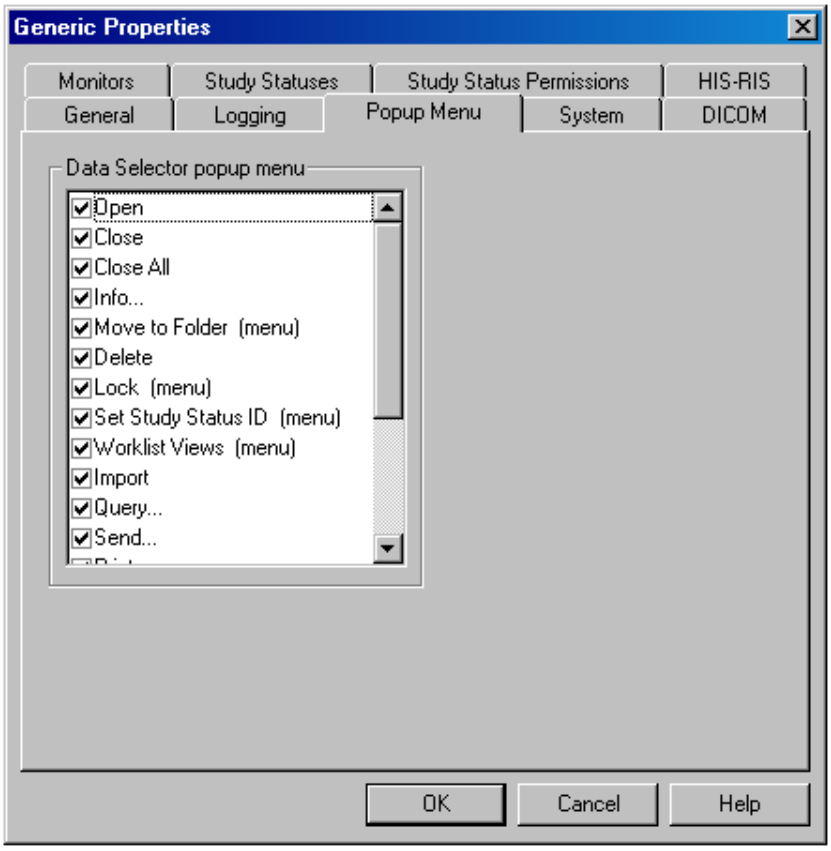


Figure 3-72 General Settings - Popup Menu

Check the boxes next to the menu items to select the ones you want to appear on the pop-up menu that appears when right-clicking in the Data Selector.

3-5-2-5 System Properties

To set display (system) properties:

1.) Select **Configuration** > **Generic...** from the Data Selector menu.
2.) Select the System tab from the Generic Properties dialog.

3-5-2-5 System Properties (cont'd)

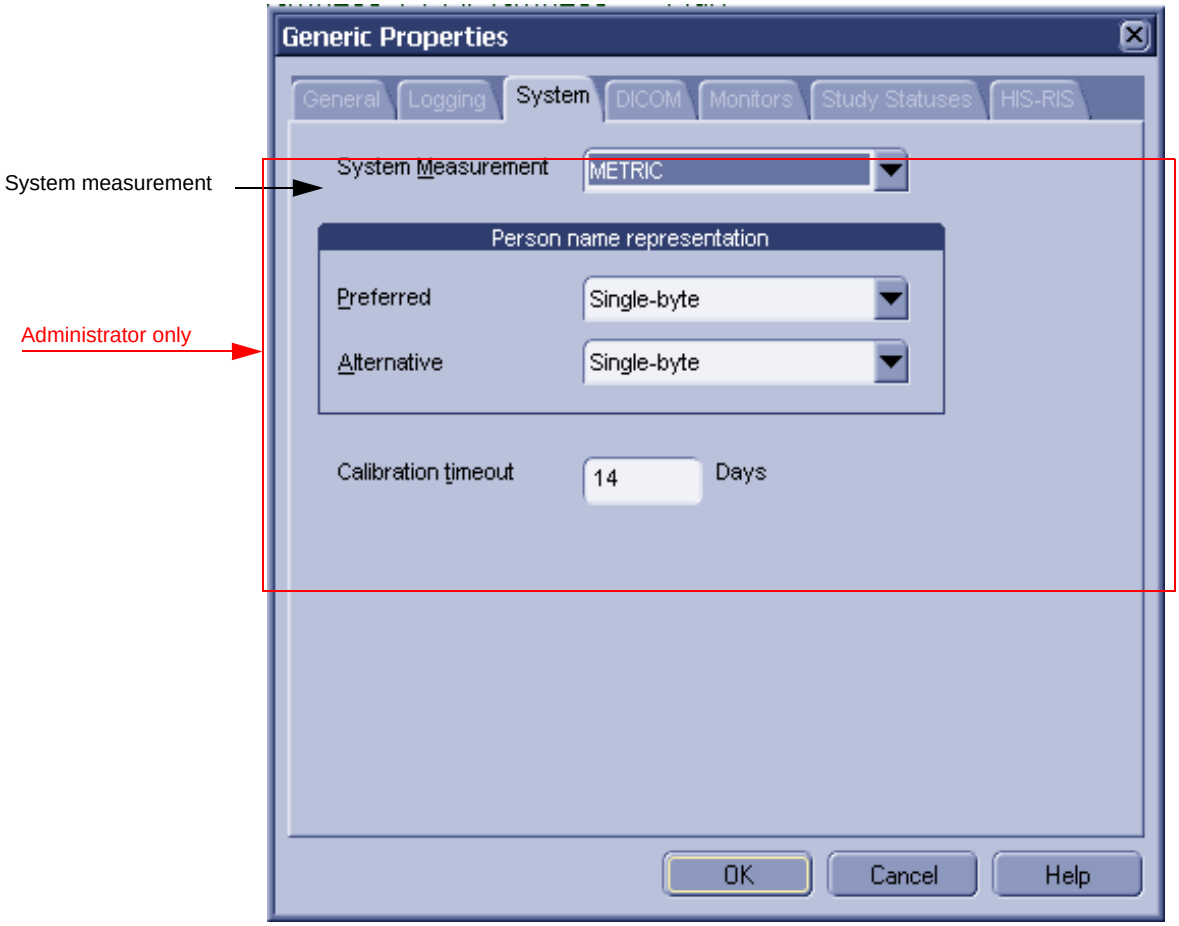


Figure 3-73 Generic Properties - System Settings

- **System Measurement:** Select the units of measurements you want LOGIQworks to use from the drop-down list. If you select REGIONAL SETTINGS (see Figure 3-74), LOGIQworks will use the settings as specified in Regional Settings in the Windows Control Panel (see Section 3-5-1-2 on page 3-70). (Default: METRIC)

If you wish to overrule Windows' regional settings, you can select either METRIC (Default setting) or US from the drop-down list. LOGIQworks will then use millimeters or inches irrespective of what is specified in the Windows Control Panel.

3-5-2-5 System Properties (cont'd)

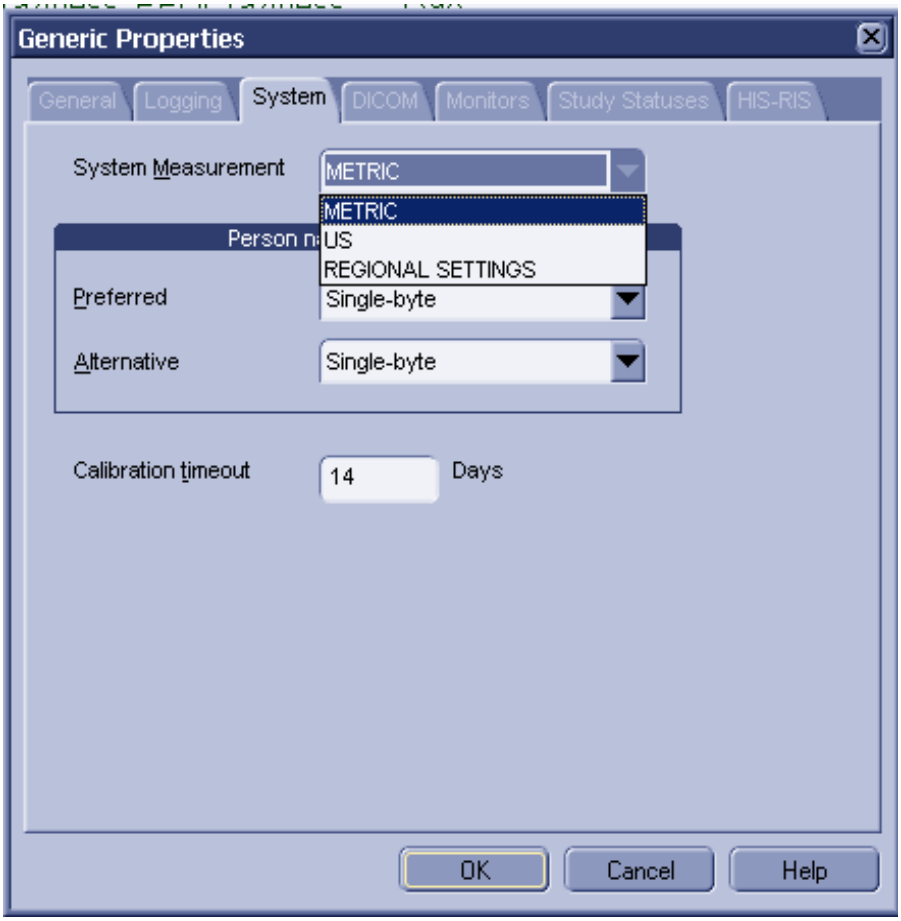


Figure 3-74 Generic Properties - System Settings (2)

- **Person name representation**:
  Here you can indicate how you want patient names to appear on work lists.
  - **Preferred**: Select from the drop-down list how you would like to display names on patient lists. The choices are:
    * Single-byte: displays patient names using the single-byte character set typical for displaying European languages. (Default)
    * Ideographic: displays patient names by means of double-byte character sets typical for displaying far-eastern languages such as Japanese, Chinese and Korean.
    * Phonetic: also displays patient names using double-byte character sets, but shows the phonetic representation of patients' names, not the ideographic representation.
  - **Alternative:** Allows you to indicate an alternative method of displaying names if the first method is not a viable option. (Default: Style-byte)
- **Calibration time-out**: Set the number of days before calibration of the monitor is required for true size display. Monitors used for true size display must be re calibrated regularly to ensure that they provide accurate results. (Default: 14 days)

3-5-2-6 DICOM settings

To set the DICOM properties for your LOGIQworks system:

1.) Select **Configuration** > **Generic...** from the Data Selector menu.

2.) Select the DICOM tab from the Generic Properties dialog.

These steps describe how to enter the correct Application Entity Title and Port number.

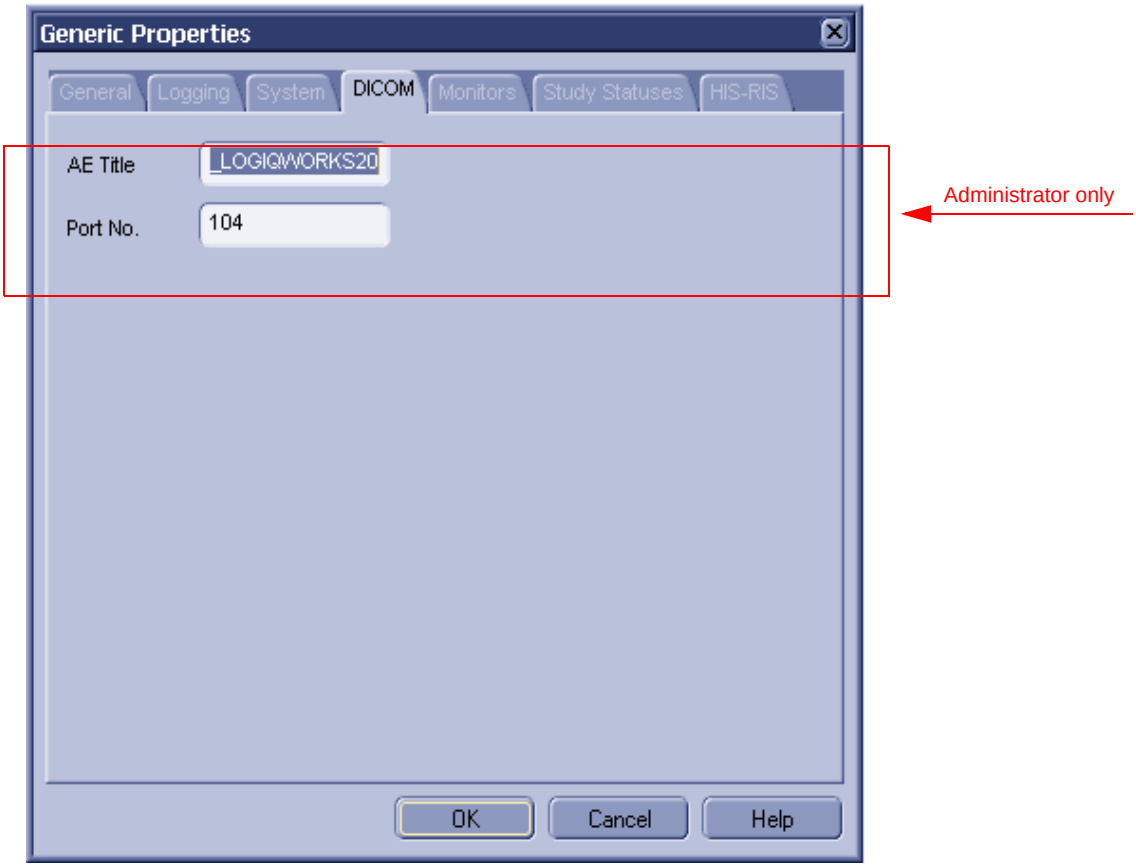


Figure 3-75 DICOM settings

- **AE Title:** DICOM Application Entity title for the DICOM services provided by your system. The AE Title entered here should be used by other systems to set up DICOM associations to your system.

  The same AE Title is also used by your system when it sets up associations to other systems. The AE Title is then referred to as the calling AE Title.

NOTE *For LOGIQ 7 the AE Title has always to begin with "AE_" otherwise the images can not be transferred.*

- **Port No.:** Socket port number for the DICOM services provided by this system. The Port Number is used by other systems to set up DICOM associations to this system.(Default: 104)

NOTE *Reboot entire system after any change to DICOM settings.*

3-5-2-7 Monitors of System Dell Precision 340

To set up LOGIQworks for use with single monitor log on as system administrator:

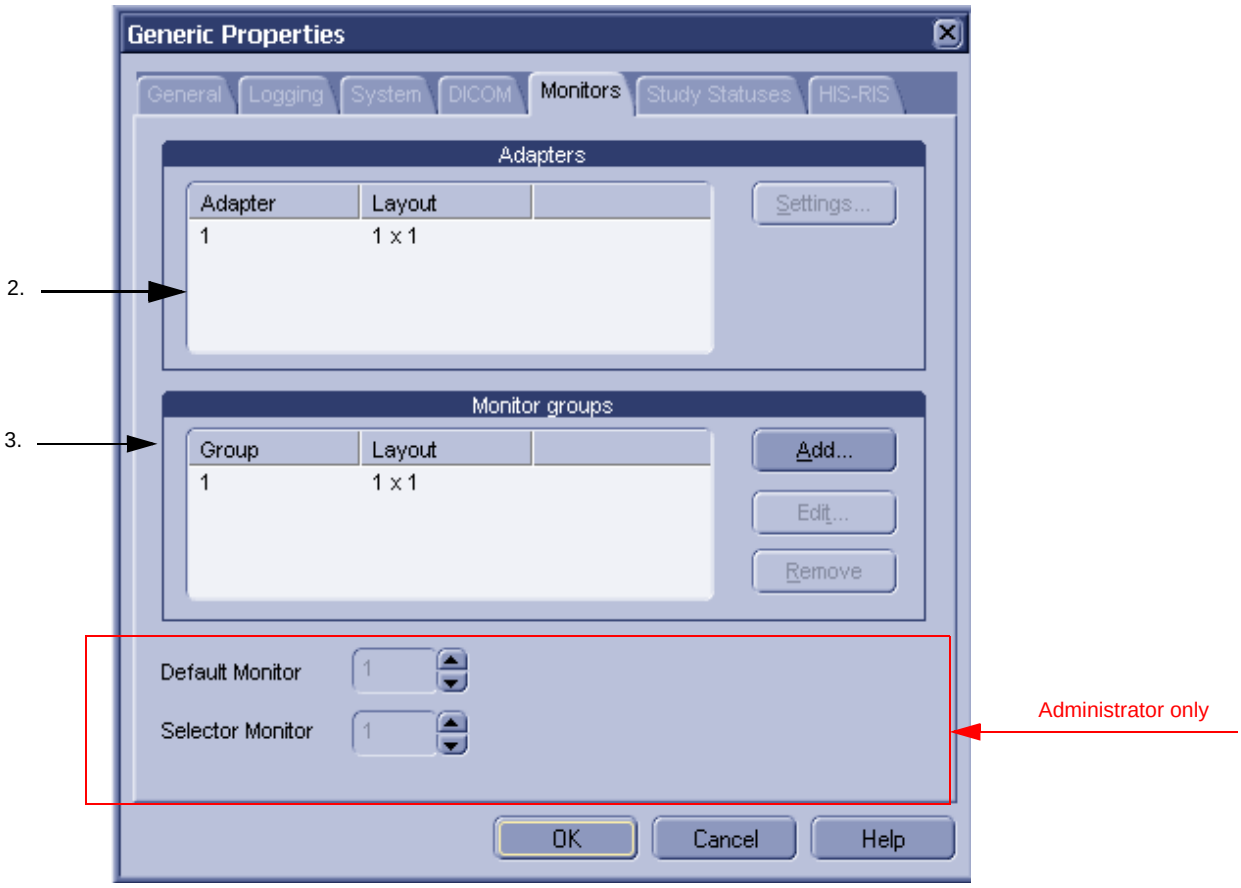


Figure 3-76 Single Monitor Setup

1.) Select **Configuration** > **Generic...** from the Data Selector menu and click the monitor tab.
2.) Select the Adapter and click Settings. Specify that 1 row and 1 column of monitors (1x1) are connected to that adapter.
3.) Select the Monitor Group and click Edit..... Specify that 1 row and 1 column of monitors (1x1) is defining this group.
4.) The “Default Monitor” is set to 1. All other settings are not accepted.
5.) The “Select Monitor” is set to 1. All other settings are not accepted.
6.) Restart LOGIQworks.

3-5-2-7 Monitors of System Dell Precision 340 (cont'd)

Setting up LOGIQworks for use with dual monitors log on as system administrator:

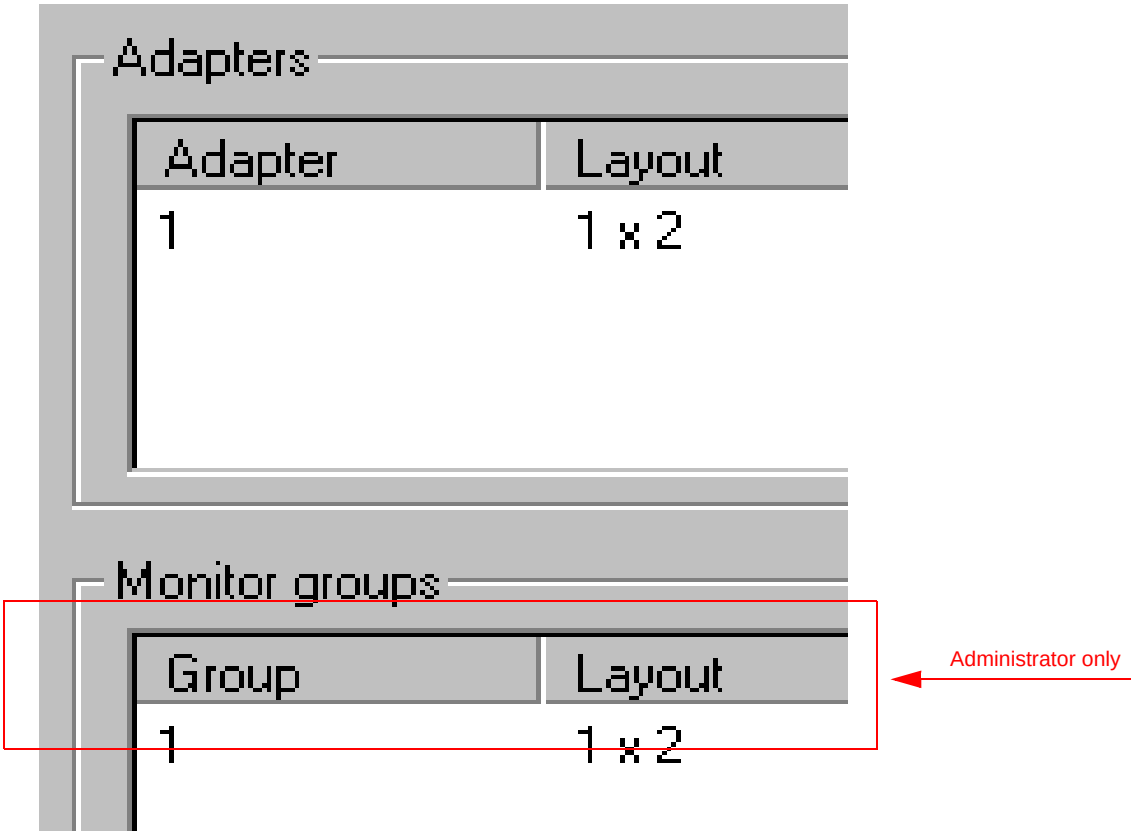


Figure 3-77 Dual Monitor Setup

1.) Select **Configuration -> Generic...** from the menu bar in the **Data Selector** and click the **Monitor** tab.

2.) Select the **Adapter** and click **Settings**. Specify that 1 row and 2 columns of monitors (1 x 2) are connected to that adapter.

3.) Select the Monitor Group and click **Edit.** Specify that 1 row and 2 columns of monitors (1 x 2) are defining this group. A group must have monitors with the same resolution and/or space.

4.) Set the **"Default Monitor"** (1 = left most monitor; 2 = second from the left).

5.) Set the **"Select Monitor"**, this determines where the data selector will appear (1 = left most monitor; 2 = second from left).

6.) Restart LOGIQworks.

3-5-2-8 Monitors of System Dell Precision 360 and of Dell Precision 370

To set up LOGIQworks for use with single monitor log on as system administrator:

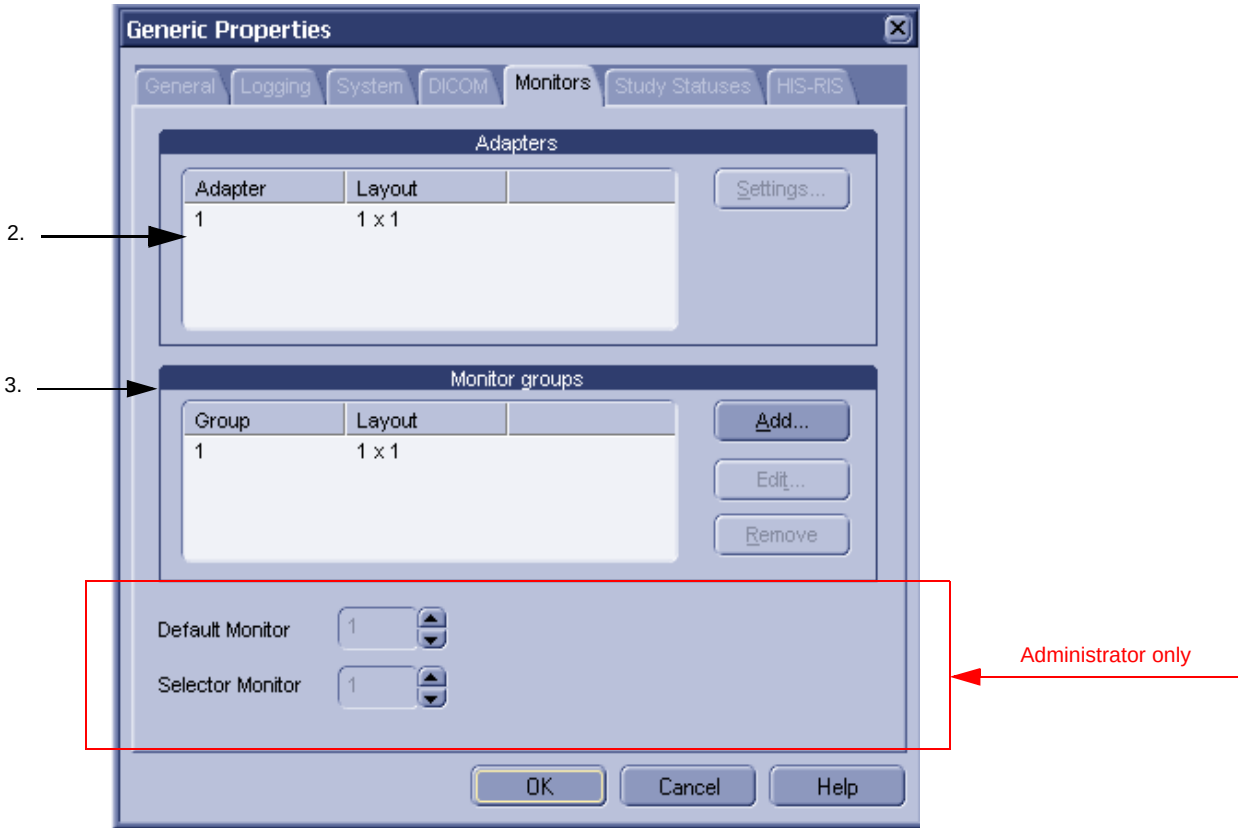


Figure 3-78 Single Monitor Setup for Dell 360 and for Dell 370

1.) Select **Configuration** > **Generic...** from the Data Selector menu and click the monitor tab.
2.) Select the Adapter and click Settings. Specify that 1 row and 1 column of monitors (1x1) are connected to that adapter.
3.) Select the Monitor Group and click Edit..... Specify that 1 row and 1 column of monitors (1x1) is defining this group.
4.) The “Default Monitor” is set to 1. All other settings are not accepted.
5.) The “Select Monitor” is set to 1. All other settings are not accepted.
6.) Restart LOGIQworks.

3-5-2-8 Monitors of System Dell Precision 360 and of Dell Precision 370 (cont'd)

Setting up LOGIQworks for use with dual monitors for true dual graphic card log on as system administrator.

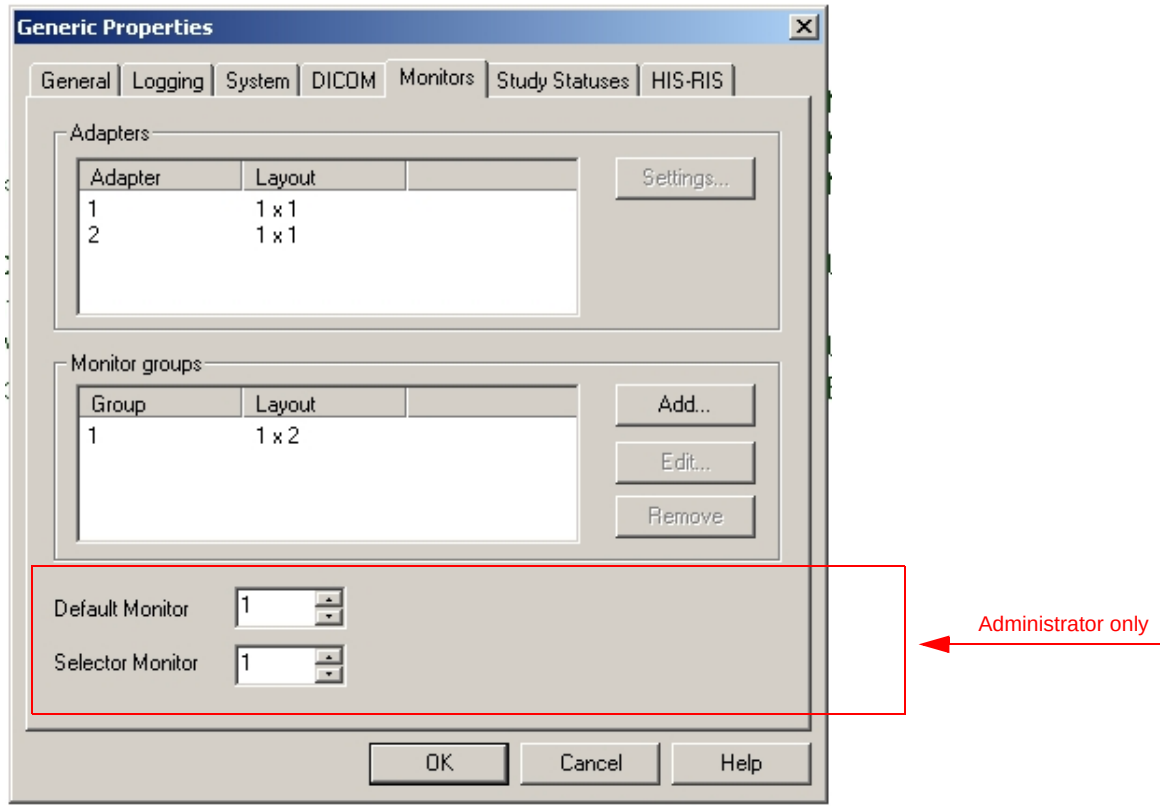


Figure 3-79 Simulated Dual Monitor Setup for Dell 360 and Dell 370

3-5-2-8 Monitors of System Dell Precision 360 and of Dell Precision 370 (cont'd)

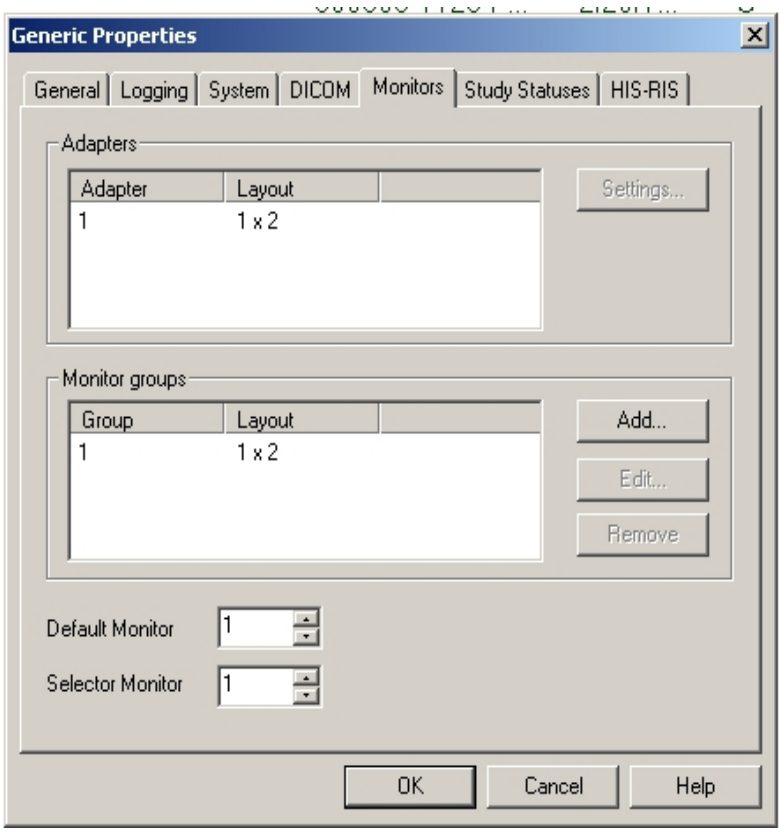


Figure 3-80 Real Dual Monitor Setup for Dell 360 only

Setting up LOGIQworks for use with true dual monitors log on as system administrator:

1.) Select **Configuration -> Generic...** from the menu bar in the **Data Selector** and click the **Monitor** tab.
2.) Select the **Adapter** and click **Settings**. Specify that 1 row and 1 columns of monitors (1 x 1) are connected to that adapter.
3.) Select the Monitor Group and click **Edit.** Specify that 1 row and 2 columns of monitors (1 x 2) are defining this group. A group must have monitors with the same resolution and/or space.
4.) Set the **"Default Monitor"** (1 = left most monitor; 2 = second from the left).
5.) Set the **"Select Monitor"**, this determines where the data selector will appear (1 = left most monitor; 2 = second from left).
6.) Restart LOGIQworks.

3-5-2-9 Study Statuses

To add/remove/modify study statuses:

1.) Select **Configuration** > **Generic...** from the Data Selector menu.
2.) Select the Study Statuses tab from the Generic Properties dialog.

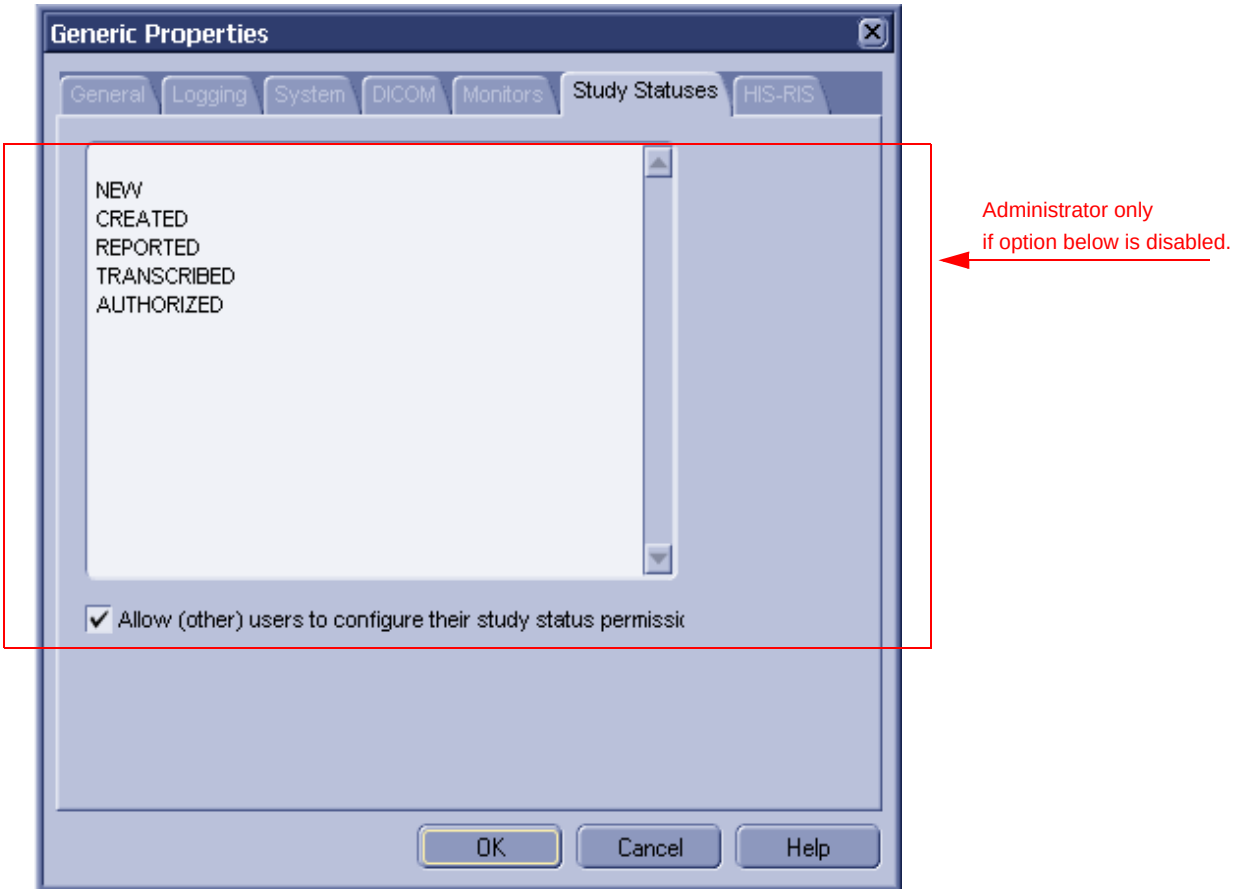


Figure 3-81 Generic Properties - Study Statuses

You can add study statuses to be stored in the Data Selector with a selected study (use this Generic Properties page to do so) or to be saved with the study in the Save Data dialog drop-down list in the Viewing Section (see Section 3-5-2-12 on page 3-99 in the Configuration Menu).

The priority of the statuses is from low to high reading from the top of the list down.

Statuses can be entered in various ways. The status written first (in capital letters) is the official DICOM description and will be stored in the database. This status description may not consist of words separated by a space. If you want to use two words, use an underscore character between them.

3-5-2-9 Study Statuses (cont'd)

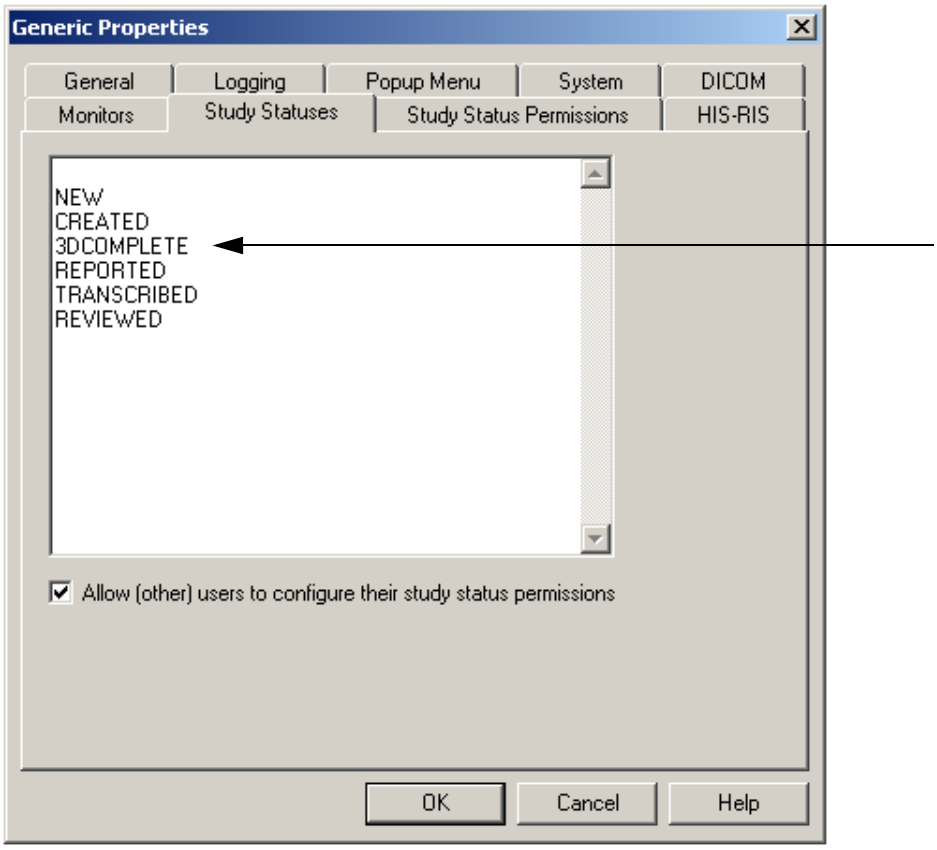


Figure 3-82 Study Statuses including user defined status

The backslash separates the DICOM description with your own description of that particular status. For this you may use more than one word separated by spaces.

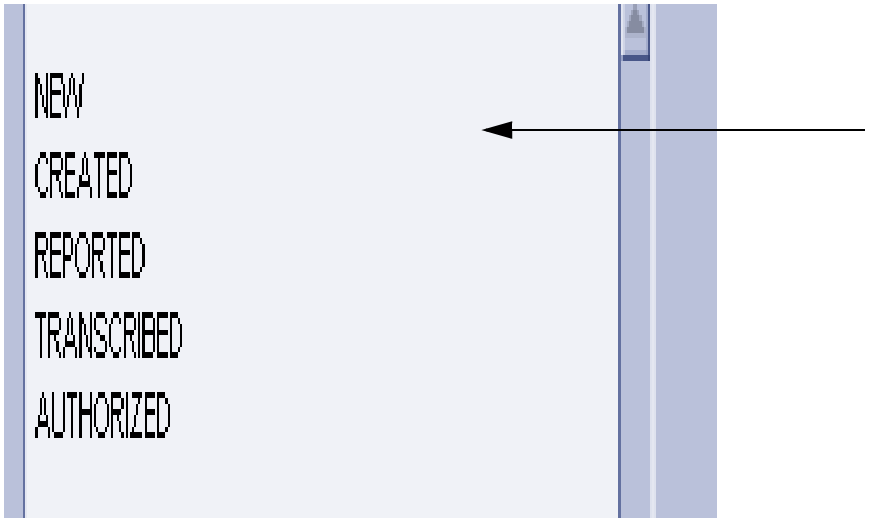


Figure 3-83 User defined status with description

3-5-2-9 Study Statuses (cont'd)

After adding the necessary statuses, the System Administrator has to configure the status permissions for each LOGIQworks user. The **Allow (other) users to configure their status permissions** check box must be checked (default after installation) in order to do this. Each user of this particular workstation should be present while doing so.

Once all the status permissions have been configured, the System Administrator should uncheck the **Allow (other) users to configure their status permissions** check box by logging on as Administrator.

3-5-2-10 Study Status Permission

To set/remove Study Statuses Permission for a certain user:

1.) Select **Configuration** > **Generic...** from the Data Selector menu.

2.) Select the Study Status Permissions tab from the Generic Properties dialog.

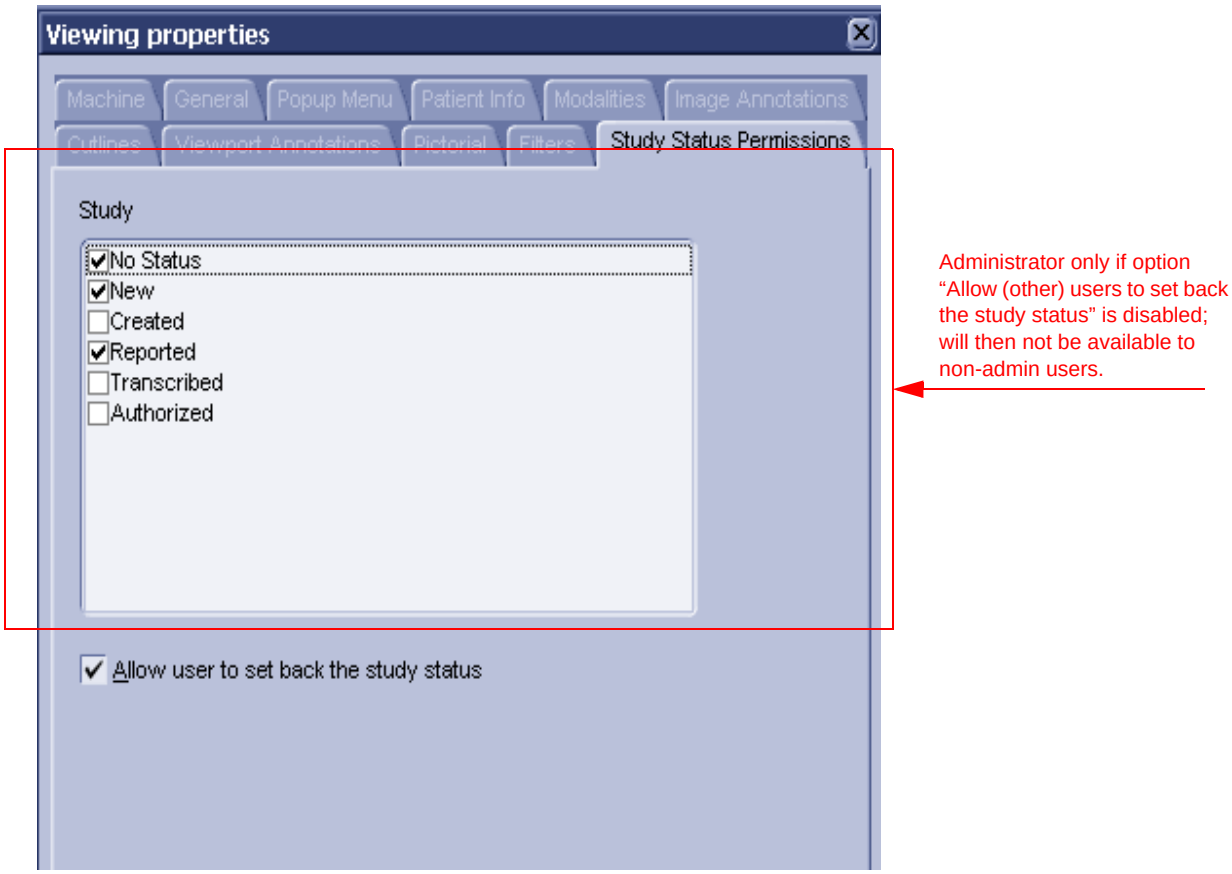


Figure 3-84 Generic Properties - Study Status Permission (Default)

3-5-2-10 Study Status Permission (cont'd)

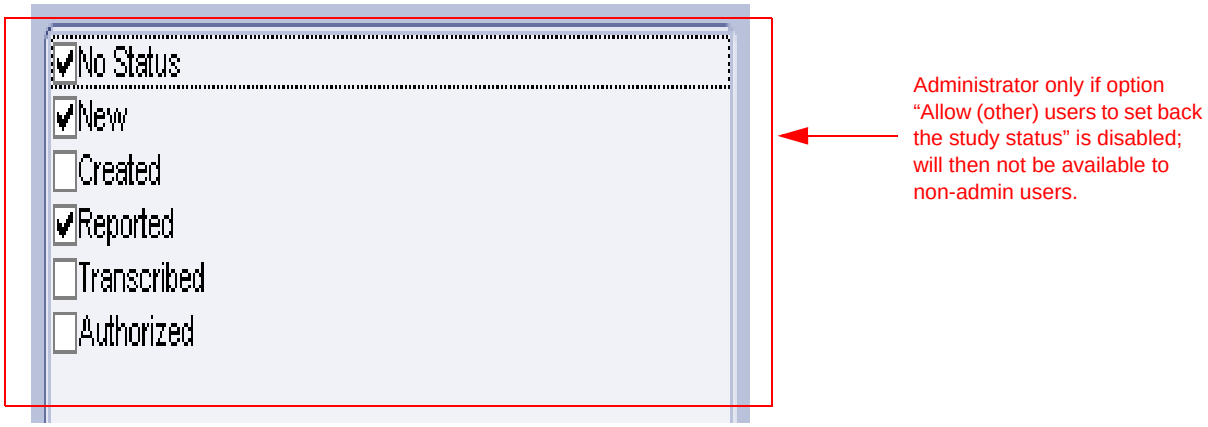


Figure 3-85 Generic Properties - Study Status Permission (with user added study status)

Set which study statuses the user will be able to select from when presented with the opportunity to change study status while using LOGIQworks.

Check the check boxes of the statuses the user will be able to select.

The user can be allowed to set the status back to a 'lower' one, from 'Authorized' to 'Created' for example. In some cases, however, this may cause workflow problems. Check the **Allow user to set back the study status** check box if you want a user to be able to set back the study status on the workstation.

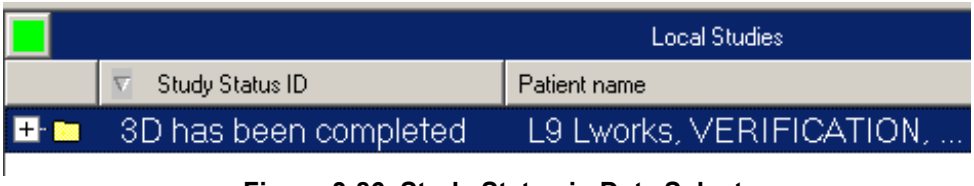


Figure 3-86 Study Status in Data Selector

3-5-2-11 HIS-RIS

To configure HIS-RIS implementations, add/remove/modify worklist:

1.) Select **Configuration** > **Generic...** from the Data Selector menu.

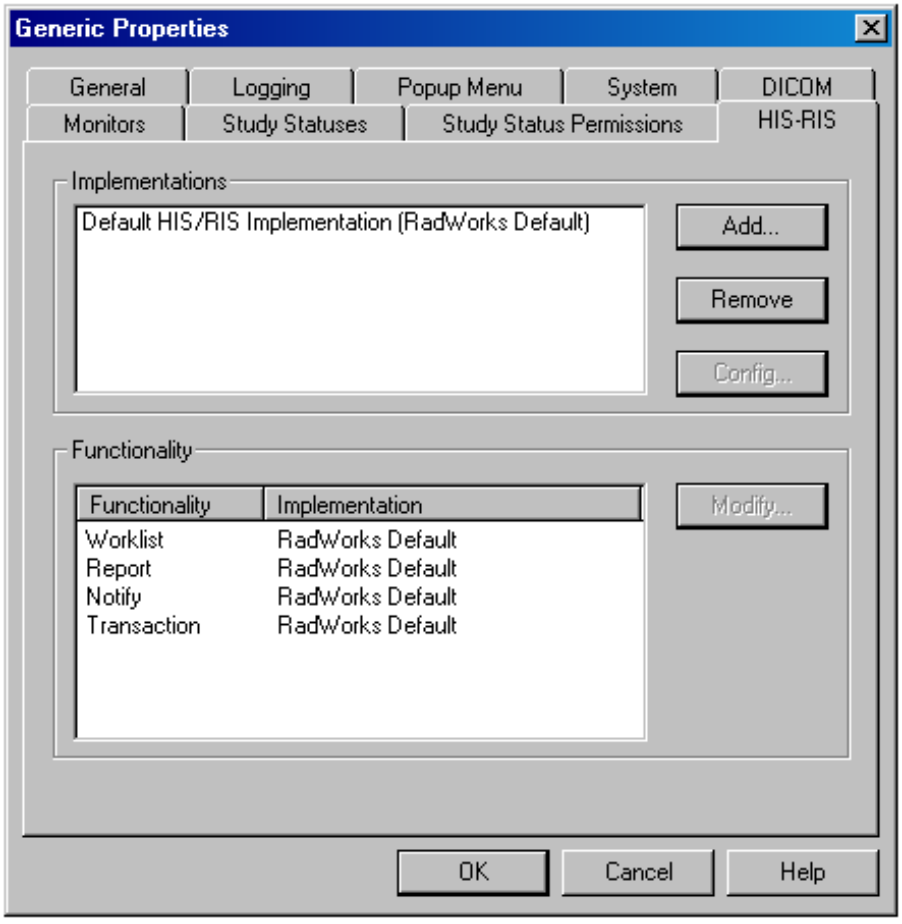


Figure 3-87 Generic Properties - HIS-RIS

In order to be able to use work lists you must configure or add HIS-RIS implementations. LOGIQworks comes with several Dynamic Link Libraries (DLL) which enable the system to connect to a HIS-RIS system, providing there is an external program that can make use of the supplied DLLs.

By default, the HIS-RIS Manager uses its own DLL, which allows you to work with Local Database and DICOM Modality Work lists.

- **Implementations:** During installation of LOGIQworks a default implementation will be installed.
  - Click the **Add...** button to add a pre-defined HIS-RIS implementation. You can only add an implementation if your system is connected to a HIS-RIS system.
  - Click on an implementation in the list and then on **Remove** to delete it from your system.
  - Click **Config...** to configure your HIS-RIS system. If you are not connected to a HIS-RIS system you need not change the default values in this dialog.

Please refer to Section 3-5-11-1 "Reading DICOM volume from DVD or CD" to learn how to add a Study/Patient List DVD or CD with DICOM volume on CD or DVD as source database.

3-5-2-11 **HIS-RIS** (cont'd)

- **Functionality**

  The Functionality list shows the various functionalities which are available in the HIS-RIS Implementations.

  - **Worklist:** The Worklist which will be retrieved from the HIS-RIS and shown in the Data Selector.
  - **Report:** The HIS-RIS which will send report information (whether a report should be written or if the study has already been authorized)
  - **Notify:** The HIS-RIS which will be informed about study changes, etc.
  - **Transaction:** The HIS-RIS which will be queried for matching, accepting key images, etc.

  Click on a functionality and then on Modify... to use a different HIS/RIS implementation for the functionality.

3-5-2-12 Viewing Properties

To set general viewing properties:

1.) Select **Configuration** > **Viewing...** from the Data Selector menu.
2.) Select the General tab from the Viewing Properties dialog.

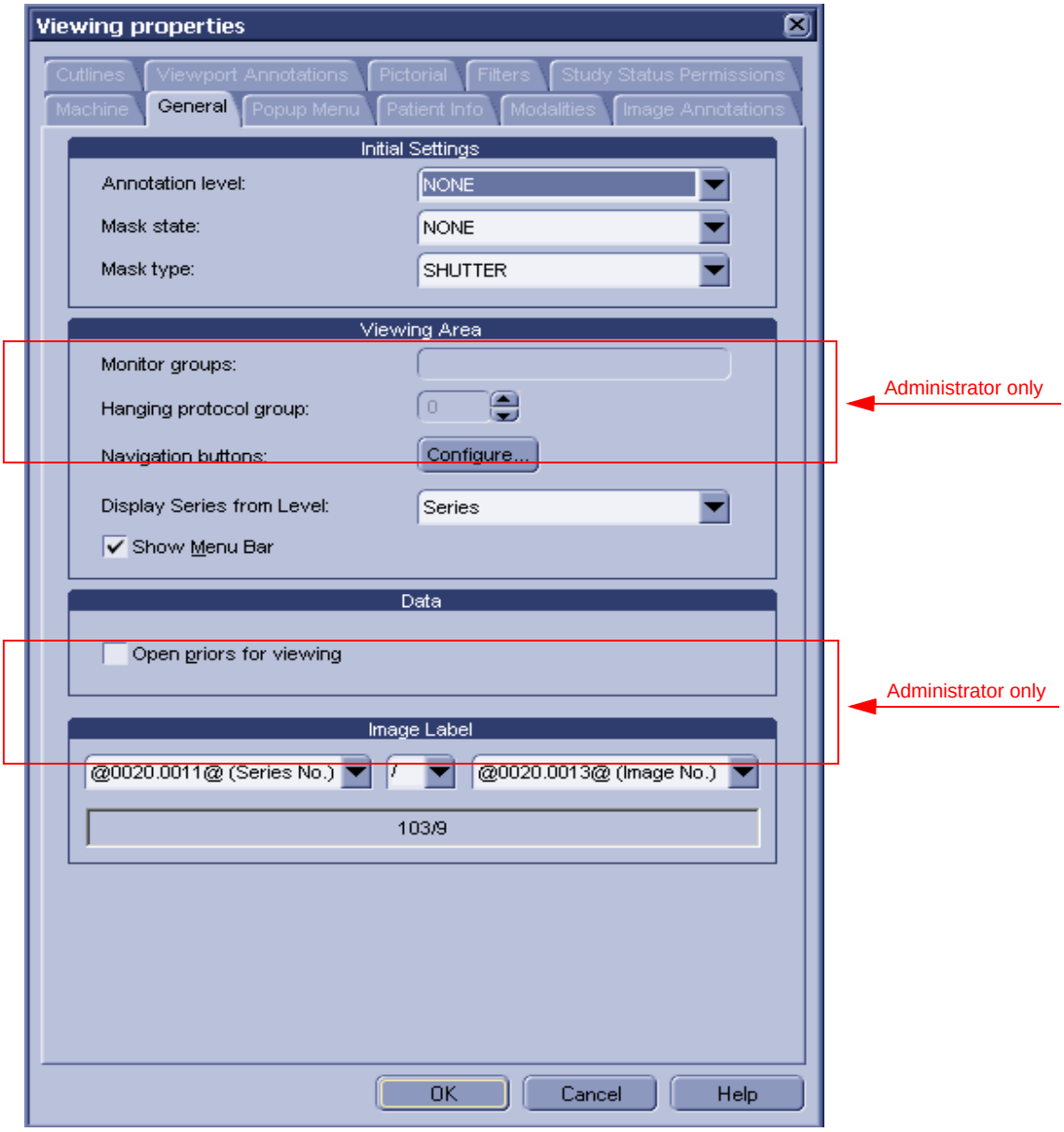


Figure 3-88 Viewing Properties - General

3-5-2-12 Viewing Properties (cont'd)

Use the General tab of the Viewing Properties page to define general properties of the Viewing Section.

- **Initial Settings**
  - **Annotation level:** Annotation level that is initially used in the Viewing Section.
  - **Mask State:** Set how masks are displayed when entering the Viewing Section. The options NONE, SHOW and ACTIVATE correspond to the radio buttons on the Masks totable in the Viewing Section.
  - **Mask Type:** Set the type of mask that will appear as the default in the drop-down list at the top of the Masks tool tab in the Viewing Section.
- **Viewing Area**
  - **Monitor groups:** Specifies the number of monitor groups you configured. Leave the field blank to have LOGIQworks display on all monitors.
  - **Hanging protocol group:** Specifies the group to which you want to apply your hanging protocols.
  - **Navigation buttons:** Click the Config... button to customize where you want to position the Up, Down, Up Series, Down Series, Previous, Next and Back buttons in the Viewing Section.
  - **Display Series from Level:** Select the default that determines how LOGIQworks should fill the series area of the Viewing Section when you view multiple studies.
    * Select **Patients** if you want to display the first series of each patient when opening multiple items for viewing.
    * Select **Studies** if you want to display the first series of each study when opening multiple items for viewing.
    * Select **Series** if you want to display all the series of the first study, and then all the series of any remaining studies.
  - **Show Menu Bar:** Check this check box if you want LOGIQworks to display in the Viewing Section a menu bar with commands for viewing images.
- **Data**
  - **Direct View:** LOGIQworks can allow studies that are not immediately available on the local system (such as those in a remote view) to be "directly viewed". Such studies will be opened immediately for viewing and the Pictorial Index will continually update to display new images as they arrive until all images have been received. To enable this feature, make sure the Direct View check box is checked and also set a Default Retrieve AE (see below) (Default: checked).

    It could be that you never want your Viewing Section to be updated while viewing studies. You can turn off the direct viewing of images as they are received by unchecking the Direct View check box. Note, however, that this will turn off all the features relating to viewing images as they arrive, such as monitoring mode and directly viewing images from a remote view.
  - **Fallback Retrieve AE Title:** The second application title at which LOGIQworks will look to see where images are if they are not at the location of the primary application entity (machine hosting the study).
  - **Multi Study Save Mode:** This mode determines how changes can be saved to studies during multi study viewing.
    * **All Combined** means that the Save Data dialog box will be displayed only once (when something has been changed/added and can be saved with the study) and allows all relevant changes to be saved to the respective studies in a single action.
    * **Most Recent Only** means that the Save Data dialog box is only displayed for the most recent study (determined by study data and time) and not for the other studies.
    * **None** means that the Save Data dialog box will never appear in multi-study mode.
    * **Sequential** means that the Save Data dialog will be displayed for all studies sequentially.

3-5-2-12 Viewing Properties (cont'd)

- **Open Priors for viewing** Opens for viewing priors associated with a study in the relevant worklist.

Please refer to the RadWorks 6.1 Installation guide, page 70 for more information on the viewing properties and the other configuration tabs on the Viewing Properties page.

3-5-3 General Application Level Configuration for LOGIQworks Rev. 2.0 and Rev. 3.0

3-5-3-1 TruAccess Plugin Definition

Verify that the TruAccess Raw Data Processing plugin is already defined and activate the plugin if not yet done.

1.) Select **Configuration** -> **Plugin Definitions...** from the Data Selector menu.

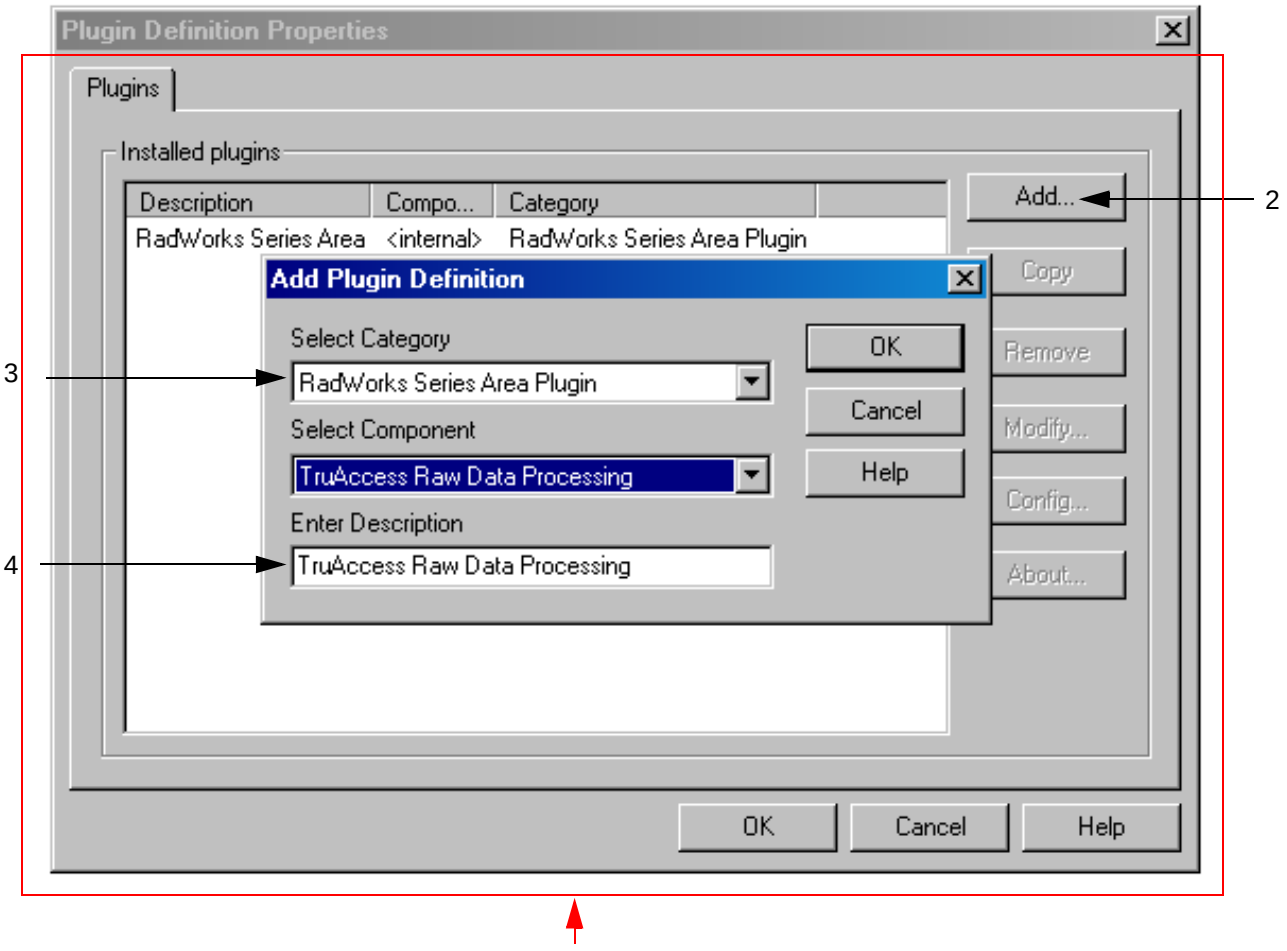


Figure 3-89 LOGIQworks-Plugin Definition Properties (1)

2.) If TruAccess Raw Data Processing is not yet listed in the Installed Plugins window, click **Add...** to open the Add Plugin Definitions dialog box. If it is already listed quit the dialog by clicking on “Cancel”.

3.) From the Select Component drop-down list, select TruAccess Raw Data Processing.

4.) You can change the default description in the Enter Descriptions field. The entered text will be displayed in the Series Area Plugin menu (right click popup menu).

5.) Click OK to apply the changes.

3-5-3-1 TruAccess Plugin Definition (cont'd)

Resulting list of installed plugins after TruAccess Raw Data Processing has been added:

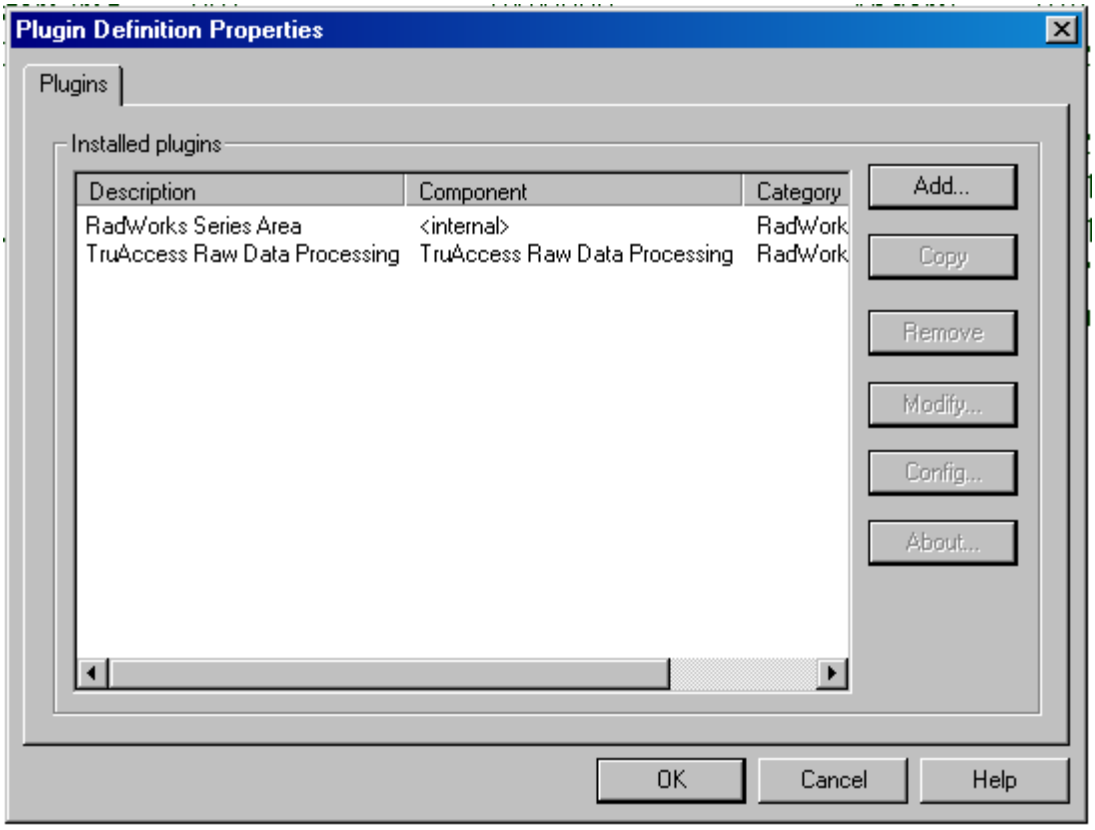


Figure 3-90 LOGIQworks- Plugin Definition Properties (2)

3-5-3-2 General settings

To view and set general LOGIQworks properties:

1.) Select **Configuration** > **Generic...** from the Data Selector Menu.
2.) Select the General tab in the Generic Properties dialog.

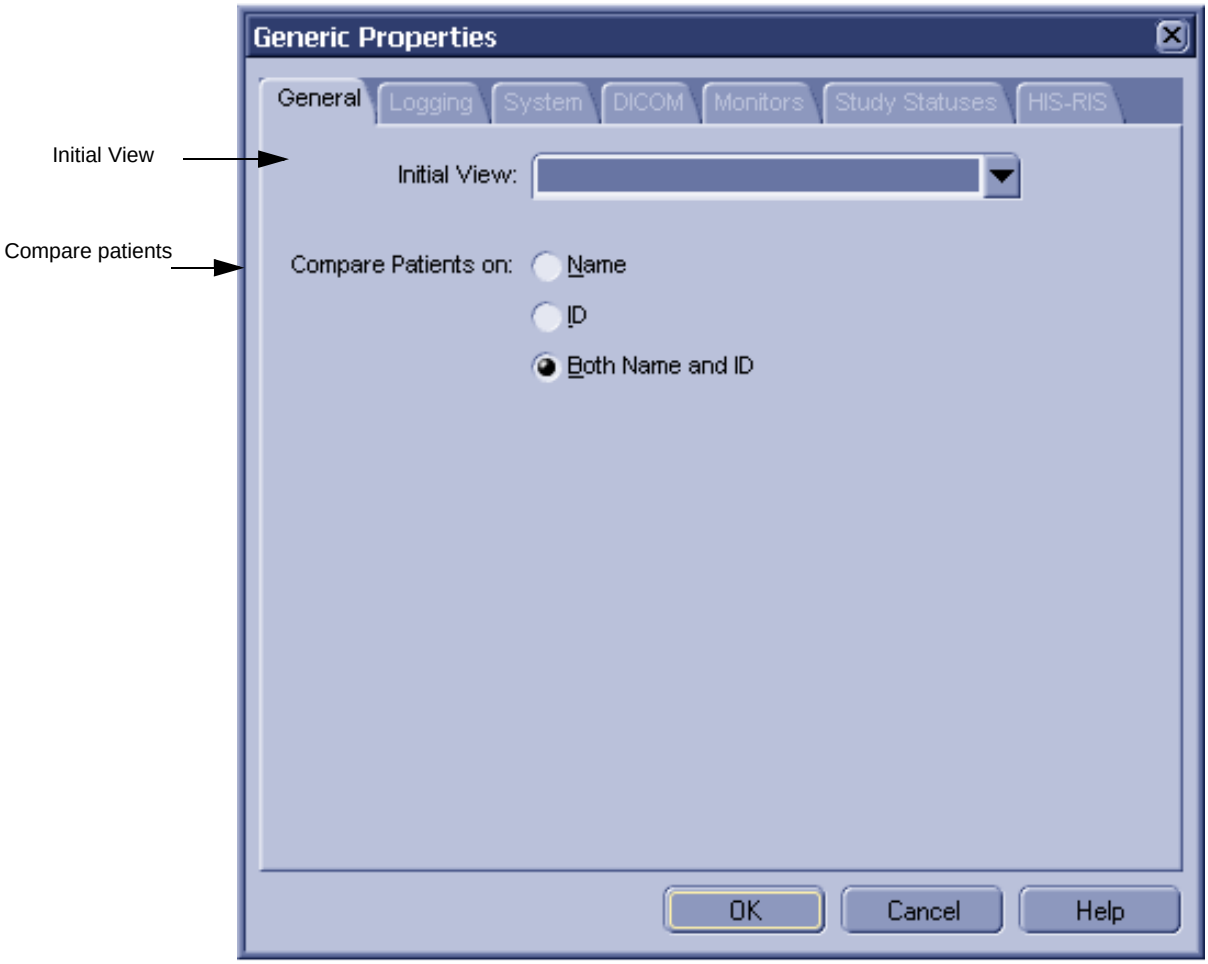


Figure 3-91 Generic Properties - General Settings

- **Main Window:**
  - **Initial View:** Check from the Initial View drop-down list the Worklist View you want LOGIQworks to display by default when starting. (Default: nothing selected, Local Studies will be default then)

3-5-3-2 General settings (cont'd)

- **Compare Patients on:** Indicate how you want to view patient studies in a patient worklist: by name, ID or both. LOGIQworks will collapse all the studies into one folder for viewing on the Local Patient Worklist, provided that the studies have the same patient name and/or patient ID.(Default: Both name and ID)

3-5-3-3 Logging

To set and view RA600's logging properties:

1.) Select **Configuration** > **Generic...** from the Data Selector Menu.

2.) Select the Logging tab from the Generic Properties dialog.

Do not change!

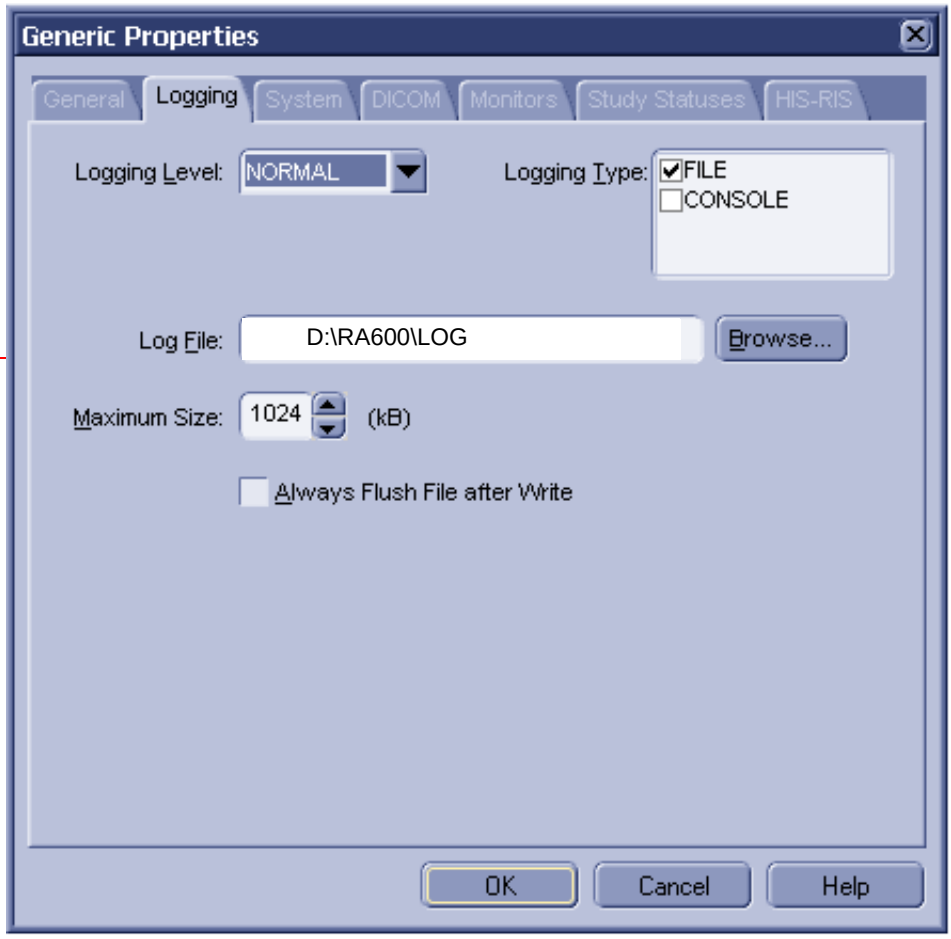


Figure 3-92 General Settings - Logging

3-5-3-3 Logging (cont'd)

- **Logging Level:** Set the level of logging messages. If set to ALL, all messages will be logged. If set to NORMAL (the typical setting) only error messages will be logged.
- **Logging Type:** Set the types of logging used by the RA 600 application. (Default: File)
  - **File:** If this check box is checked, RA 600 will write general information about its operation to the RadWorks.log file, which you can view in the Log folder.
  - **Console:** If this check box is checked, LOGIQworks will display a window that continuously shows the actions LOGIQworks is performing. This is useful when troubleshooting.
- **Log File:** Set the name of the general log file. Each Service has its own default log filename. See the Database Service, Connection Service and Print Service properties for details.

  (Default: [DATADIR%\log\workstation.log%)]; DO NOT CHANGE THE DEFAULT SETTINGS!)
- **Maximum Size (kB):** Set the maximum size of the log file.

  Set the Maximum Size of the log file to 0 to disable log file truncation. This can be very handy for troubleshooting. (Default: 64 kB)
- **Always Flush File after Write:** If checked, all logging actions will be written immediately to the log file. This option will have a serious impact on the performance of LOGIQworks, so it should not normally be checked. (Default: not checked)

3-5-3-4 Popup Menu

To select/deselect popup menu:

1.) Select **Configuration** > **User...** from the Data Selector menu.
2.) Select the Popup Menu tab from the User Properties dialog.

3-5-3-4 Popup Menu (cont'd)

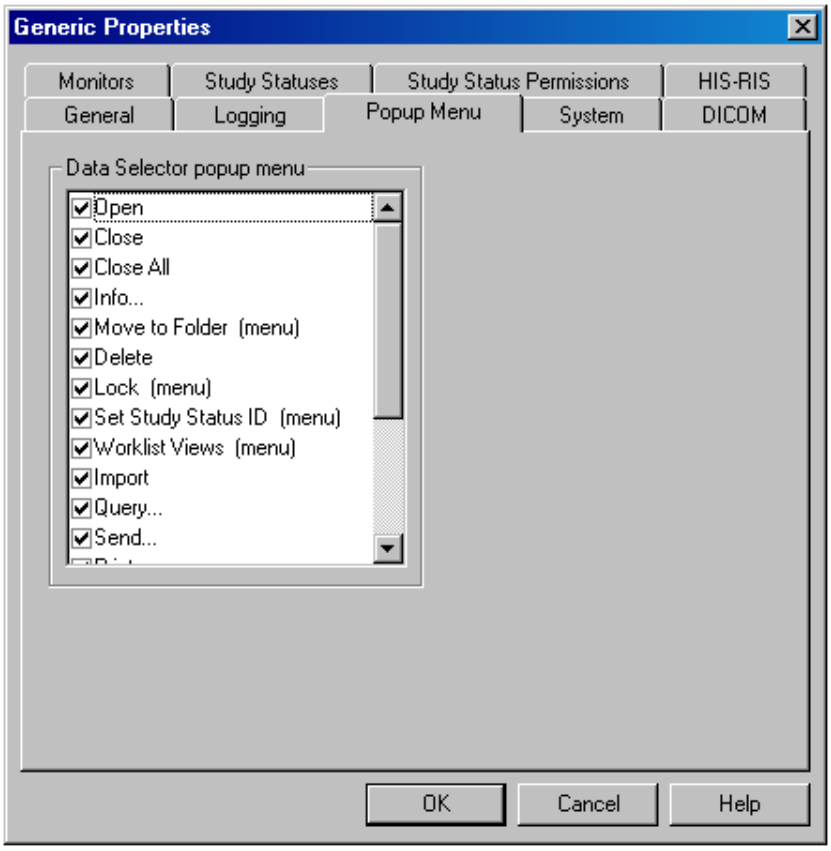


Figure 3-93 General Settings - Popup Menu

Check the boxes next to the menu items to select the ones you want to appear on the pop-up menu that appears when right-clicking in the Data Selector.

3-5-3-5 System Properties

To set display (system) properties:

1.) Select **Configuration** > **Generic...** from the Data Selector menu.
2.) Select the System tab from the Generic Properties dialog.

3-5-3-5 System Properties (cont'd)

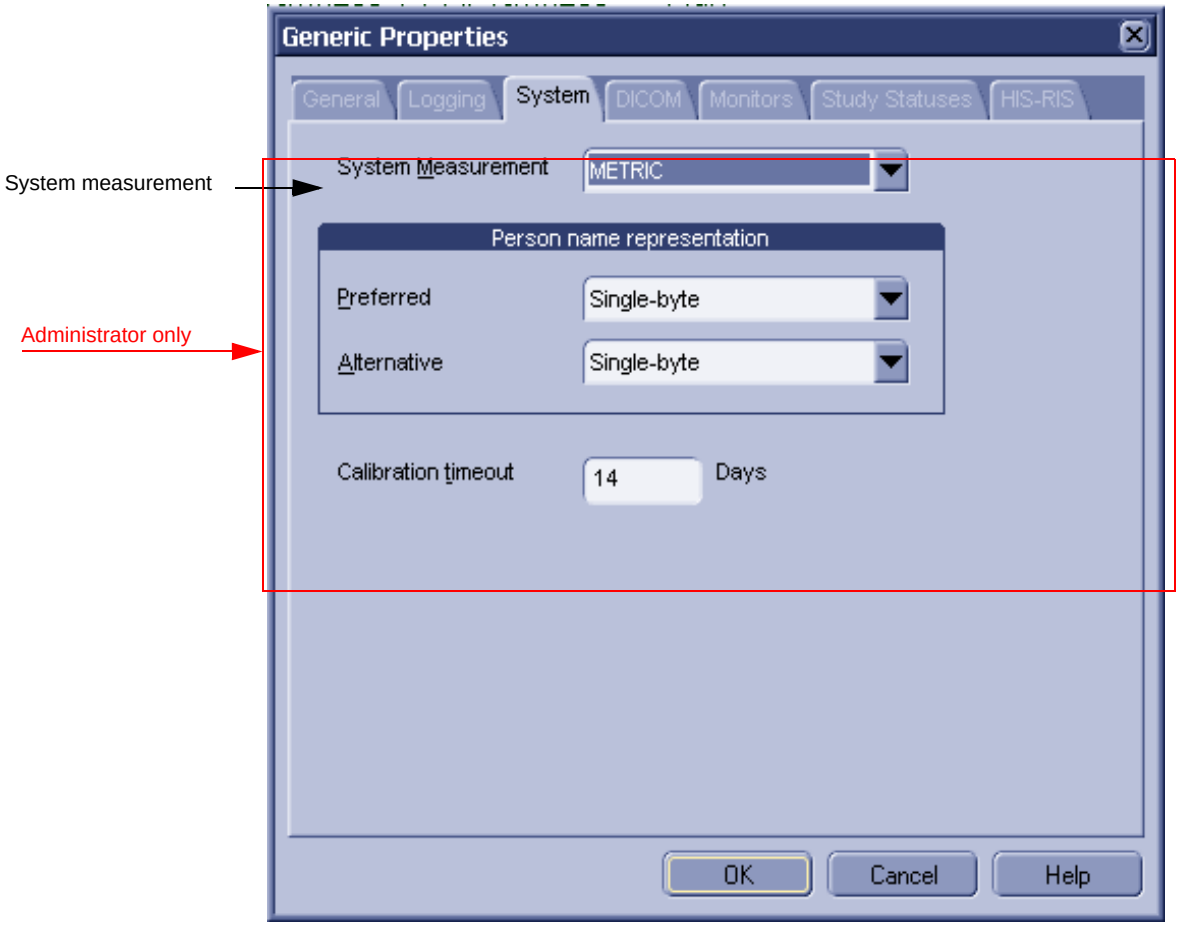


Figure 3-94 Generic Properties - System Settings

- **System Measurement:** Select the units of measurements you want LOGIQworks to use from the drop-down list. If you select REGIONAL SETTINGS (see Figure 3-74), LOGIQworks will use the settings as specified in Regional Settings in the Windows Control Panel (see Section 3-5-1-2 on page 3-70). (Default: METRIC)

If you wish to overrule Windows' regional settings, you can select either METRIC (Default setting) or US from the drop-down list. LOGIQworks will then use millimeters or inches irrespective of what is specified in the Windows Control Panel.

3-5-3-5 System Properties (cont'd)

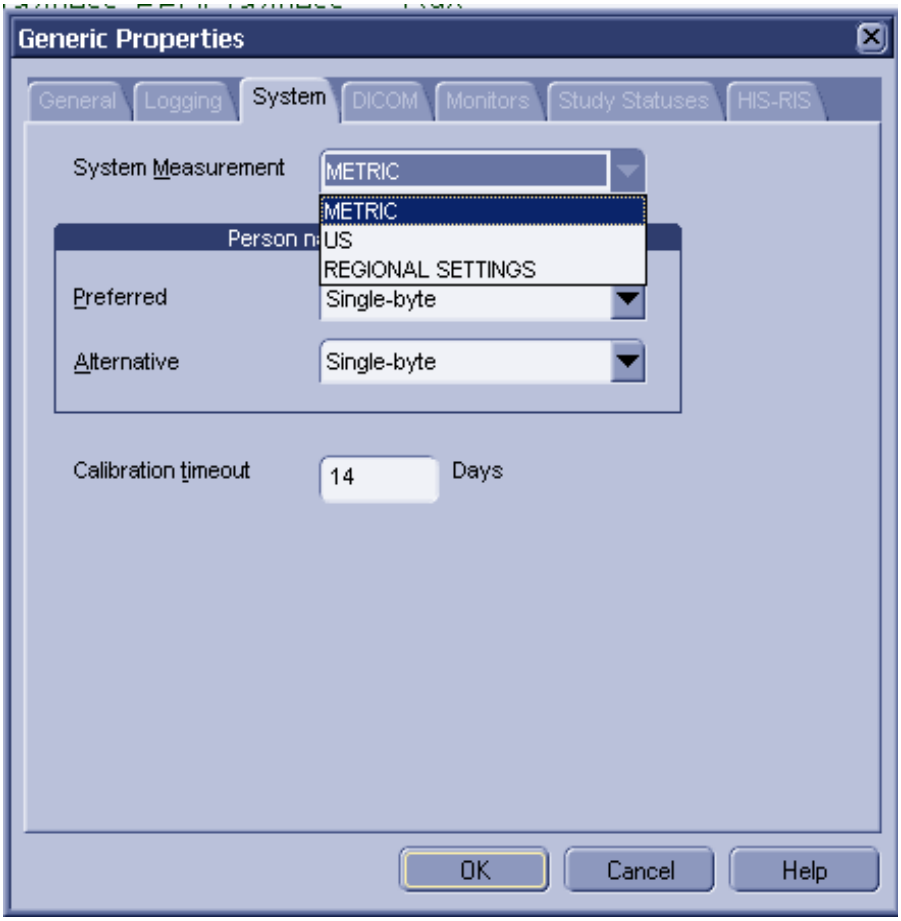


Figure 3-95 Generic Properties - System Settings (2)

- **Person name representation**:
  Here you can indicate how you want patient names to appear on work lists.
  - **Preferred**: Select from the drop-down list how you would like to display names on patient lists. The choices are:
    * Single-byte: displays patient names using the single-byte character set typical for displaying European languages. (Default)
    * Ideographic: displays patient names by means of double-byte character sets typical for displaying far-eastern languages such as Japanese, Chinese and Korean.
    * Phonetic: also displays patient names using double-byte character sets, but shows the phonetic representation of patients' names, not the ideographic representation.
  - **Alternative:** Allows you to indicate an alternative method of displaying names if the first method is not a viable option. (Default: Style-byte)
- **Calibration time-out**: Set the number of days before calibration of the monitor is required for true size display. Monitors used for true size display must be re calibrated regularly to ensure that they provide accurate results. (Default: 14 days)

3-5-3-6 DICOM settings

To set the DICOM properties for your LOGIQworks system:

1.) Select **Configuration** > **Generic...** from the Data Selector menu.

2.) Select the DICOM tab from the Generic Properties dialog.

These steps describe how to enter the correct Application Entity Title and Port number.

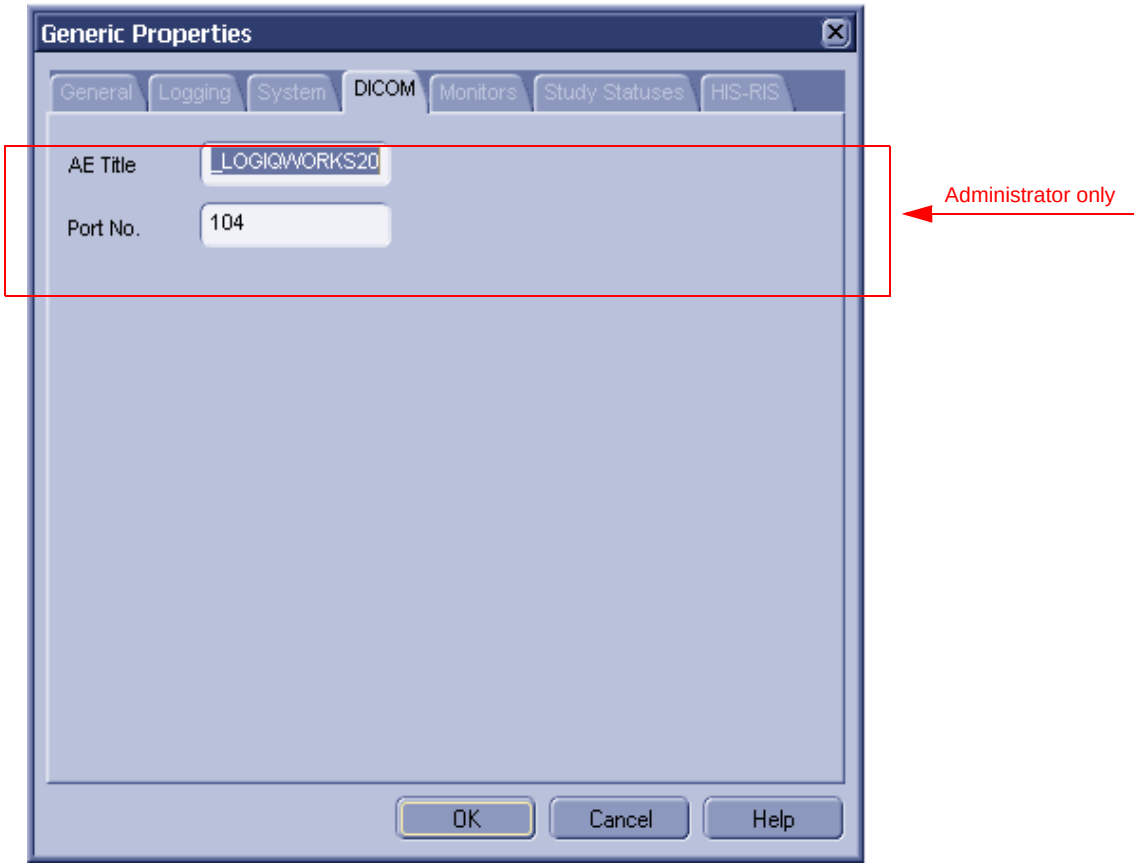


Figure 3-96 DICOM settings

- **AE Title:** DICOM Application Entity title for the DICOM services provided by your system. The AE Title entered here should be used by other systems to set up DICOM associations to your system.

  The same AE Title is also used by your system when it sets up associations to other systems. The AE Title is then referred to as the calling AE Title.

NOTE *For LOGIQ 7 the AE Title has always to begin with "AE_" otherwise the images can not be transferred.*

- **Port No.:** Socket port number for the DICOM services provided by this system. The Port Number is used by other systems to set up DICOM associations to this system.(Default: 104)

NOTE *Reboot entire system after any change to DICOM settings.*

3-5-3-7 Monitors of System Dell Precision 380 and Dell Precision 390

To set up LOGIQworks for use with single monitor log on as system administrator:

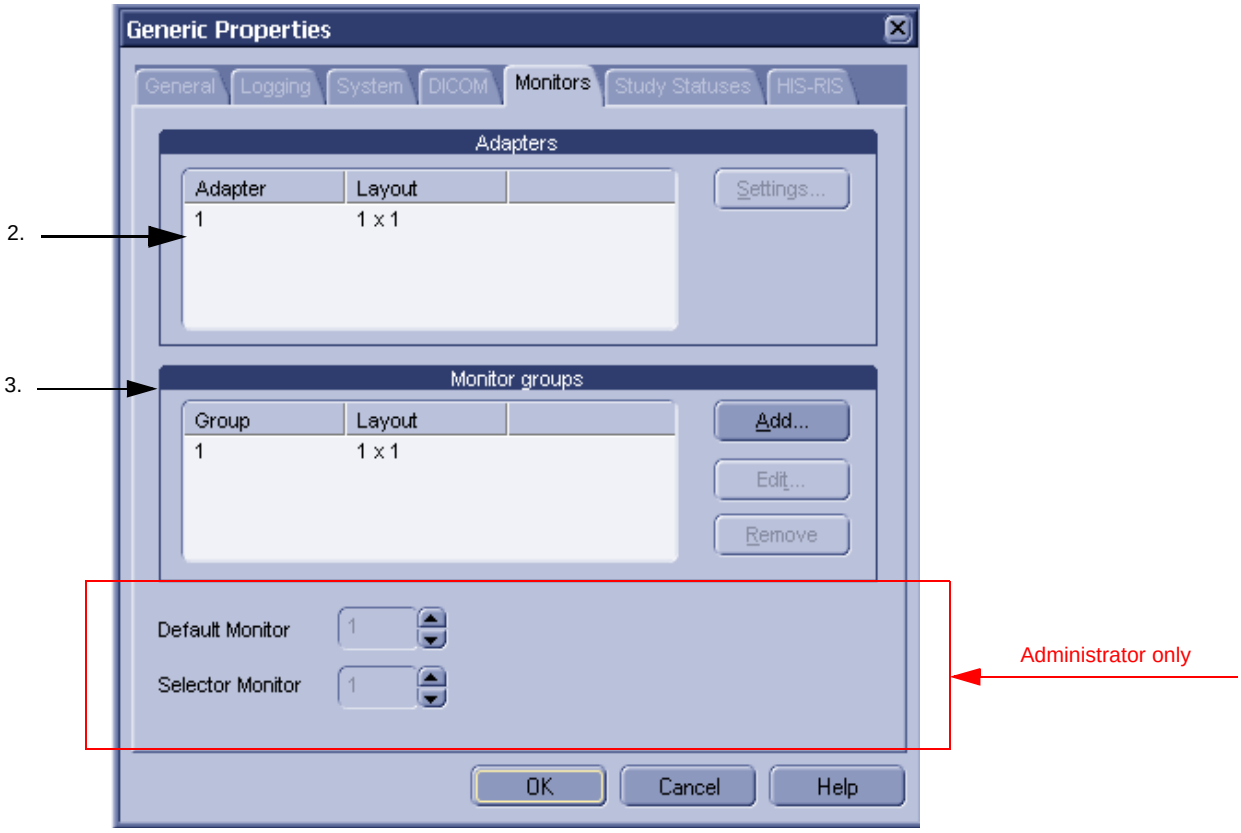


Figure 3-97 Single Monitor Setup for Dell 380 and for Dell 390

1.) Select **Configuration** > **User...** from the Data Selector menu and click the monitor tab.
2.) Select the Adapter and click Settings. Specify that 1 row and 1 column of monitors (1x1) are connected to that adapter.
3.) Select the Monitor Group and click Edit..... Specify that 1 row and 1 column of monitors (1x1) is defining this group.
4.) The “Default Monitor” is set to 1. All other settings are not accepted.
5.) The “Select Monitor” is set to 1. All other settings are not accepted.
6.) Restart LOGIQworks.

3-5-3-7 Monitors of System Dell Precision 380 and Dell Precision 390 (cont'd)

Setting up LOGIQworks for use with dual monitors for true dual graphic card log on as system administrator.

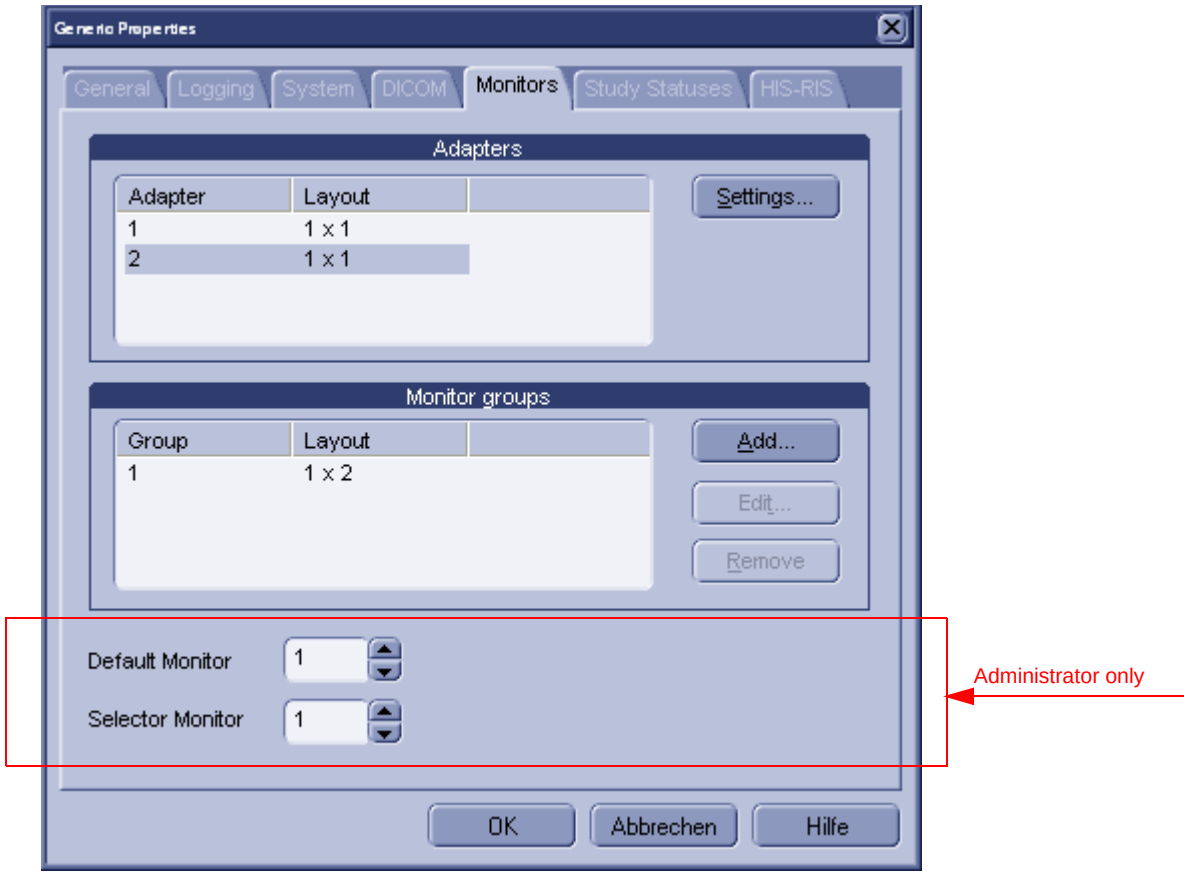


Figure 3-98 Simulated Dual Monitor Setup for Dell 380 and Dell 390

3-5-3-8 Study Statuses

To add/remove/modify study statuses:

1.) Select **Configuration** > **User...** from the Data Selector menu.
2.) Select the Study Statuses tab from the User Properties dialog.

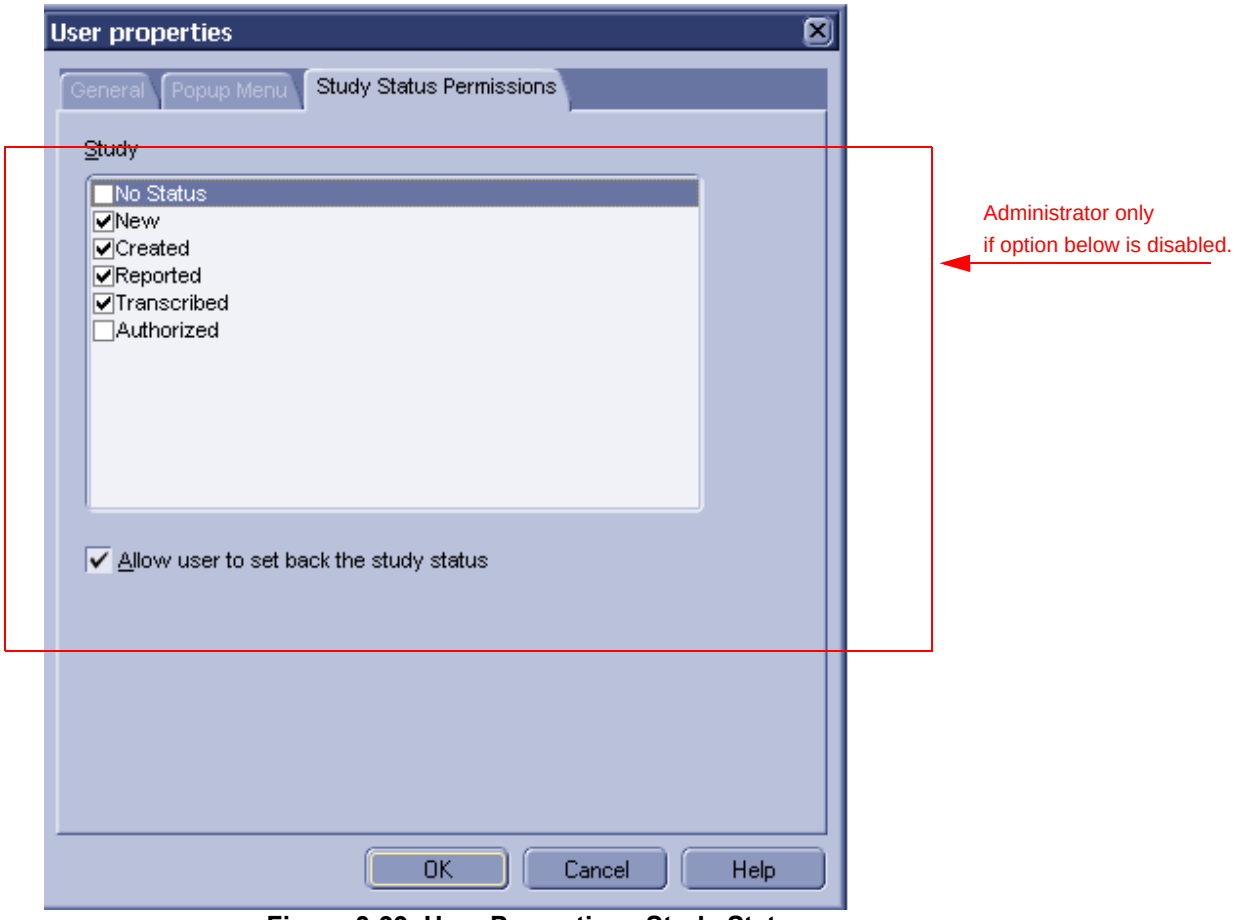


Figure 3-99 User Properties - Study Statuses

You can add study statuses to be stored in the Data Selector with a selected study (use this Generic Properties page to do so) or to be saved with the study in the Save Data dialog drop-down list in the Viewing Section (see Section 3-5-2-12 on page 3-99 in the Configuration Menu).

The priority of the statuses is from low to high reading from the top of the list down.

Statuses can be entered in various ways. The status written first (in capital letters) is the official DICOM description and will be stored in the database. This status description may not consist of words separated by a space. If you want to use two words, use an underscore character between them.

3-5-3-8 Study Statuses (cont'd)

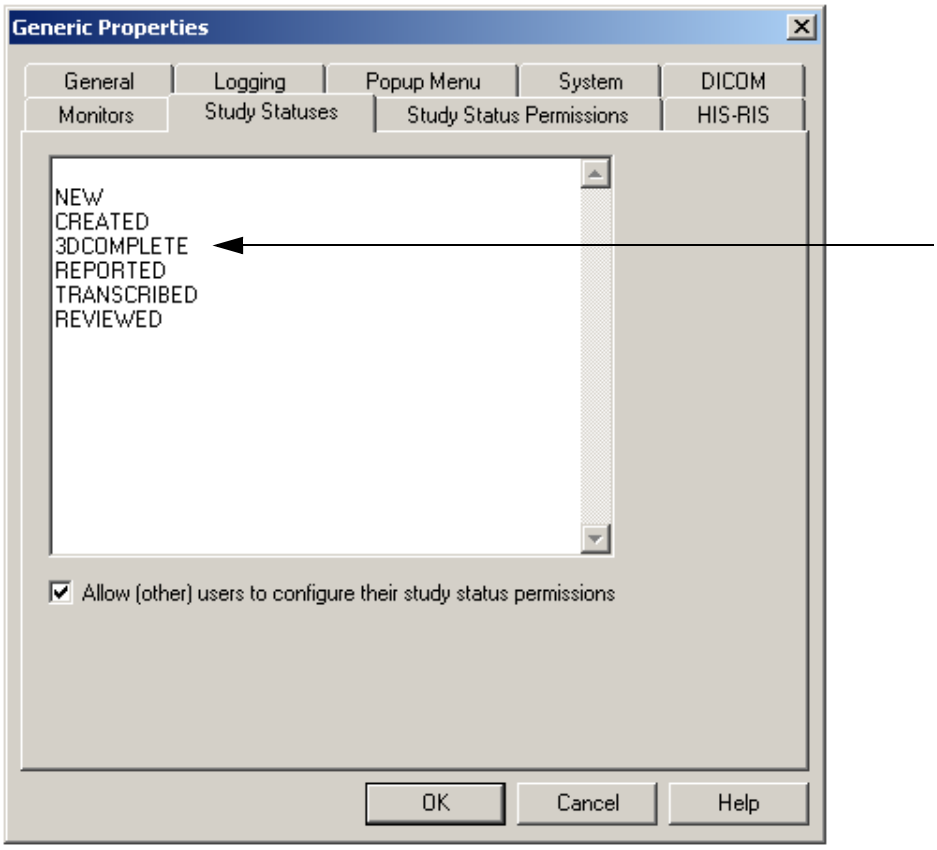


Figure 3-100 Study Statuses including user defined status

The backslash separates the DICOM description with your own description of that particular status. For this you may use more than one word separated by spaces.

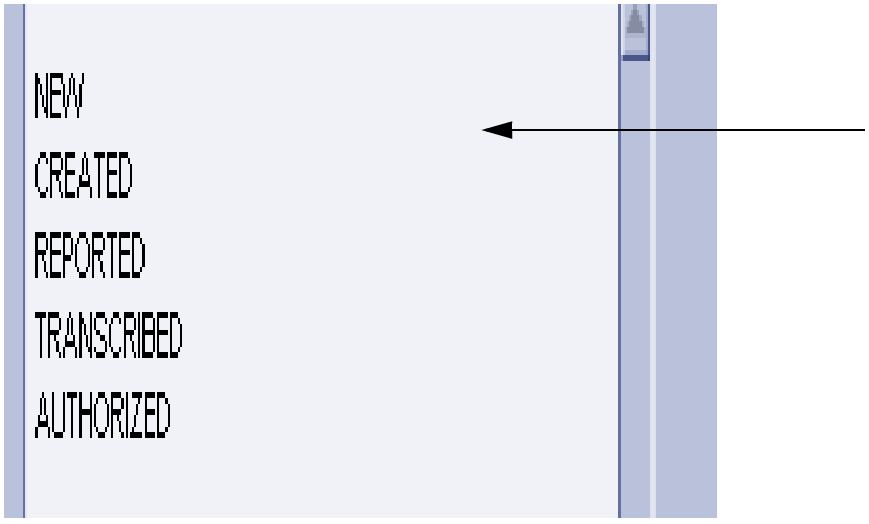


Figure 3-101 User defined status with description

3-5-3-8 Study Statuses (cont'd)

After adding the necessary statuses, the System Administrator has to configure the status permissions for each LOGIQworks user. The **Allow (other) users to configure their status permissions** check box must be checked (default after installation) in order to do this. Each user of this particular workstation should be present while doing so.

Once all the status permissions have been configured, the System Administrator should uncheck the **Allow (other) users to configure their status permissions** check box by logging on as Administrator.

3-5-3-9 Study Status Permission

To set/remove Study Statuses Permission for a certain user:

1.) Select **Configuration** > **User...** from the Data Selector menu.
2.) Select the Study Status Permissions tab from the User Properties dialog.

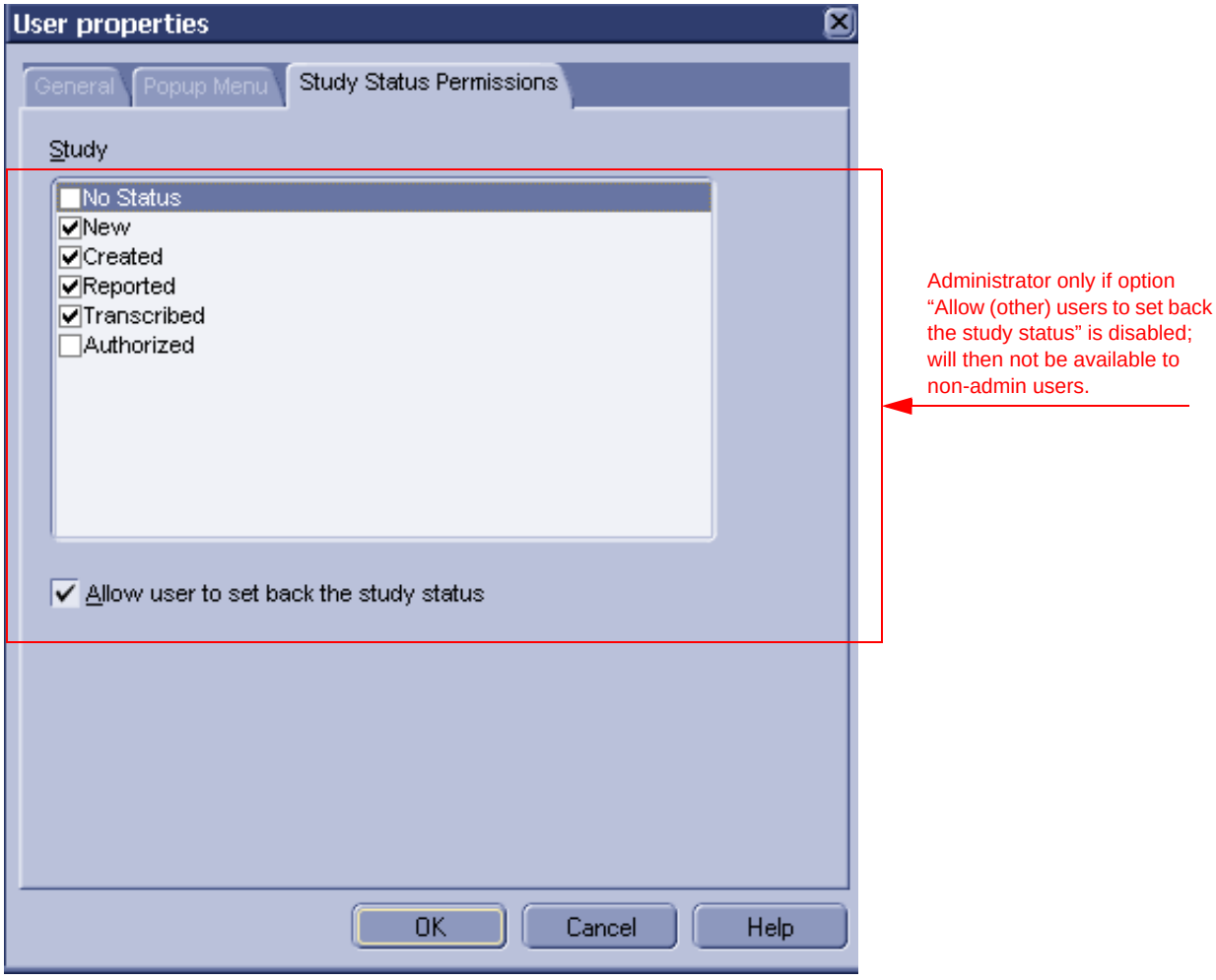


Figure 3-102 User Properties - Study Status Permission (Default)

3-5-3-9 Study Status Permission (cont'd)

.

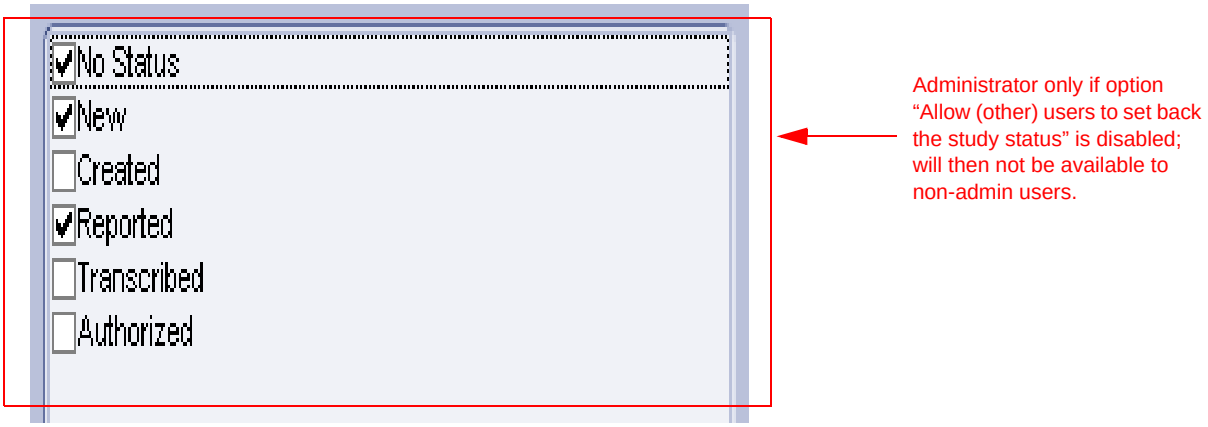


Figure 3-103 User Properties - Study Status Permission (with user added study status)

Set which study statuses the user will be able to select from when presented with the opportunity to change study status while using LOGIQworks.

Check the check boxes of the statuses the user will be able to select.

The user can be allowed to set the status back to a 'lower' one, from 'Authorized' to 'Created' for example. In some cases, however, this may cause workflow problems. Check the **Allow user to set back the study status** check box if you want a user to be able to set back the study status on the workstation.

Figure 3-104 Study Status in Data Selector

3-5-3-10 HIS-RIS

To configure HIS-RIS implementations, add/remove/modify worklist:

1.) Select **Configuration** > **Generic...** from the Data Selector menu.

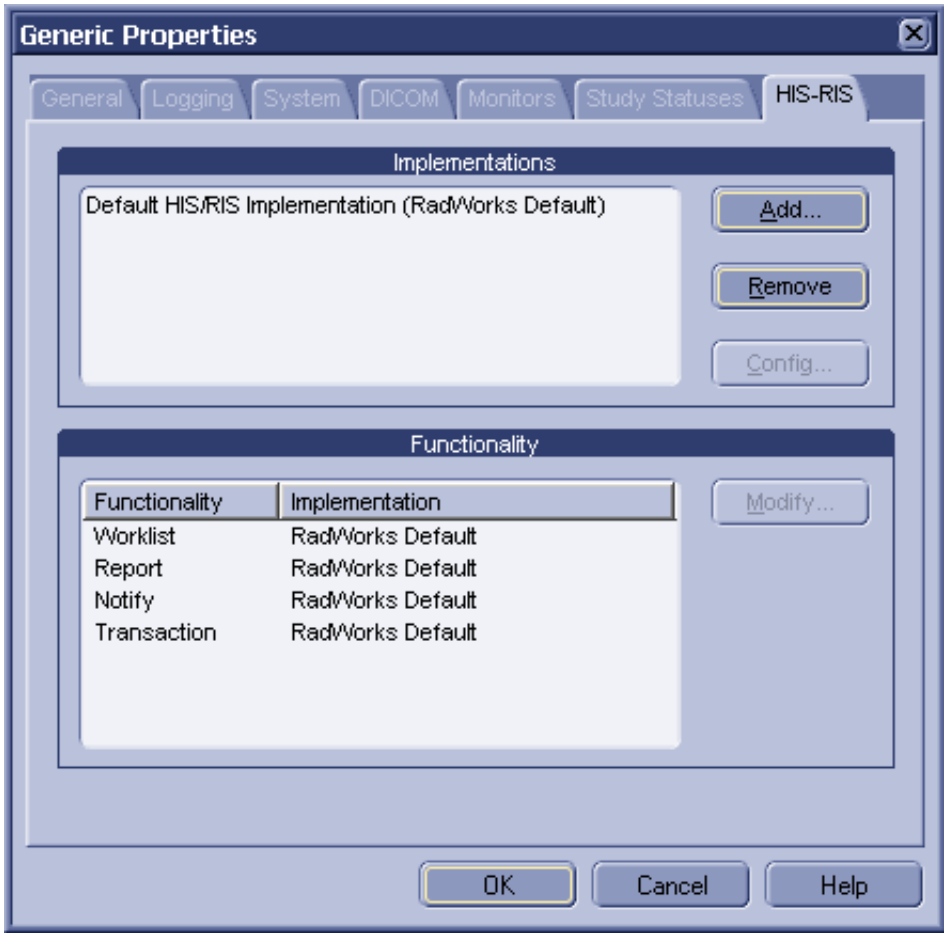


Figure 3-105 Generic Properties - HIS-RIS

In order to be able to use work lists you must configure or add HIS-RIS implementations. LOGIQworks comes with several Dynamic Link Libraries (DLL) which enable the system to connect to a HIS-RIS system, providing there is an external program that can make use of the supplied DLLs.

By default, the HIS-RIS Manager uses its own DLL, which allows you to work with Local Database and DICOM Modality Work lists.

- **Implementations:** During installation of LOGIQworks a default implementation will be installed.
  - Click the **Add...** button to add a pre-defined HIS-RIS implementation. You can only add an implementation if your system is connected to a HIS-RIS system.
  - Click on an implementation in the list and then on **Remove** to delete it from your system.
  - Click **Config...** to configure your HIS-RIS system. If you are not connected to a HIS-RIS system you need not change the default values in this dialog.

Please refer to Section 3-5-11-1 "Reading DICOM volume from DVD or CD" to learn how to add a Study/Patient List DVD or CD with DICOM volume on CD or DVD as source database.

3-5-3-10 **HIS-RIS** (cont'd)

- **Functionality**

  The Functionality list shows the various functionalities which are available in the HIS-RIS Implementations.

  - **Worklist:** The Worklist which will be retrieved from the HIS-RIS and shown in the Data Selector.
  - **Report:** The HIS-RIS which will send report information (whether a report should be written or if the study has already been authorized)
  - **Notify:** The HIS-RIS which will be informed about study changes, etc.
  - **Transaction:** The HIS-RIS which will be queried for matching, accepting key images, etc.

  Click on a functionality and then on Modify... to use a different HIS/RIS implementation for the functionality.

3-5-3-11 Viewing Properties

To set general viewing properties:

1.) Select **Configuration** > **Viewing...** from the Data Selector menu.
2.) Select the General tab from the Viewing Properties dialog.

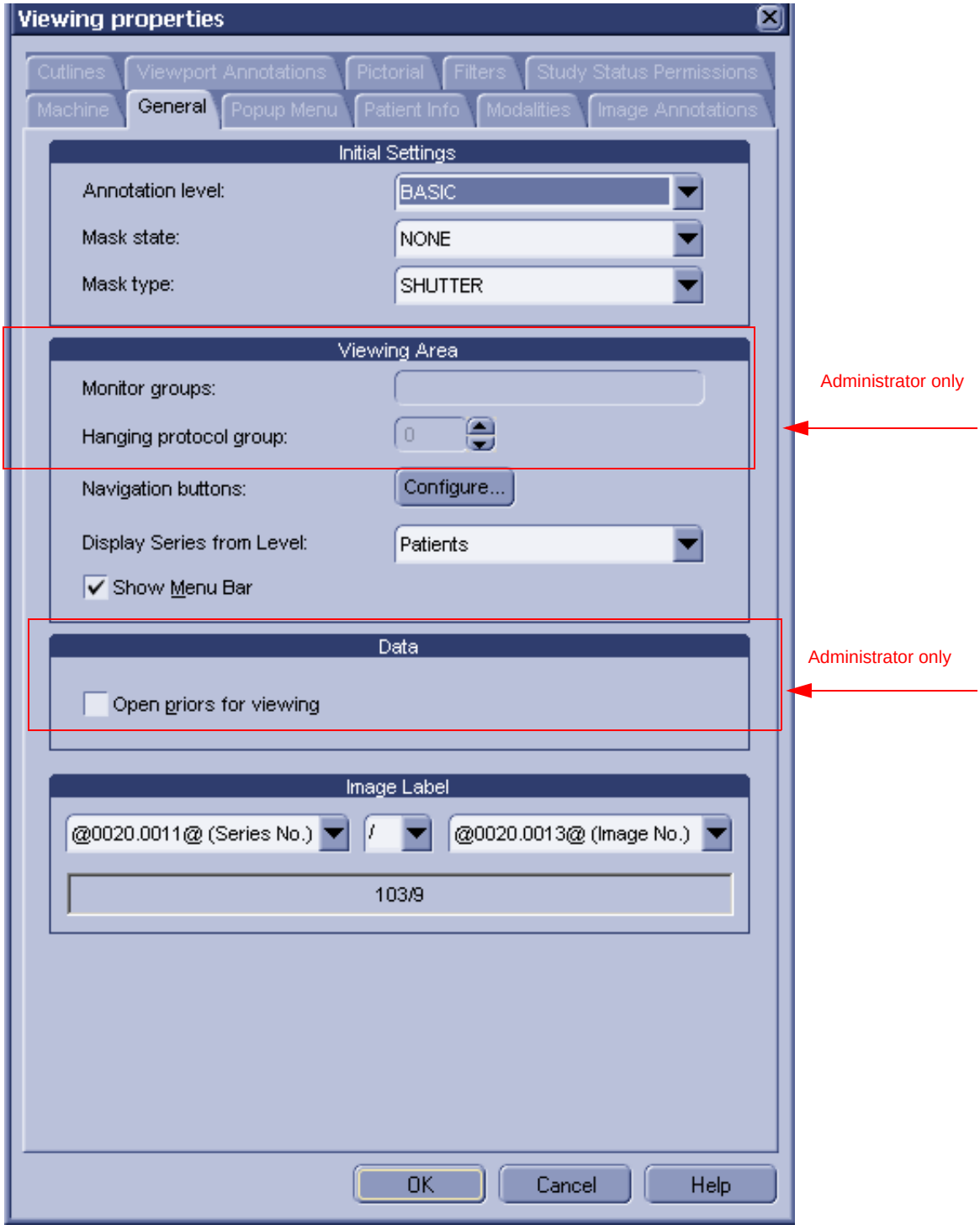


Figure 3-106 Viewing Properties - General

3-5-3-11 Viewing Properties (cont'd)

Use the General tab of the Viewing Properties page to define general properties of the Viewing Section.

- **Initial Settings**
  - **Annotation level:** Annotation level that is initially used in the Viewing Section.
  - **Mask State:** Set how masks are displayed when entering the Viewing Section.
  - **Mask Type:** Set the type of mask that will appear as the default in the drop-down list at the top of the Masks tool tab in the Viewing Section.
- **Viewing Area**
  - **Monitor groups:** Specifies the number of monitor groups you configured. Leave the field blank to have LOGIQworks display on all monitors.
  - **Hanging protocol group:** Specifies the group to which you want to apply your hanging protocols.
  - **Navigation buttons:** Click the Config... button to customize where you want to position the Up, Down, Up Series, Down Series, Previous, Next and Back buttons in the Viewing Section.
  - **Display Series from Level:** Select the default that determines how LOGIQworks should fill the series area of the Viewing Section when you view multiple studies.
    - Select **Patients** if you want to display the first series of each patient when opening multiple items for viewing.
    - Select **Studies** if you want to display the first series of each study when opening multiple items for viewing.
    - Select **Series** if you want to display all the series of the first study, and then all the series of any remaining studies.
  - **Show Menu Bar:** Check this check box if you want LOGIQworks to display in the Viewing Section a menu bar with commands for viewing images.
- **Data**
  - **Open Priors for viewing** Opens for viewing priors associated with a study in the relevant worklist.
- **Image Label**

Please refer to the RadWorks 7.0 Installation guide for more information on the viewing properties and the other configuration tabs on the Viewing Properties page.

3-5-3-12 TripleMonitors for LOGIQworks FX and LOGIQworks SoftwareOnly

The following configuration steps assume, that you already have two monitors configured for your RA600 / CA1000 system, and that you have now purchased a 3rd monitor and the LOGIQworks plugin, and would like to extend your system to a TripleMonitor system.

In order to use the TripleMonitor configuration capabilities together with the LOGIQworks plugin, Minimum RA600 /CA1000 SP 11 software patch is required. For reference see FX Installation Manual English, Direction Number 5184015-100 or Software Installation Manual English, Direction Number 5184018-100.

For Installation of the LOGIQworks plugin, also refer to same manuals. Make sure that you have checked the hanging protocol checkbox.

NOTE After you have installed the LOGIQworks software, you will notice that you now have a desktop icon titled "LOGIQworks". You MUST double click this if you wish to review any images in the LOGIQworks plugin.

3-5-3-12-1 Connecting your 3rd monitor

1.) Connect your 3rd monitor to the system.

NOTE We strongly recommend that you connect the 3rd monitor as your left-most monitor for the LOGIQworks integration.

2.) Restart the system.
3.) Ensure that your system now recognizes all 3 monitors.

3-5-3-12-2 Configuring RA600 / CA1000

1.) Double click the LOGIQworks desktop icon
2.) Click the Configuration -> Generic menu, and click the Monitors tab
3.) It should look roughly like this:

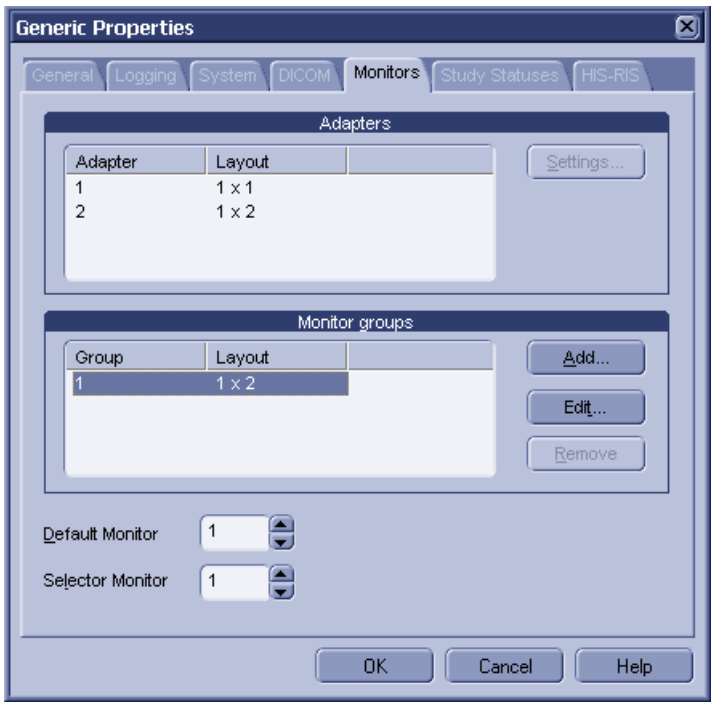


Figure 3-107 TripleMonitor Generic Properties

3-5-3-12 TripleMonitors for LOGIQworks FX and LOGIQworks SoftwareOnly (cont'd)

NOTE Your Adapters section may have three entries with "1 x 1". This is fine.

NOTE Your Monitor groups section may have two entries, each with "1 x 1". This is fine.

4.) Reconfigure your Monitor groups section so that you have two entries here; the 1st entry with a "1 x 1" layout, and the 2nd entry with a "1 x 2" layout.

5.) After this, the dialog should look like this:

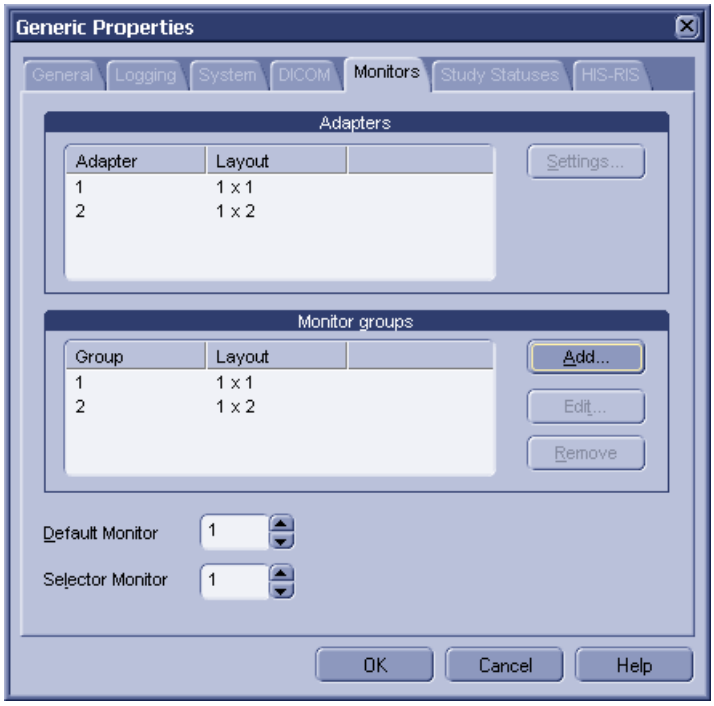


Figure 3-108 TripleMonitor Generic Properties

NOTE Your Adapters section may just have one entry with "1 x 3". This is fine.

6.) Quit and restart RA600 / CA1000 as prompted.

7.) Click the Configuration -> Viewing menu, and click the General tab.

3-5-3-12 TripleMonitors for LOGIQworks FX and LOGIQworks SoftwareOnly (cont'd)

8.) Set the number in the "Hanging protocol group" text field to 2.

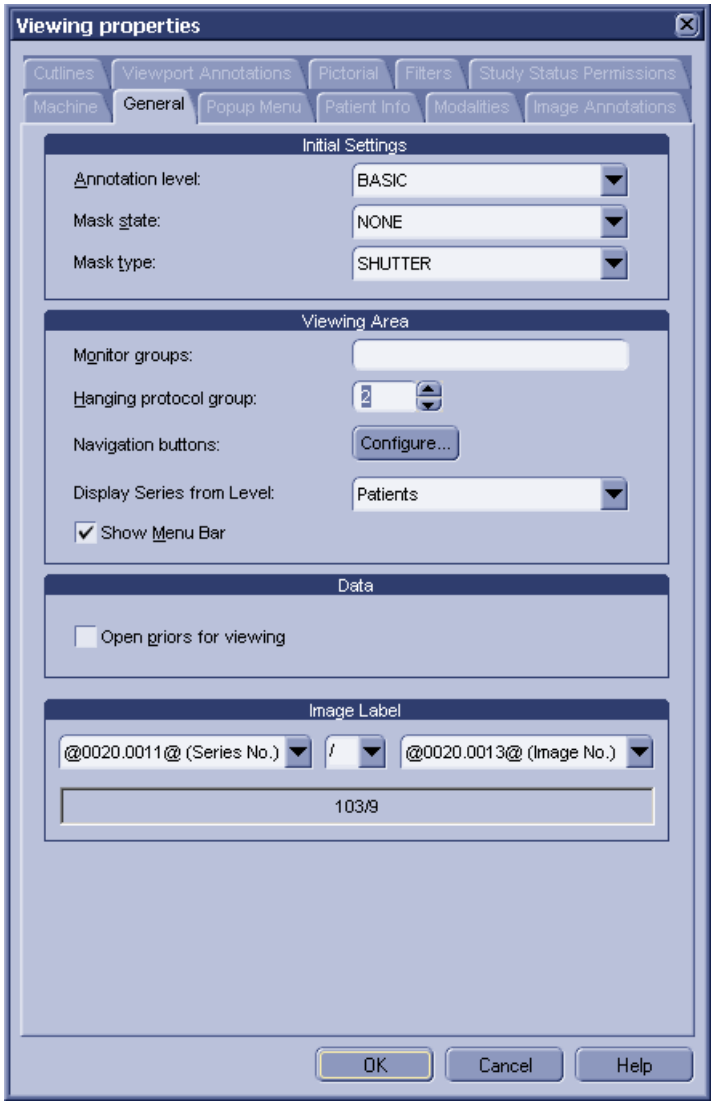


Figure 3-109 TripleMonitor Viewing Properties

9.) Quit and restart RA600 / CA1000 as prompted.

3-5-3-12-3 Configuring Your TripleMonitor System for Optimal Usage.

Your RA600 / CA1000 software should now initially launch on your newly configured left most monitor (if you were previously using two black & white hi-res monitors, you will notice that RA600 / CA1000 now initially launches in color).

1.) Double click any of your studies.

2.) You should now see the double clicked study opens up across the middle- and right-most monitors (essentially, it should look just as before).

3-5-3-12 TripleMonitors for LOGIQworks FX and LOGIQworks SoftwareOnly (cont'd)

3.) You should also see that your left most monitor essentially remains empty (it will most likely show a black empty viewport). It should look roughly like this:

Figure 3-110 TripleMonitor Black Empty Viewport

NOTE Your general UI configuration will most likely differ from the above screenshot. This is fine.

NOTE If you don't see a pictorial index visible on the left-most monitor, make it visible by selecting Layout -> Show Pictorial Index.

4.) On the left-most monitor, click Layout -> Show Data Selector. If you already see your data selector, then you don't have to do anything.

3-5-3-12 TripleMonitors for LOGIQworks FX and LOGIQworks SoftwareOnly (cont'd)

5.) You should now see your data selector on the left-most monitor. Your left-most monitor should look something like this:

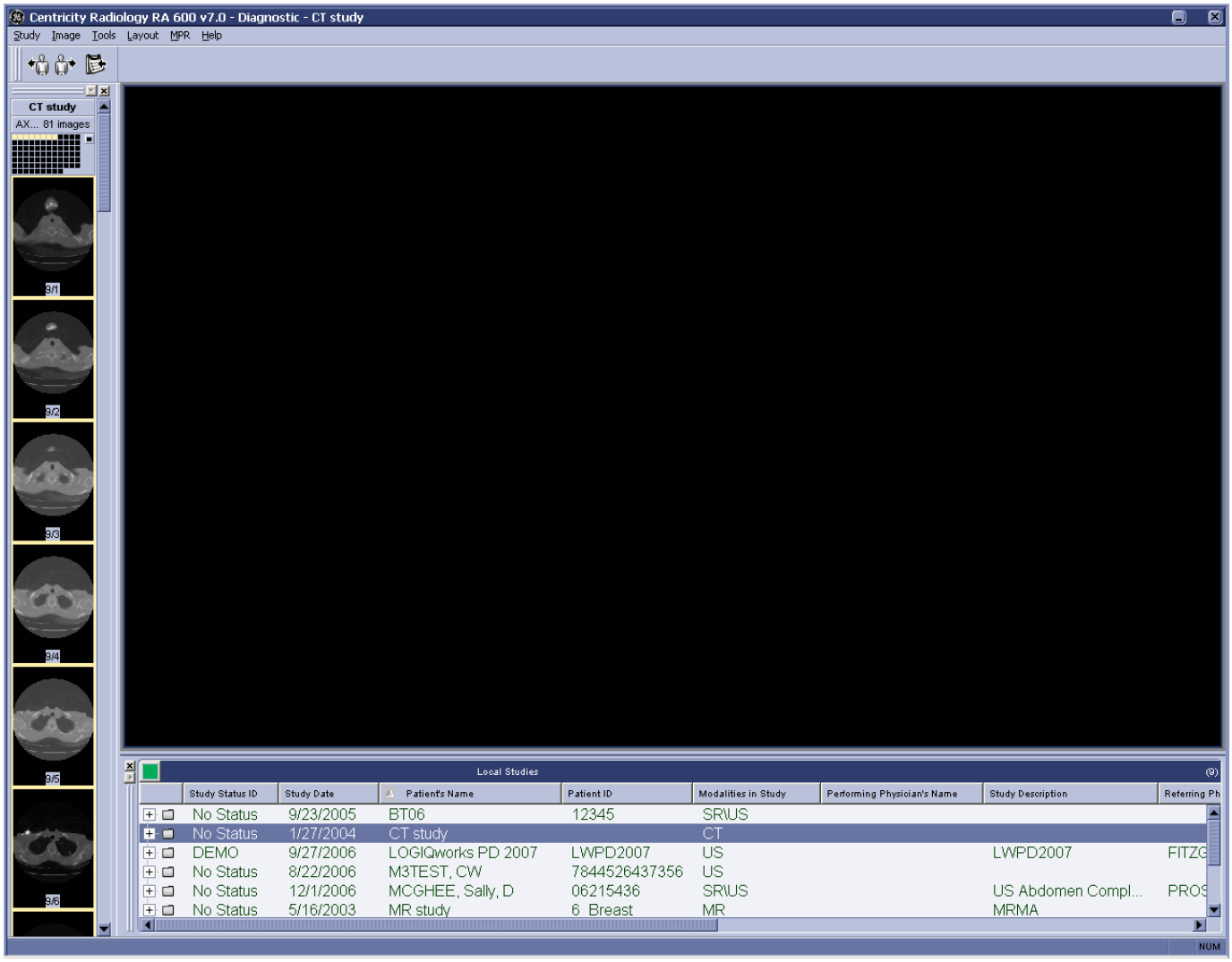


Figure 3-111 TripleMonitor Data Selector

3-5-3-12 TripleMonitors for LOGIQworks FX and LOGIQworks SoftwareOnly (cont'd)

6.) If the data selector doesn't expand to take up the entire workspace of the left-most monitor (as shown in the above screenshot), then click-grab the top edge of the data selector window, and drag the window upwards to take up the entire space of the left most monitor:

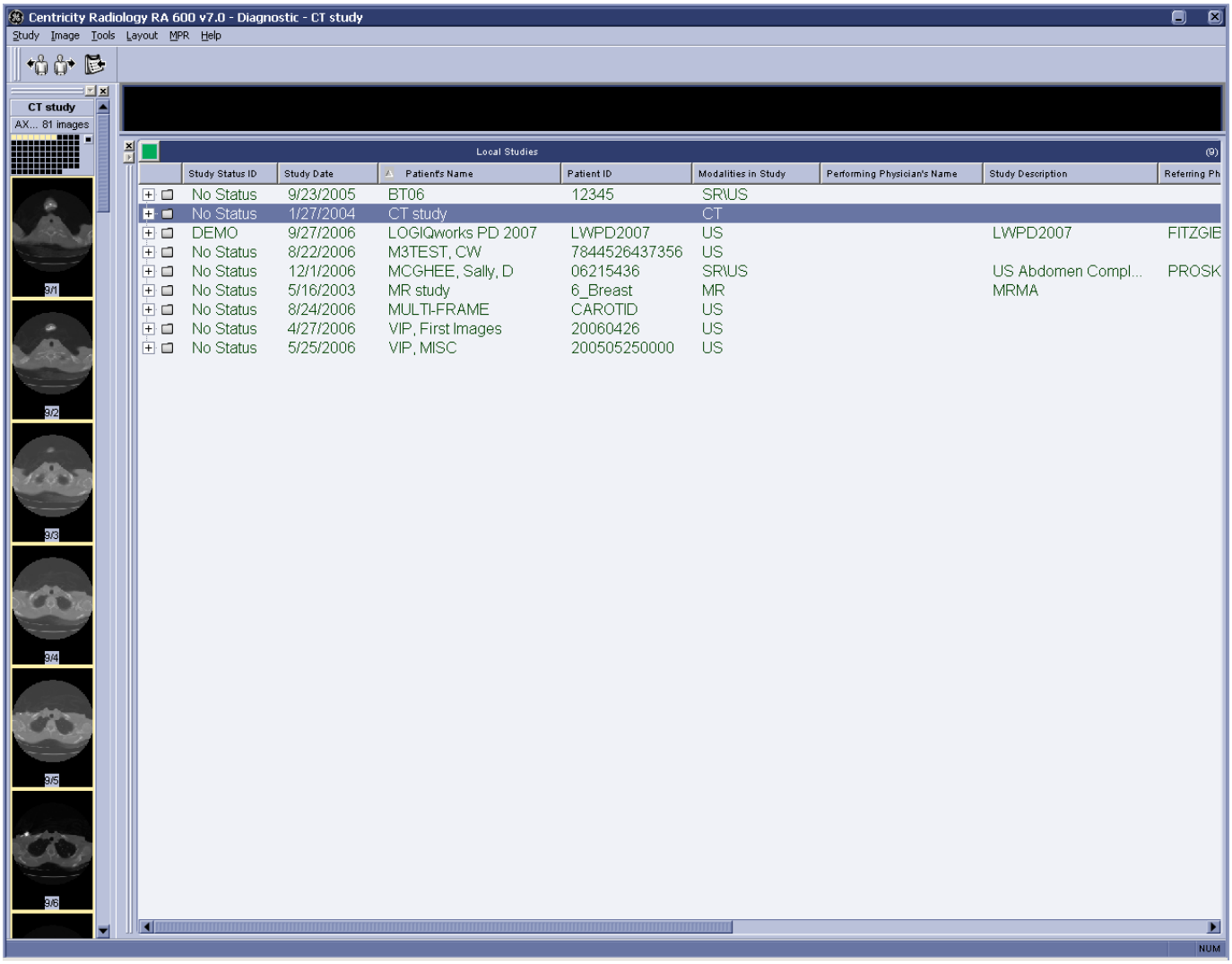


Figure 3-112 TripleMonitor Expanded Data Selector

NOTE Your data selector may not take up the entire space of the left-most monitor (as shown in the above screenshot). This is fine.

7.) On the middle monitor, you may have a pictorial index visible. To maximize your screen real estate, we recommend that you hide the pictorial index on the middle monitor since you already have a pictorial index visible on the left-most monitor.

3-5-3-12 TripleMonitors for LOGIQworks FX and LOGIQworks SoftwareOnly (cont'd)

8.) To hide the pictorial index on the middle monitor, then select Layout -> Pictorial Index -> Hide on your middle monitor.

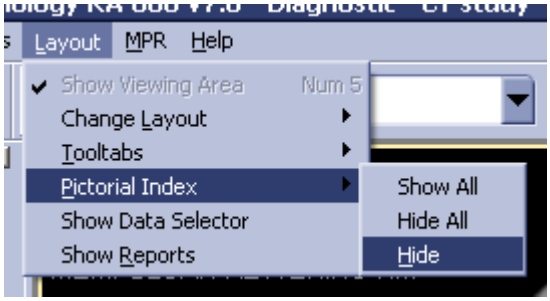


Figure 3-113 TripleMonitor Hide Pictorial Index

9.) Finally, it is recommended that your right-most monitor should have the RA600 / CA1000 tooltab visible. If it is not already visible, then select Layout -> Tooltabs -> Show on your right-most monitor.

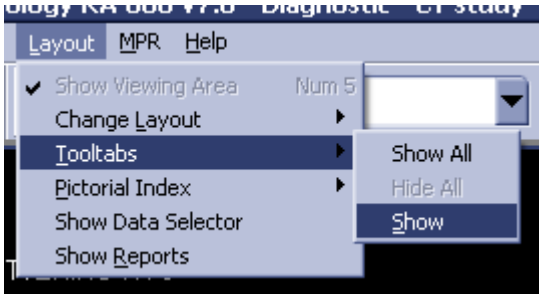


Figure 3-114 TripleMonitor Show Tooltabs

3-5-3-12-4 Summary Configuring RA600 / CA1000

In summary, this is how each of your monitors should be configured:

- Left monitor: Data selector visible, pictorial index visible
- Middle monitor: Viewport (nothing else)
- Right monitor: Viewport, and tooltab visible

3-5-3-12-5 Reviewing Your Images in the TripleMonitor Configuration Environment

With your new configuration, you should now be able to review your studies across two monitors just as before. With a study double clicked, just set focus in any of the viewports on either the middle or right monitor, and use the PgDn / PgUp keys, or mouse scroll wheel, or however you used to navigate your images.

To review another study, just double click the study you wish to review in the data selector on the left monitor, and the study should appear on the middle and right monitors (and the left monitor should remain as is).

3-5-3-12-6 Using the LOGIQworks plugin in the TripleMonitor environment

When you wish to review an image in the LOGIQworks plugin, we strongly recommend using the following workflow:

1.) Double click the study you wish to review an image from.
2.) Review the images of the study on the middle and right monitors, as you would normally.

3-5-3-12 TripleMonitors for LOGIQworks FX and LOGIQworks SoftwareOnly (cont'd)

3.) Once you have located the image you wish to open in LOGIQworks, set focus in the left monitor, and hit the "2" key on your num lock pad (make sure your Num Lock key is activated)

4.) This will hide the data selector on the left monitor, and display a black empty viewport.

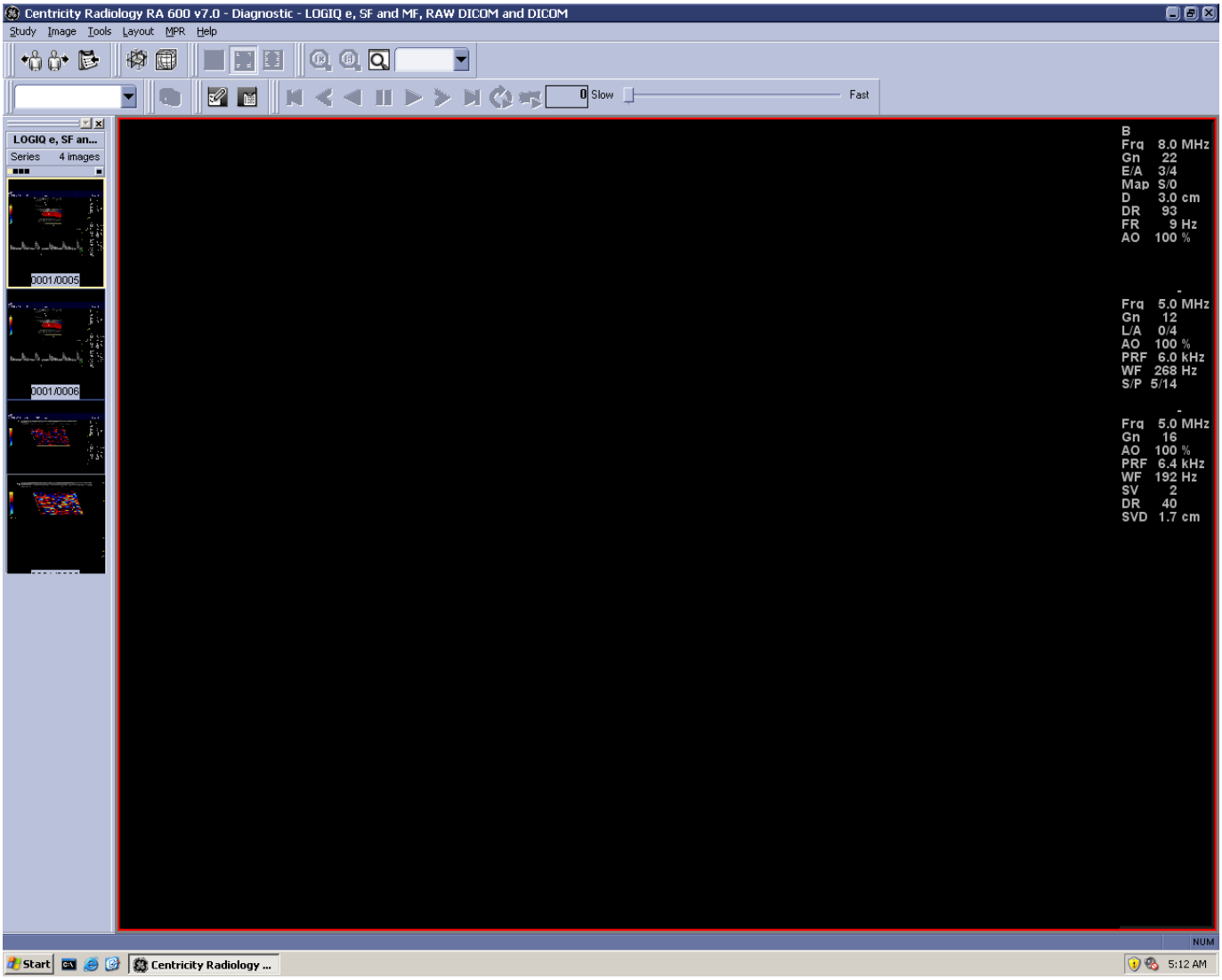


Figure 3-115 TripleMonitor Black Empty Viewport

5.) Click inside this viewport, and now locate the image you wish to review in the pictorial index on the left monitor.

3-5-3-12 TripleMonitors for LOGIQworks FX and LOGIQworks SoftwareOnly (cont'd)

6.) Click the image in the pictorial index, and you should now have that image visible in the viewport of the left monitor.

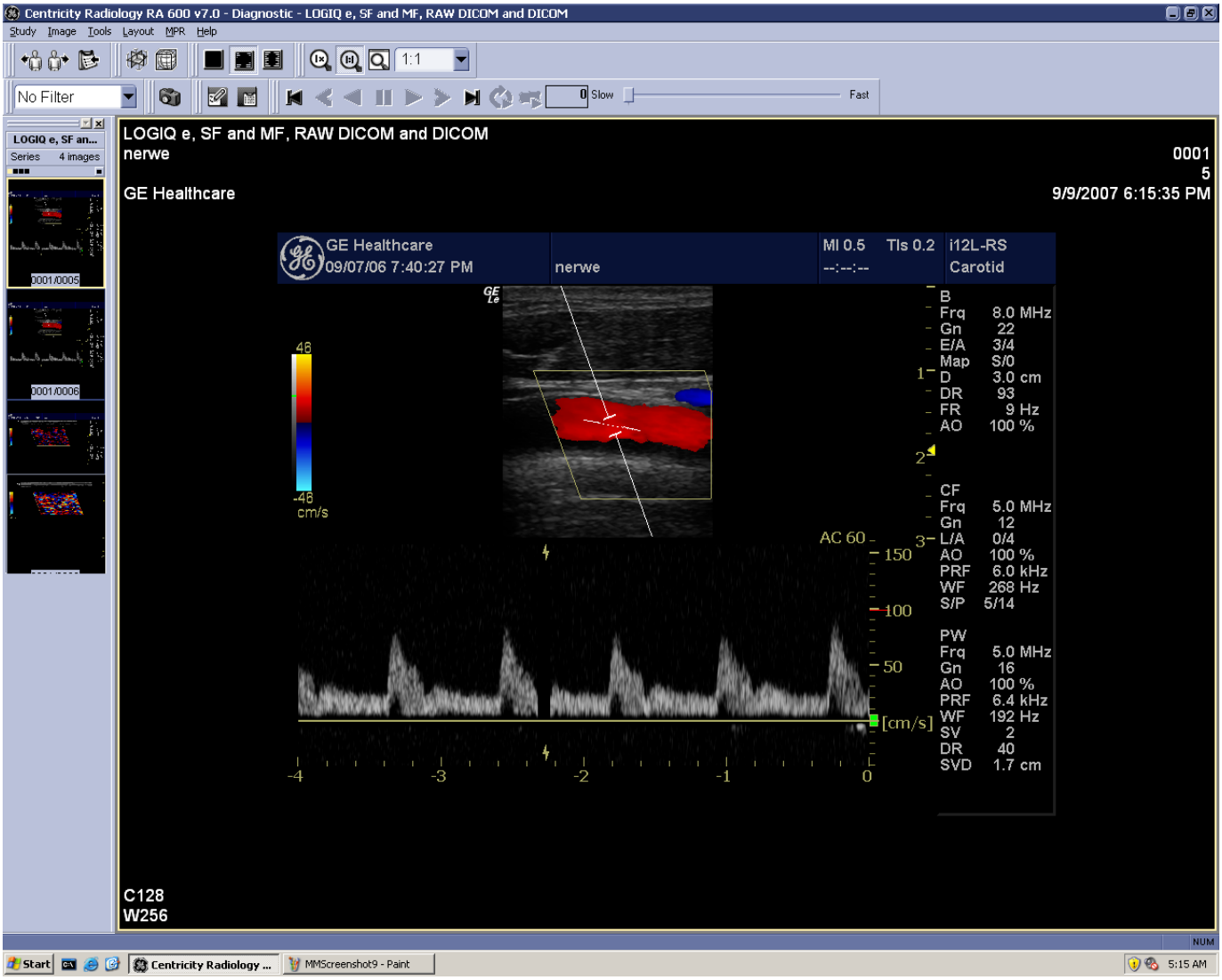


Figure 3-116 TripleMonitor Image Visible

3-5-3-12 TripleMonitors for LOGIQworks FX and LOGIQworks SoftwareOnly (cont'd)

7.) To activate the LOGIQworks plugin, right click in the viewport, and select Series Area Plugin -> TruAccess Raw Data Processing.

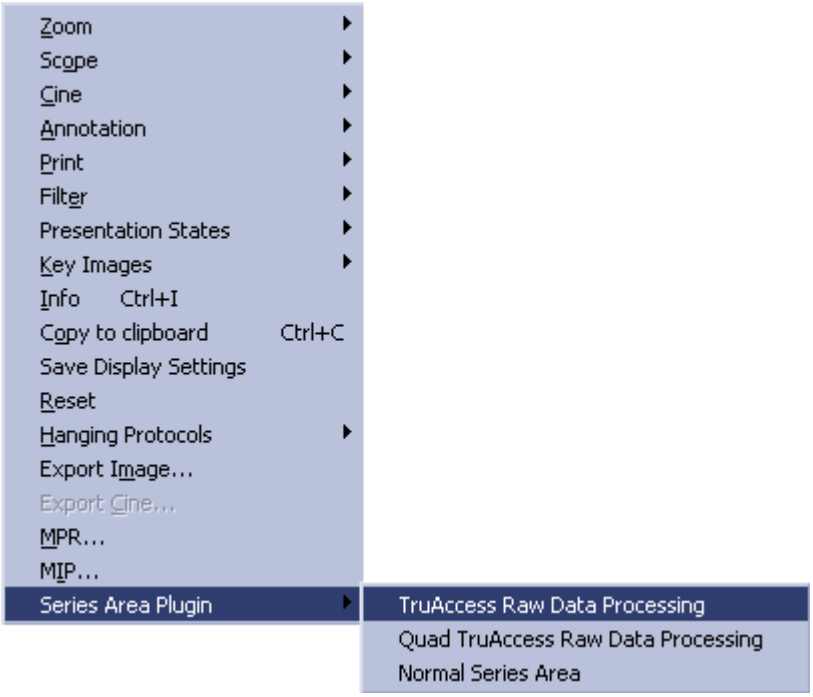


Figure 3-117 TripleMonitor TruAccess Raw Data Processing

8.) The selected image should now be open in the LOGIQworks plugin.

9.) With your num lock pad (make sure your Num Lock key is activated), hit the "3" key.

3-5-3-12 TripleMonitors for LOGIQworks FX and LOGIQworks SoftwareOnly (cont'd)

10.) This will display the RA600 / CA1000 toolbars on the left monitor. This is where all the LOGIQworks related controls are located.

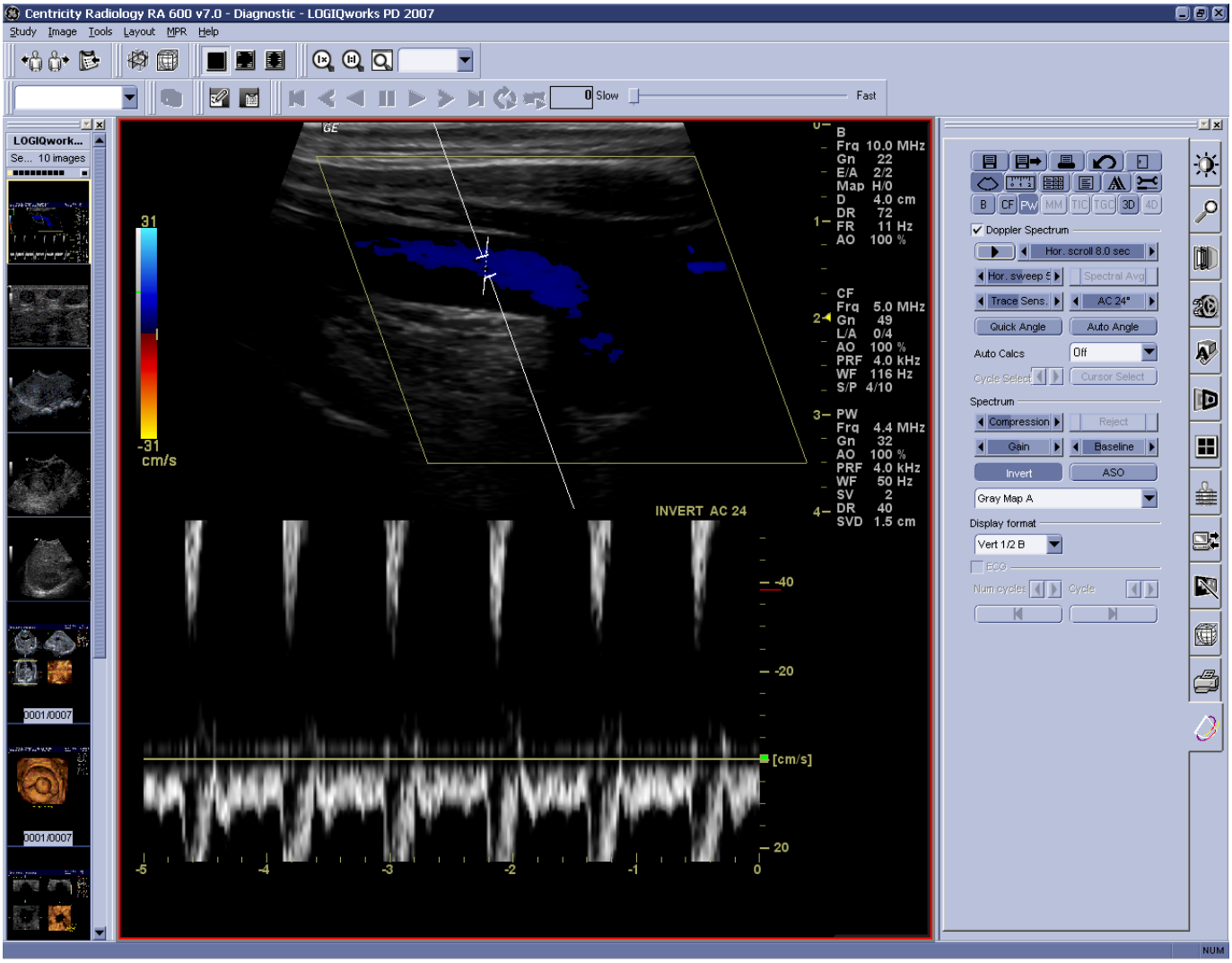


Figure 3-118 TripleMonitor LOGIQworks

11.) To review another image of the same study in the LOGIQworks plugin, ensure that the left monitor viewport is selected, and select any other image in the left monitor pictorial index.

12.) You can continue reviewing the open study on the middle and right monitors at any time while the LOGIQworks plugin is open. Make sure you select one of the viewports of the middle or right monitor, and use the PgDn/PgUp, mouse scroll wheel, etc. to continue reviewing your study.

13.) To exit the LOGIQworks plugin, click the Exit button in the LOGIQworks toolbar.

14.) To review another study, hit the "2" key on your Num Lock pad (with the Num Lock key activated) to show the data selector, and double click whatever study you wish to review.

3-5-3-12 TripleMonitors for LOGIQworks FX and LOGIQworks SoftwareOnly (cont'd)

3-5-3-12-7 Summary: Using the LOGIQworks Plugin in the TripleMonitor Environment

- The LOGIQworks plugin is only available on the left (color LCD) monitor.
- At any time can you review your images on the middle and right monitors, just as you are used to.
- Extremely important is to always click in a viewport of the monitor you wish to work with. This is how the RA600 / CA1000 software will differentiate between the actions of the various monitors.

3-5-4 Connection Service Properties up to LOGIQworks 1.3

NOTE *ONLY CHANGE THE DEFAULT SETTINGS IN THE CONNECTION SERVICE PROPERTIES IF YOU ARE AN EXPERT!*

3-5-4-1 General

The General Tab contains a collection of generic settings for the Connection Service.

To view these setting:

1.) Select **Configuration** > **Connection Service...** from the Data Selector menu.
2.) Select the General tab from the Connection Service Properties page.

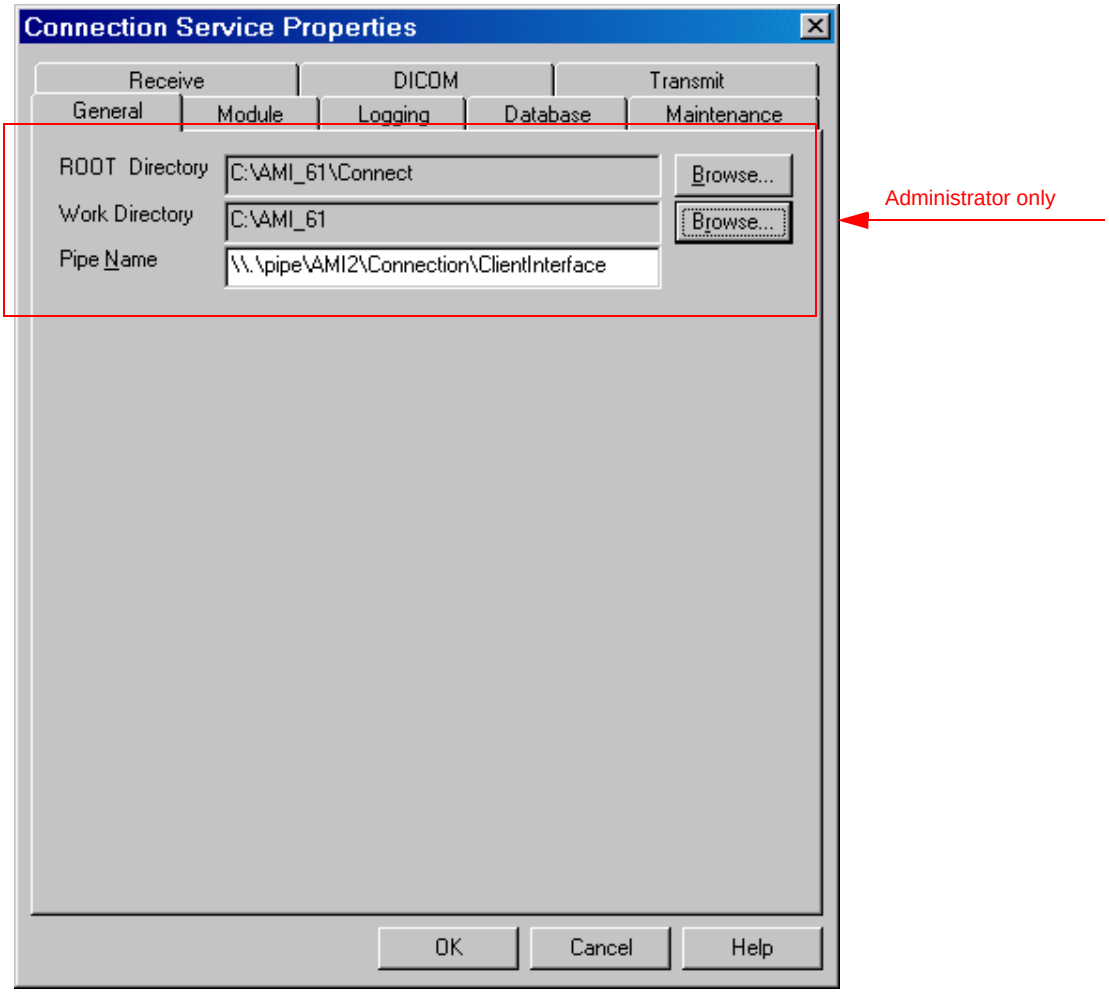


Figure 3-119 Connection Service Properties - General (Default Settings)

- **ROOT Directory:** Root directory for the files for the Connection Service. This is where the file to start the Connection Service (connect.exe) resides.
- **Work Directory:** Directory to create temporary files used by the Connection Service.
- **Pipe Name:** General pipe used by RadWorks to interface to the Connection Service

3-5-4-2 Module

To view the JPEG Options:

1.) Select **Configuration** > **Connection Service...** from the Data Selector menu.
2.) Select the Module tab from the Connection Service Properties page.

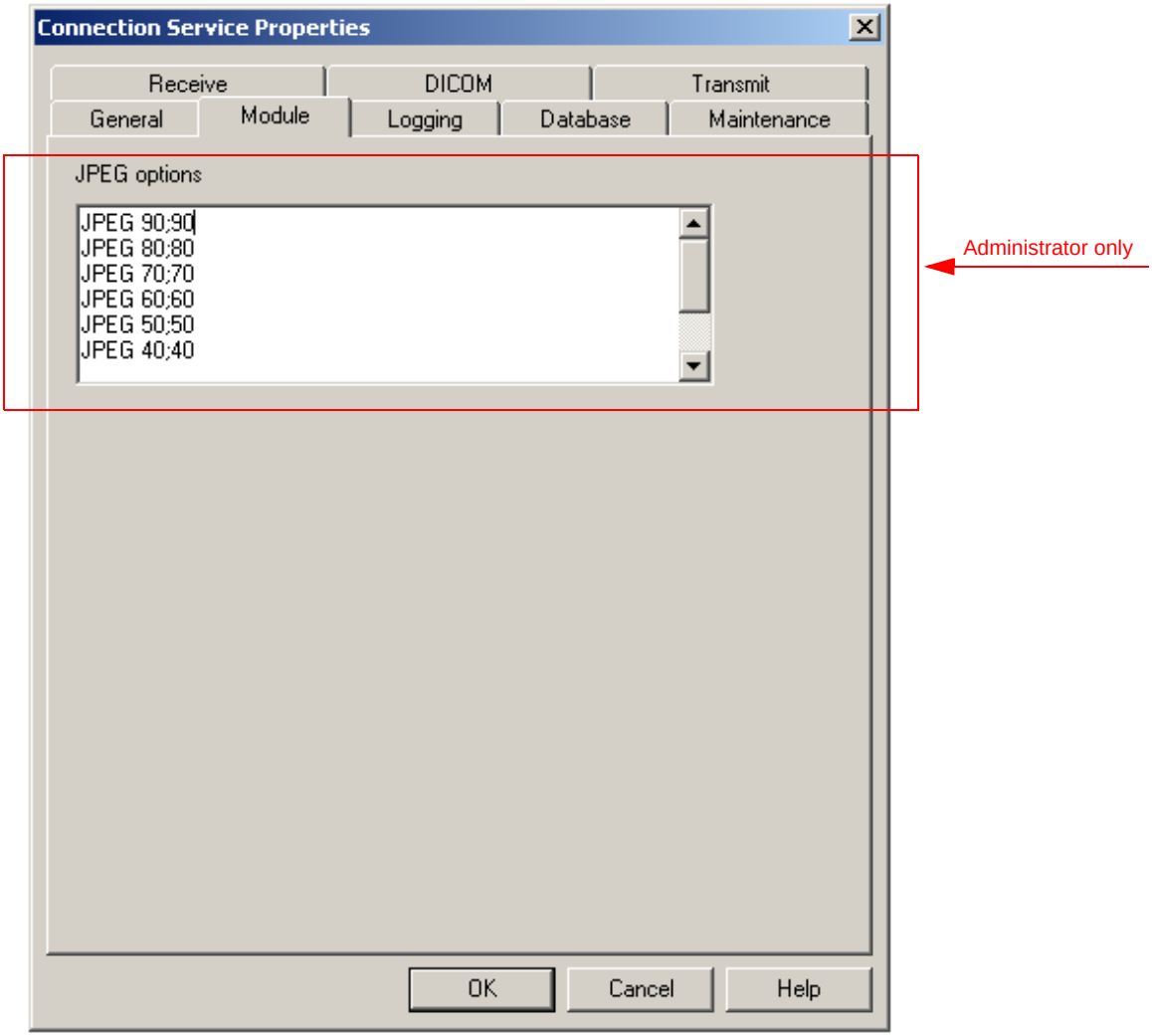


Figure 3-120 Connection Service Properties - Module (Default Setting)

Standard JPEG compression options: Each option is represented by one line. Before the semicolon a textual description can be entered, that appears in a list-box containing JPEG compression options. The number behind the semicolon is the JPEG Quality factor. This number should be larger than 0, and smaller than 100. It should be an ordinal number.

3-5-4-3 Logging

To set and view RA600 logging properties:

1.) Select **Configuration** > **Connection Service...** from the Data Selector menu.
2.) Select the Logging tab from the Connection Service Properties page.

3-5-4-3 Logging (cont'd)

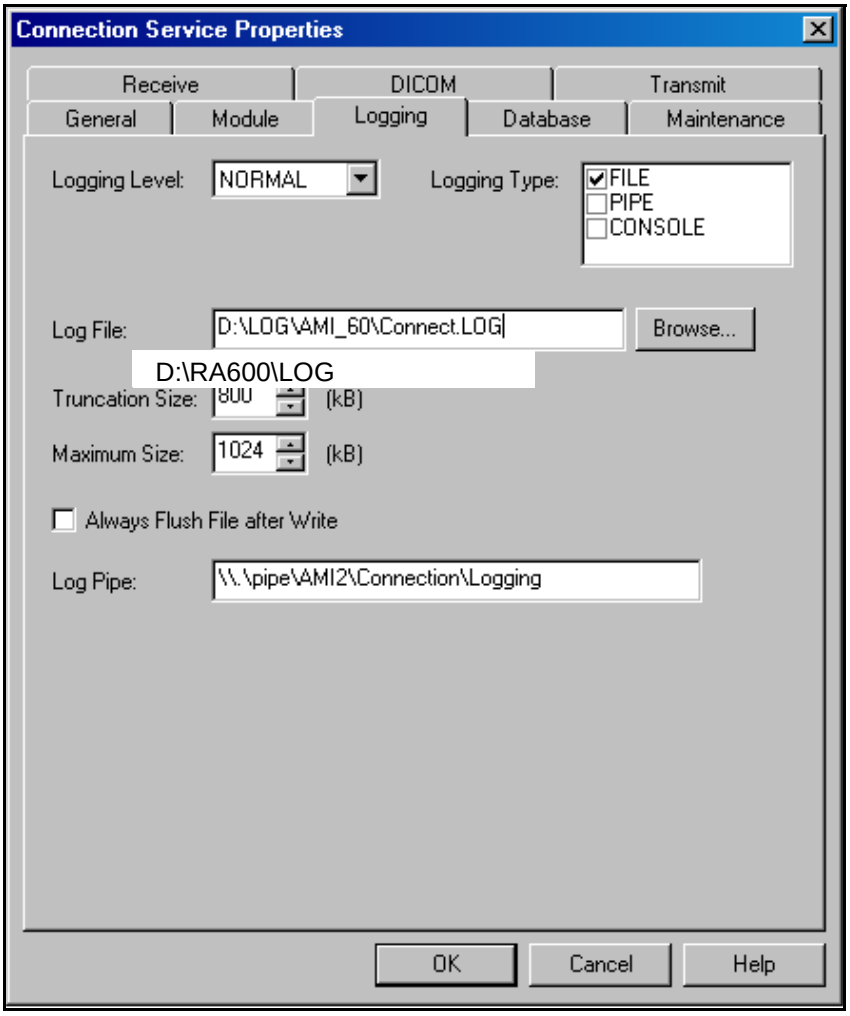


Figure 3-121 Connection Service Properties - Logging (Default Settings)

- **Logging Level:** Set the level of logging messages. If set to ALL, all messages will be logged. If set to NORMAL (the typical setting) only error messages will be logged.
- **Logging Type:** Set the types of logging used by the RadWorks application. (Default: File)
  - **File:** If this check box is checked, RadWorks will write general information about its operation to the RadWorks.log file, which you can view in the Log folder.
  - **Pipe:** Used in combination with the listening tool in the X:\AMI_61\bin folder. Among other things, it enables you to observe DICOM transmissions in a pipe. Consult the technical reference manual or contact technical support for additional information.
  - **Console:** If this check box is checked, RadWorks will display a window that continuously shows the actions RadWorks is performing. This is useful when troubleshooting.
- **Log File:** Set the name of the log file. Each Service has its own default log filename. (Do not change)
- **Truncation Size (kB):** Set the truncation size of the logging file. The truncation size is the size the log file will be shortened to when its maximum size has been exceeded. (Default: 800 kB)
- **Maximum Size (kB):** Set the maximum size of the log file. (Default: 1024 kB)

3-5-4-3 Logging (cont'd)

Set the Maximum Size of the log file to 0 to disable log file truncation. This can be very handy for troubleshooting.

- **Always Flush File after Write:** If checked, all logging actions will be written immediately to the log file. This option will have a serious impact on the performance of RadWorks, so it should not normally be checked. (Default: not checked)
- **Log Pipe:** Name of the pipe where logging information is written.

  Default: \\.\pipe\AMI2\Connection\Logging

3-5-4-4 Database

This tab contains a collection of settings that are related to database settings for the Connection Service. The Connection Service uses a database to store destinations and origins, pending and completed transmission jobs, and information about received studies.

NOTE *Remember: Only change settings if you are an expert!*

To view the connection database settings:

1.) Select **Configuration** > **Connection Service...** from the Data Selector menu.
2.) Select the Database tab from the Connection Service Properties page.

3-5-4-4 Database (cont'd)

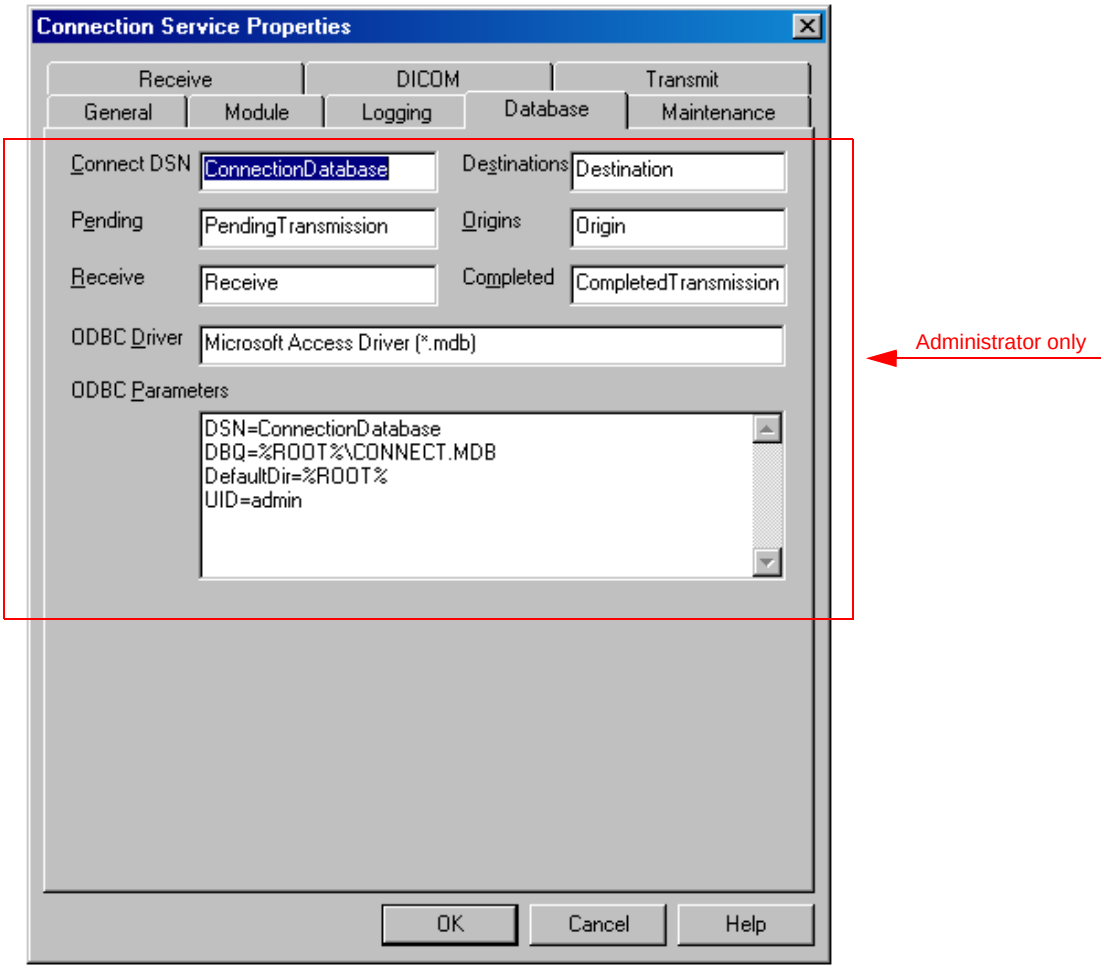


Figure 3-122 Connection Service Properties - Database (Default Settings)

3-5-4-4 Database (cont'd)

- **Connect DSN:** Name of the ODBC database source (DSN) for the database used by the Connection Service.
- **Destinations:** Name of the database table containing pre-configured destinations.
- **Pending:** Name of the database table containing pending transmission jobs.
- **Origins:** Name of the database table containing pre-configured origins.
- **Receive:** Name of the database table containing the receive log.
- **Completed:** Name of the database table containing the completed transmission jobs.
- **ODBC Driver:** Specifies the ODBC driver used to access the database for the Connection Service.
- **ODBC Parameters:** Parameters needed to create a DSN (Data Source Name) in ODBC.

3-5-4-5 Maintenance

Set the maintenance behavior of the Connection Service. The Connection Service can automatically cleanup entries in the Send and Receive Logs, if valid maintenance criteria have been set.

To view and set these criteria:

1.) Select **Configuration** > **Connection Service...** from the Data Selector menu.
2.) Select the Maintenance tab from the Connection Service Properties page.

3-5-4-5 Maintenance (cont'd)

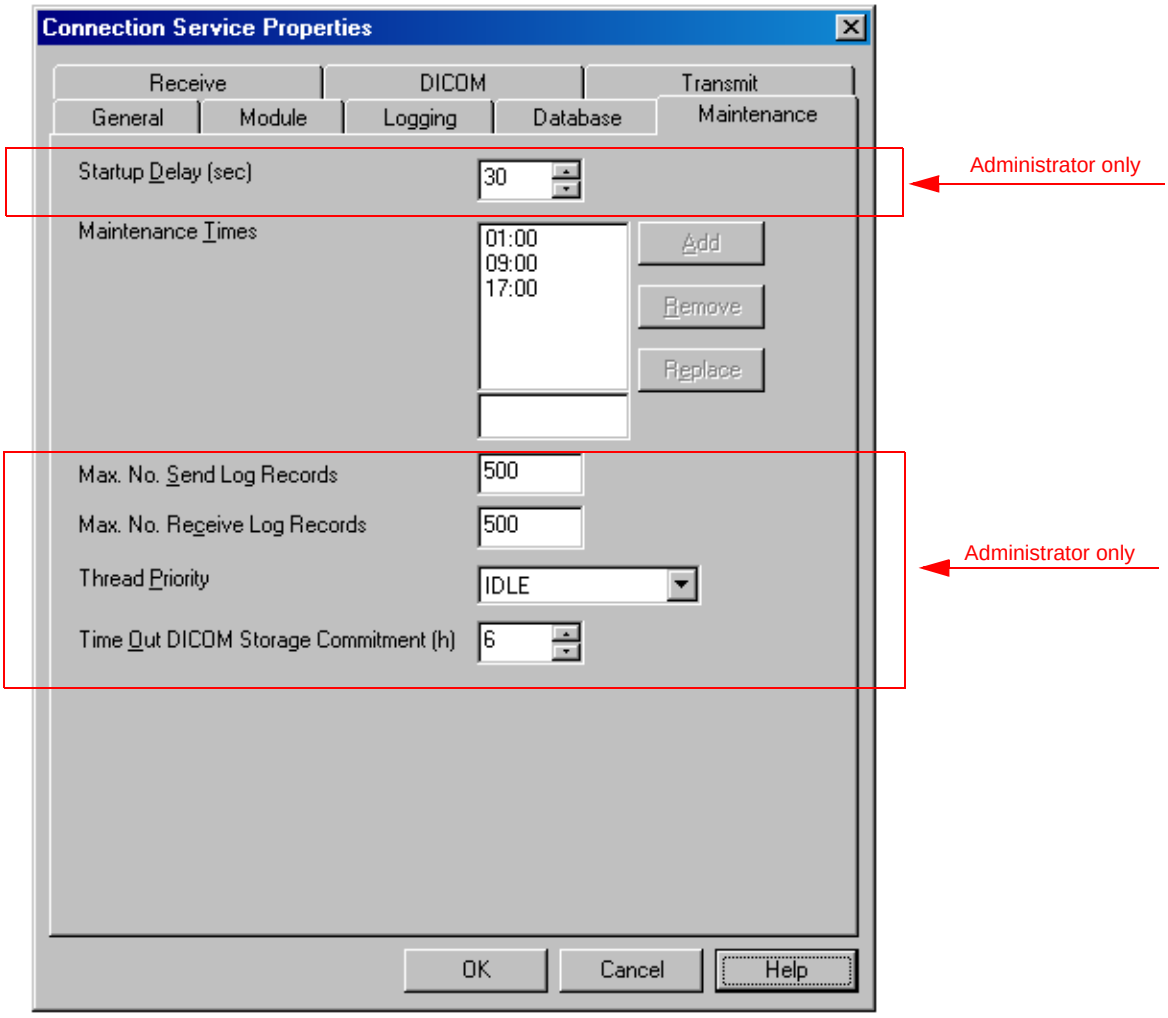


Figure 3-123 Connection Service Properties - Maintenance (Default Settings)

- **Startup Delay (sec.):** Specifies the delay after start-up when the first maintenance check will be performed. (Default: 30)
- **Maintenance Times:** Specifies at which moments in time a maintenance check will be performed. These checks are done every day, and only if the system is up and running at that. (Default: 01:00, 09:00 and 17:00).
    - You can add a time by filling in the field beneath the list of Maintenance Times and clicking on the **Add** button.
    - You can delete a time by selecting the time in the Maintenance Times list and clicking the **Remove** button.
    - You replace one maintenance time with another by filling in the field beneath the list of Maintenance Times, selecting the time you want to replace and clicking the **Replace** button.
- **Max. No. Send Log Records:** Maximum number of Send Log records. This number is used when maintenance becomes active. If the number of records in the Send Log exceeds the specified number, the oldest records will be deleted from the Send Log until the required maximum is reached. Setting this number to zero (as shown) will disable maintenance for the Send Log. (Default: 500)

3-5-4-5 Maintenance (cont'd)

- **Max. No. Receive Log Records:** Maximum number of Receive Log records. This number is used when maintenance becomes active. If the number of records in the Receive Log exceeds the specified number, the oldest records will be deleted from the Receive Log until the required maximum is reached. Setting this number to zero (as shown) will disable maintenance for the Send Log. (Default: 500)
- **Thread Priority:** Priority of the maintenance thread within the Connection Service. Changing this setting can influence the system performance. (Default: IDLE)
- **Time Out DICOM Storage Commitment (h):** Number of hours LOGIQworks will wait for a DICOM Storage Commitment response before timing out.

3-5-4-6 Receive

This tab contains a collection of settings that control the 'receive' behavior of the Connection Service. The Receive tab contains the general receive parameters and parameters specific for receiving in AMI format. The DICOM format receive parameters can be found on the DICOM tab.

Only alter default settings if strictly necessary.

To view these receive parameters:

1.) Select **Configuration** > **Connection Service...** from the Data Selector menu.
2.) Select the Receive tab from the Connection Service Properties page.

3-5-4-6 Receive (cont'd)

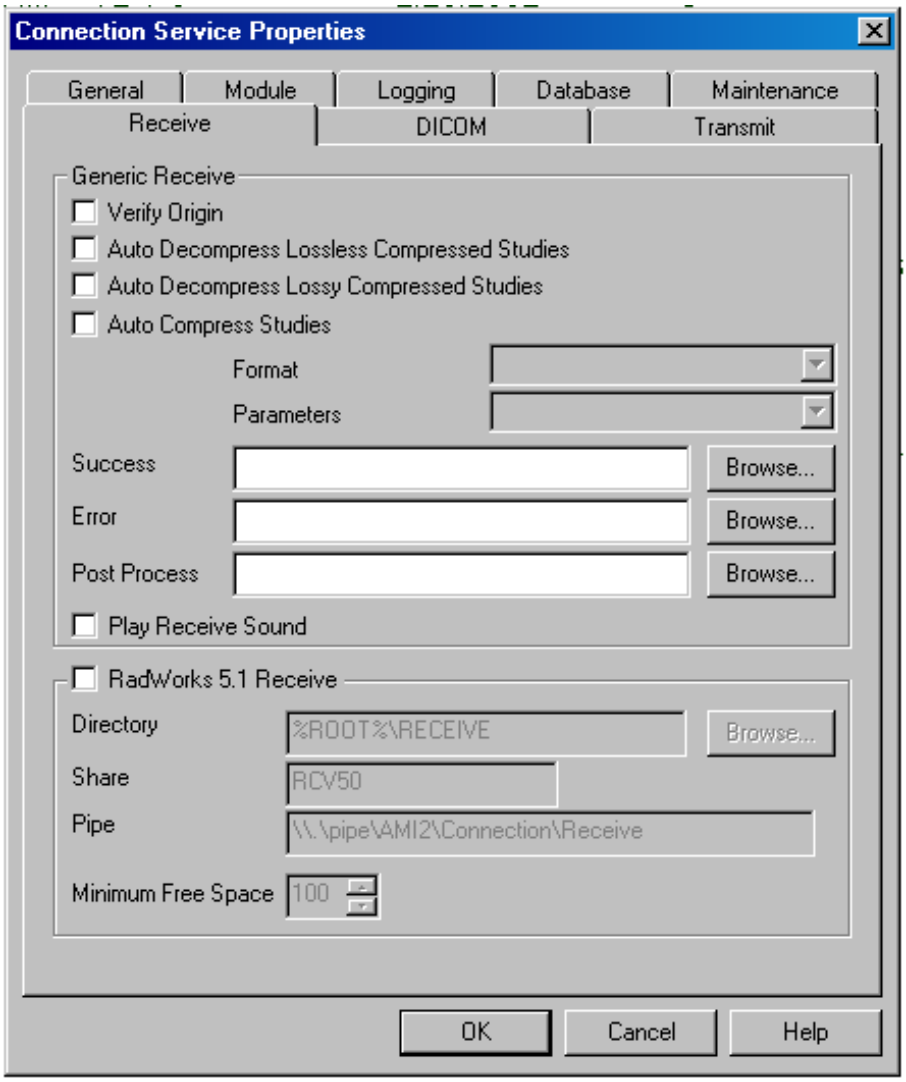


Figure 3-124 Connection Service Properties - Receive (Default settings)

- **Generic Receive**
  - **Verify Origin:** Check this check box if you want the system to perform 'origin checking'. This option is available for DICOM transfers made to this system. When checked, the system will verify the presence of the origin (i.e. the system sending data to this system) in the Origin database.

    This setting is also valid for receive activity in DICOM 3.0 format.
  - **Auto Decompress Loss less Compressed Studies:** This setting controls whether studies that are received in a loss less compressed format are automatically decompressed when they are received. By default, this option is disabled. This will save storage space on the receiving side, but may increase loading time when viewing the study. The reverse effect (increased storage space, but decreased loading time) can be achieved by enabling this option.

3-5-4-6 Receive (cont'd)

- **Auto Decompress Lossy Compressed Studies:** This setting controls whether studies that are received in a lossy compressed format are automatically decompressed when they are received. By default, this option is disabled. This will save storage space on the receiving side, but may increase loading time when viewing the study. The reverse effect (increased storage space, but decreased loading time) can be achieved by enabling this option.
- **Auto Compress Studies:** Check the check box if you want LOGIQworks to automatically compress incoming studies as they are received. This will save disk space, but performance will be affected to some extent when studies are opened for viewing, since LOGIQworks will have to decompress them before they are displayed. Select the type of compression you want RadWorks to use from the Format drop-down list. If the format allows different compression/ quality settings (such as lossy JPEG), select a value from the Parameters drop-down list.

- **Success:** This parameter specifies the Windows.WAV file that will be played when a study has been received successfully.
- **Error:** This parameter specifies the Windows.WAV file that will be played when an error has occurred during the receive process for a study.
- **Post Process:** When you need a special process to run, such as for quality control matching or repairing DICOM tags, enter the Dynamic Link Library here (qc.dll for example), or use the Browse button to locate the DLL you want to use.
- **Play Receive Sound:** This setting controls whether a sound will be played when studies are received by the system. The sound will be played when an entry is added to the Receive Log.
- **RadWorks 5.1 Receive:**

  Check this check box to specify whether the RadWorks 5.1 Receive thread is available in the system. If this check box is disabled, RadWorks 5.1 systems will not be able to send data to this system in AMI (5.1) format.

  - **Directory:** Directory where the Connection Service receives studies from RadWorks 2.x or higher and RadWorks 1.31 systems that arrive in AMI format.
  - **Share:** Share name for the directory (as specified above) that is made available to other systems that send data to this system. This share is automatically created during the installation of the software.
  - **Pipe:** Pipe name of the interface provided by the Connection Service for other RadWorks 2.x or higher systems that want to send data to it in AMI format.
  - **Minimum Free Space:** This indicates (in megabytes) the minimum amount of free space that should be kept available when receiving studies. Should the amount of free space come below the level specified here, the study will be refused.

3-5-4-7 DICOM

The DICOM tab contains a collection of settings that control various DICOM parameters of the Connection Service.

To view and set these DICOM settings:

1.) Select **Configuration** > **Connection Service...** from the Data Selector menu.
2.) Select the DICOM tab from the Connection Service Properties page.

3-5-4-7 DICOM (cont'd)

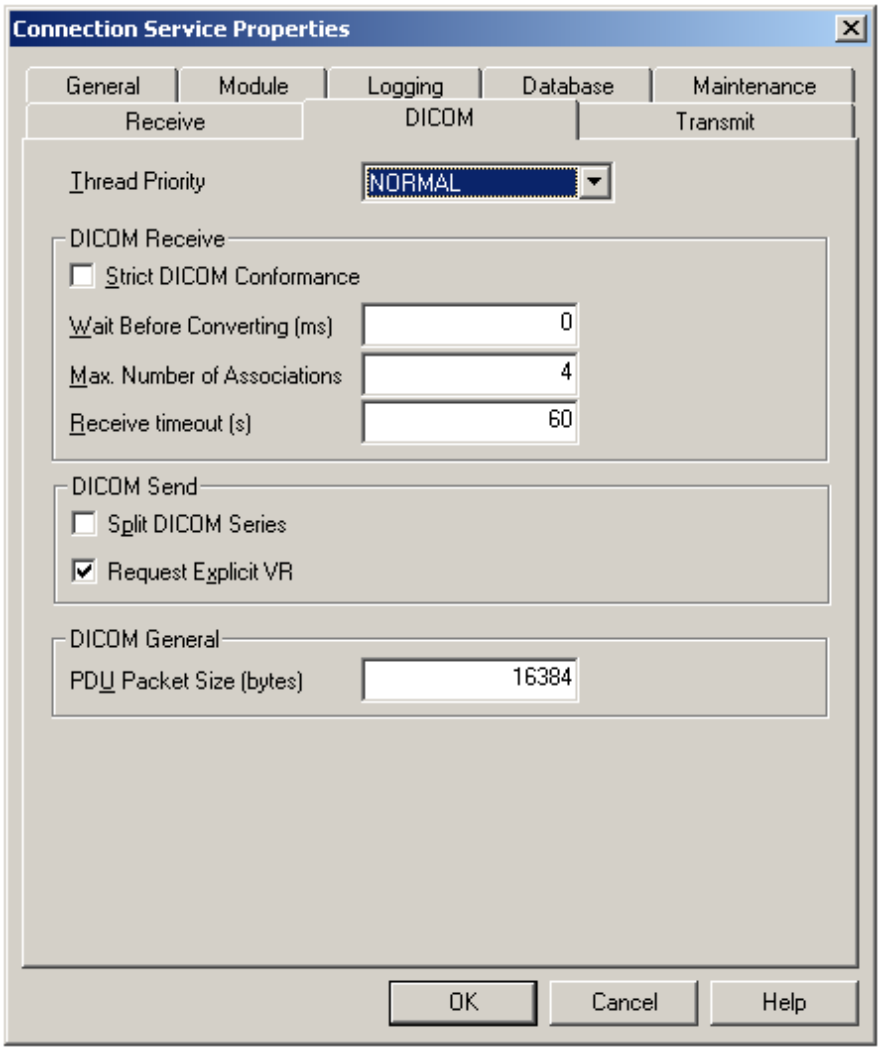


Figure 3-125 Connection Service Properties - DICOM (Default settings)

The settings are divided into a section for DICOM Receive, followed by a section for DICOM send. The DICOM Application Entity Title and Port Number can be set in the DICOM tab in Generic System configuration (please refer to Section 3-5-2-6 "DICOM settings" on page 3-87).

Thread Priority: Priority of the DICOM service thread within the Connection Service. Changing this setting can influence the system performance. (Default: normal)

- **DICOM Receive**
  - **Strict DICOM Conformance:** This flag can be used to force strict DICOM conformance when receiving DICOM transfers from other systems. If images arrive that do not comply with strict DICOM conformance, these images will not appear in the database. This is also logged in the Receive Log. (Default: not checked)
  - **Wait before Converting:** This number can be used to set a time-out for DICOM conversion when a DICOM transfer is done on an image-by-image basis, i.e. when for every image a new association is started. If not zero, the number specifies (in milliseconds) the time-out between images. (Default: 0)

3-5-4-7 DICOM (cont'd)

- **Max. Number of Associations:** Set the maximum number of simultaneous incoming connections LOGIQworks should be able to handle. (Default: 4)
- **Receive time-out (s):** The time after which LOGIQworks will report an error if no command is sent to the system after another system has initiated a connection with it. (Default: 60)

• **DICOM Send**

- **Split DICOM Series:** This option is used when studies are sent from LOGIQworks in DICOM 3.0 format to other systems. If enabled the sending LOGIQworks system will use separate DICOM associations for each series contained in the study that is being transmitted. This option should only be used for systems that inadvertently "mix" images from different series. (Default: not checked)
- **Request Explicit VR:** This flag can be used to indicate whether the system should request the explicit VR transfers syntax when sending data to other systems. If the remote system declines the explicit VR syntax, the study will be sent in implicit VR mode. (Default: checked)

• **DICOM General**

- **PDU Packed Size (bytes):** Specifies the size of the packets that LOGIQworks uses to send data. Typically you should leave this at the default value since it works well for all LOGIQworks stations. If the value is too high, overall transmission speed will be reduced. A figure that is too low may mean that additional packets need to be used to send data, again redoing performance. (Default: 16384)

3-5-4-8 Transmit

View and adjust settings that control the 'transmission' behavior of the Connection Service.

1.) Select **Configuration** > **Connection Service...** from the Data Selector menu.

2.) Select the Transmit tab from the Connection Service Properties page.

All but the first two settings apply to transmissions in both AMI and DICOM formats.

3-5-4-8 Transmit (cont'd)

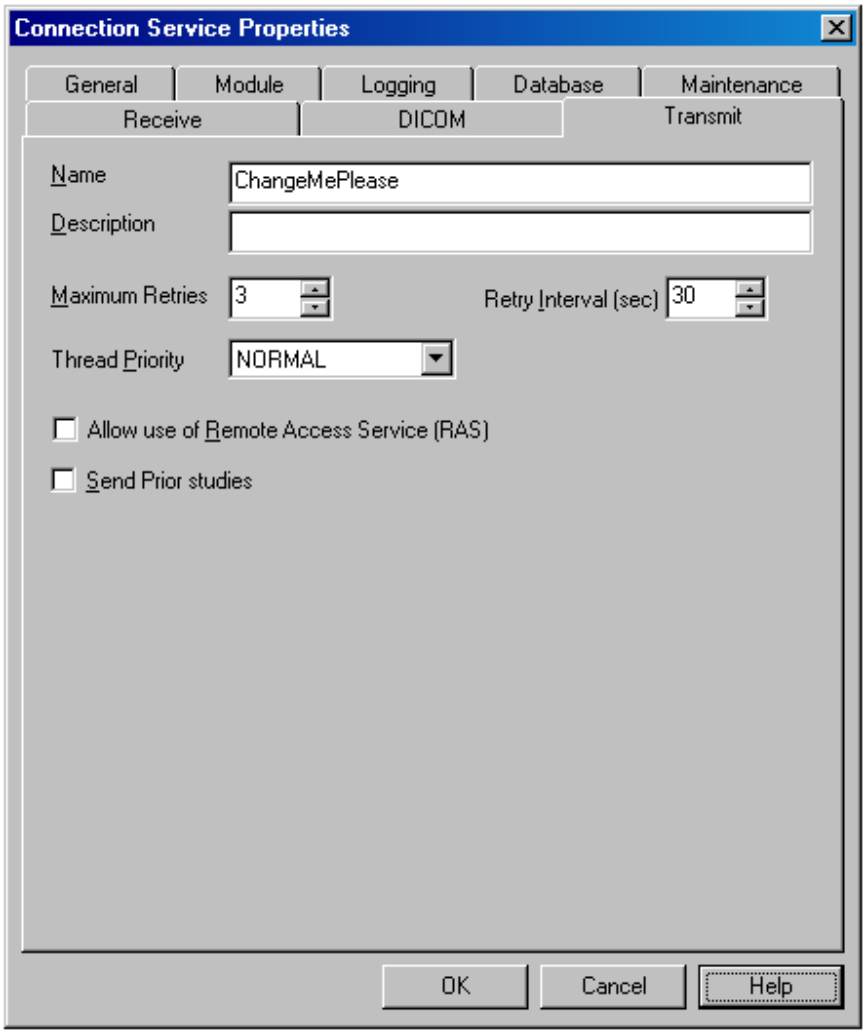


Figure 3-126 Connection Service Properties - Transmit (Default settings)

- **Name (AMI format only):** Specify the name (for teleradiology purposes) of this system. This name will be used to identify the system when it makes connections with other (LOGIQworksor RadWorks) systems. Data received on other LOGIQworks machines (and sent from this machine) will have their origin set to this name. The name is best kept short and concise.
- **Description (AMI format only):** Give a description of the machine you are working on. This is free format text.
- **Maximum Retries:** Specify the maximum number of times a study will be re-sent to a destination if it has previously failed. A new attempt is only made if the previous attempt was 'non-fatal' in nature, such as a line interruption. If the number of attempts to transmit a study reaches the specified maximum, the job will be set to an error state.
- **Retry Interval (sec.):** Specifies the (minimum) waiting time before a transmission (that failed on a previous attempt) can be tried again.
- **Thread Priority:** Priority of the transmission thread within the Connection Service. Changing this setting may influence system performance.

3-5-4-8 Transmit (cont'd)

- **Allow use of Remote Access Service (RAS):** This option is used to specify whether Remote Access Service (RAS) can be used for teleradiology destinations. If enabled, RAS is available when configuring teleradiology destinations. If disabled, the RAS parameters for a destination cannot be accessed or used.

  This setting is typically set during the installation of a system, and should not be changed at a later stage without great care. Especially when changing the option from disabled to enabled, please make sure RAS is actually installed on the system. Also make sure the RAS service dependency is enabled for the Connection Service.

- **Send prior studies:** Check this check box if you want LOGIQworks to automatically send to other workstations prior studies associated with an active study.

3-5-5 Connection Service Properties of LOGIQworks 2.0 and 3.0

NOTE *ONLY CHANGE THE DEFAULT SETTINGS IN THE CONNECTION SERVICE PROPERTIES IF YOU ARE AN EXPERT!*

3-5-5-1 Module

To view the JPEG Options:

1.) Select **Configuration** > **Connection Service...** from the Data Selector menu.
2.) Select the Module tab from the Connection Service Properties page.

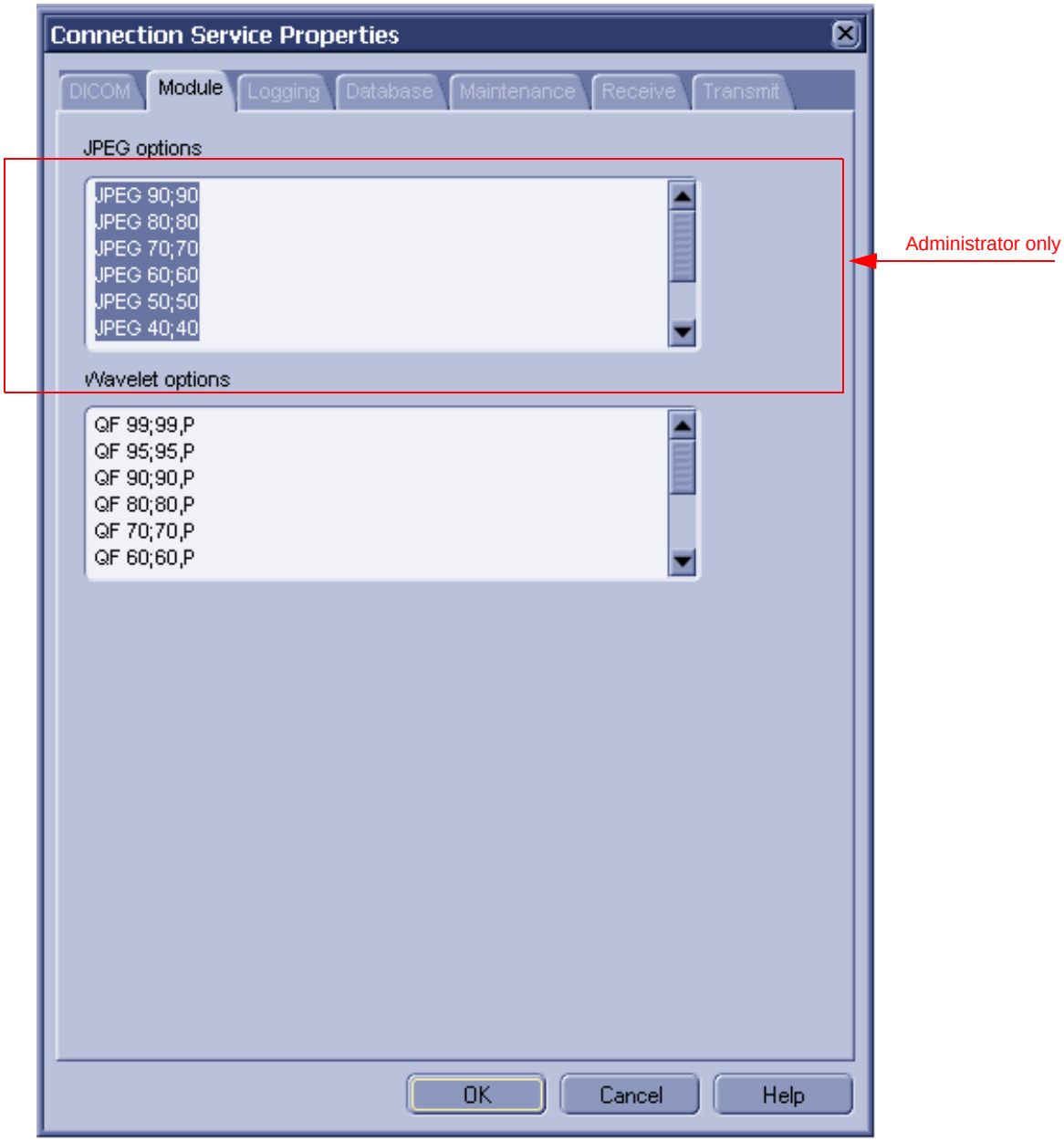


Figure 3-127 Connection Service Properties - Module (Default Setting)

3-5-5-1 Module (cont'd)

Standard JPEG compression options: Each option is represented by one line. Before the semicolon a textual description can be entered, that appears in a list-box containing JPEG compression options. The number behind the semicolon is the JPEG Quality factor. This number should be larger than 0, and smaller than 100. It should be an ordinal number.

Wavelet options: For more details see the Radworks 7.0 user documentation

3-5-5-2 Logging

To set and view RA600 logging properties:

1.) Select **Configuration** > **Connection Service...** from the Data Selector menu.
2.) Select the Logging tab from the Connection Service Properties page.

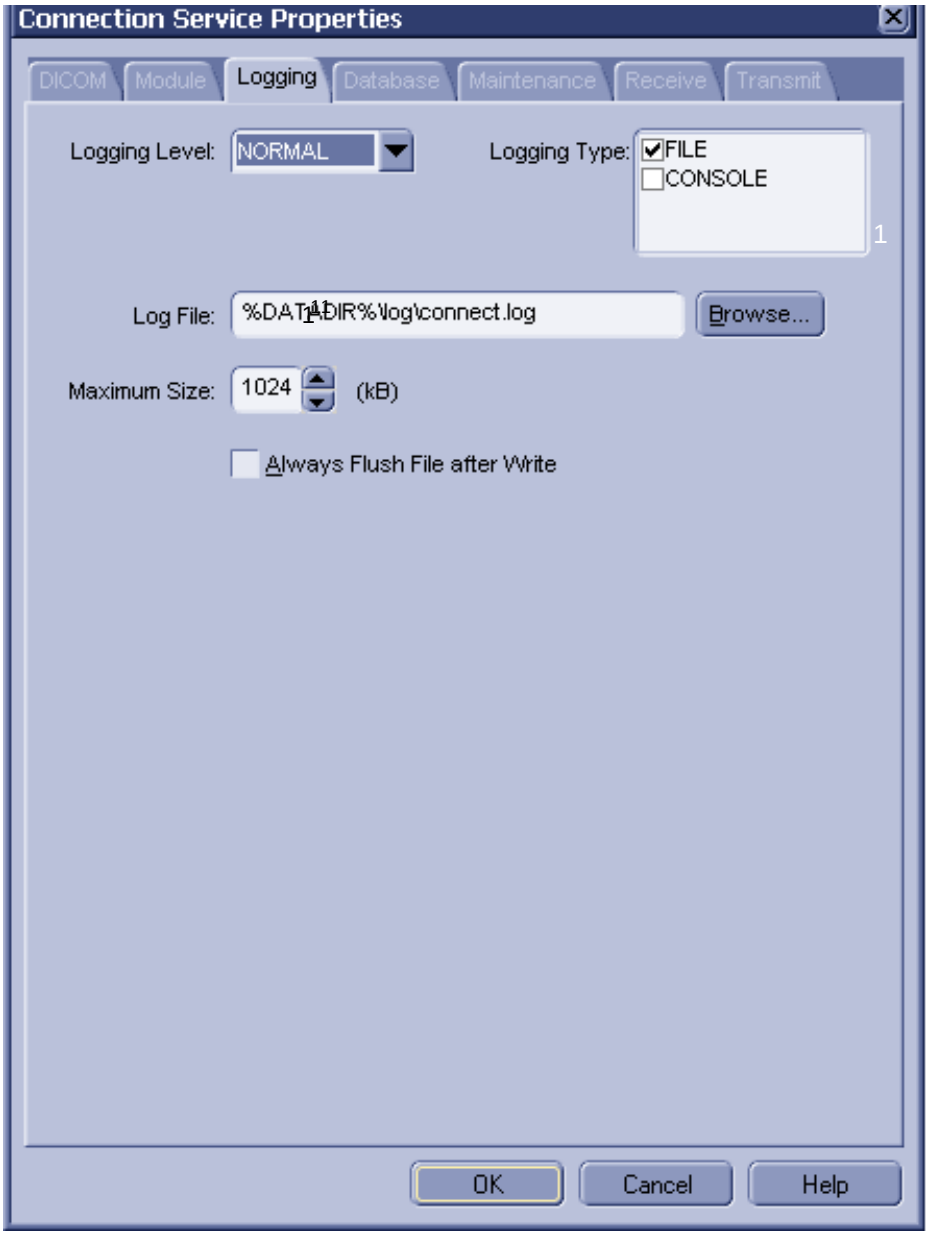


Figure 3-128 Connection Service Properties - Logging (Default Settings)

3-5-5-2 Logging (cont'd)

- **Logging Level:** Set the level of logging messages. If set to ALL, all messages will be logged. If set to NORMAL (the typical setting) only error messages will be logged.
- **Logging Type:** Set the types of logging used by the RadWorks application. (Default: File)
  - **File:** If this check box is checked, RadWorks will write general information about its operation to the RadWorks.log file, which you can view in the Log folder.
  - **Console:** If this check box is checked, RadWorks will display a window that continuously shows the actions RadWorks is performing. This is useful when troubleshooting.
- **Log File:** Set the name of the log file. Each Service has its own default log filename. (Do not change)

3.) **Maximum Size (kB):** Set the maximum size of the log file. (Default: 1024 kB)

Set the Maximum Size of the log file to 0 to disable log file truncation. This can be very handy for troubleshooting.

- **Always Flush File after Write:** If checked, all logging actions will be written immediately to the log file. This option will have a serious impact on the performance of RadWorks, so it should not normally be checked. (Default: not checked)

3-5-5-3 Database

This tab contains a collection of settings that are related to database settings for the Connection Service. The Connection Service uses a database to store destinations and origins, pending and completed transmission jobs, and information about received studies.

NOTE *Remember: Only change settings if you are an expert!*

To view the connection database settings:

1.) Select **Configuration** > **Connection Service...** from the Data Selector menu.

2.) Select the Database tab from the Connection Service Properties page.

3-5-5-3 Database (cont'd)

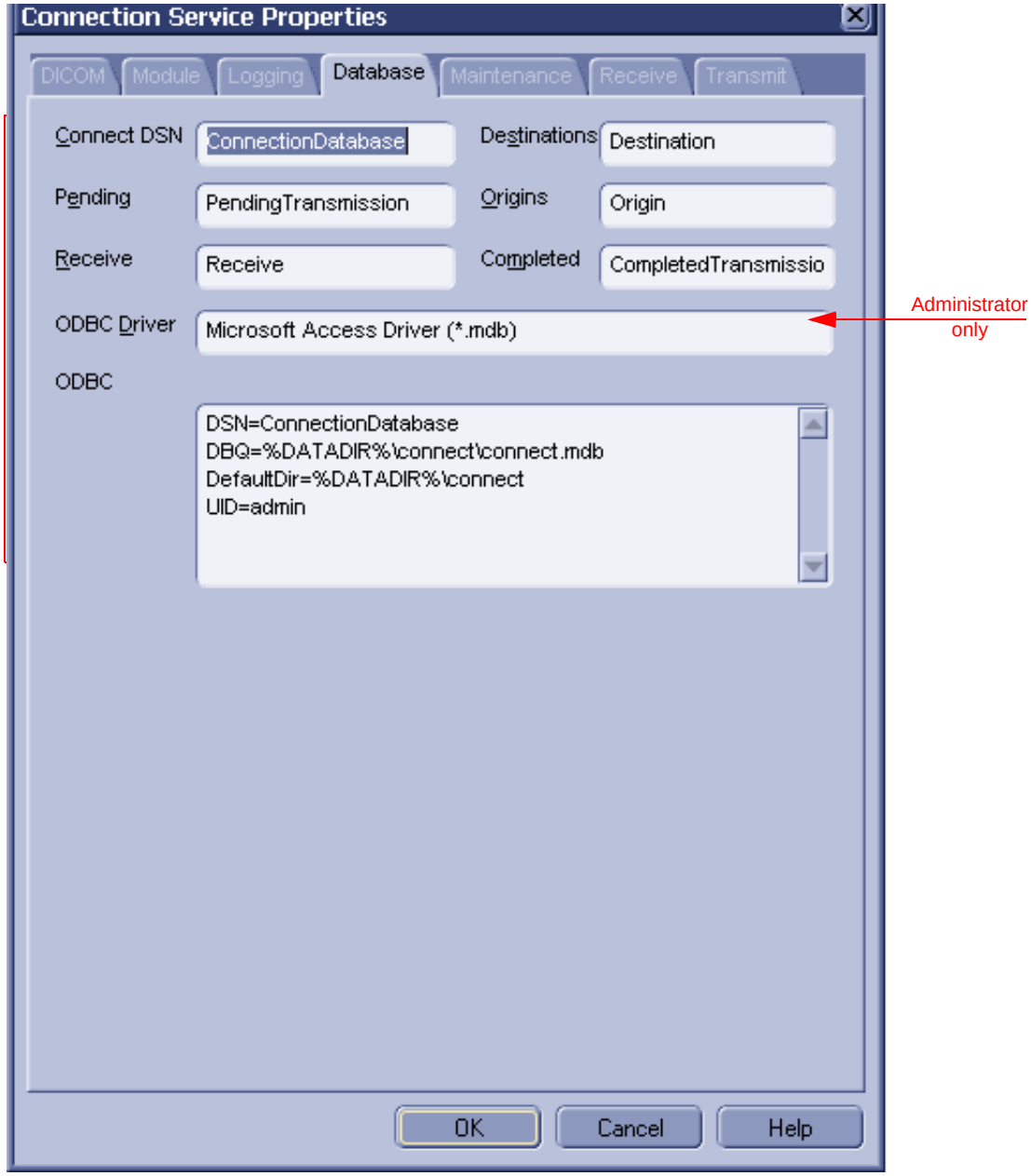


Figure 3-129 Connection Service Properties - Database (Default Settings)

3-5-5-3 Database (cont'd)

- **Connect DSN:** Name of the ODBC database source (DSN) for the database used by the Connection Service.
- **Destinations:** Name of the database table containing pre-configured destinations.
- **Pending:** Name of the database table containing pending transmission jobs.
- **Origins:** Name of the database table containing pre-configured origins.
- **Receive:** Name of the database table containing the receive log.
- **Completed:** Name of the database table containing the completed transmission jobs.
- **ODBC Driver:** Specifies the ODBC driver used to access the database for the Connection Service.
- **ODBC:** Parameters needed to create a DSN (Data Source Name) in ODBC.

3-5-5-4 Maintenance

Set the maintenance behavior of the Connection Service. The Connection Service can automatically cleanup entries in the Send and Receive Logs, if valid maintenance criteria have been set.

To view and set these criteria:

1.) Select **Configuration** > **Connection Service...** from the Data Selector menu.
2.) Select the Maintenance tab from the Connection Service Properties page.

3-5-5-4 Maintenance (cont'd)

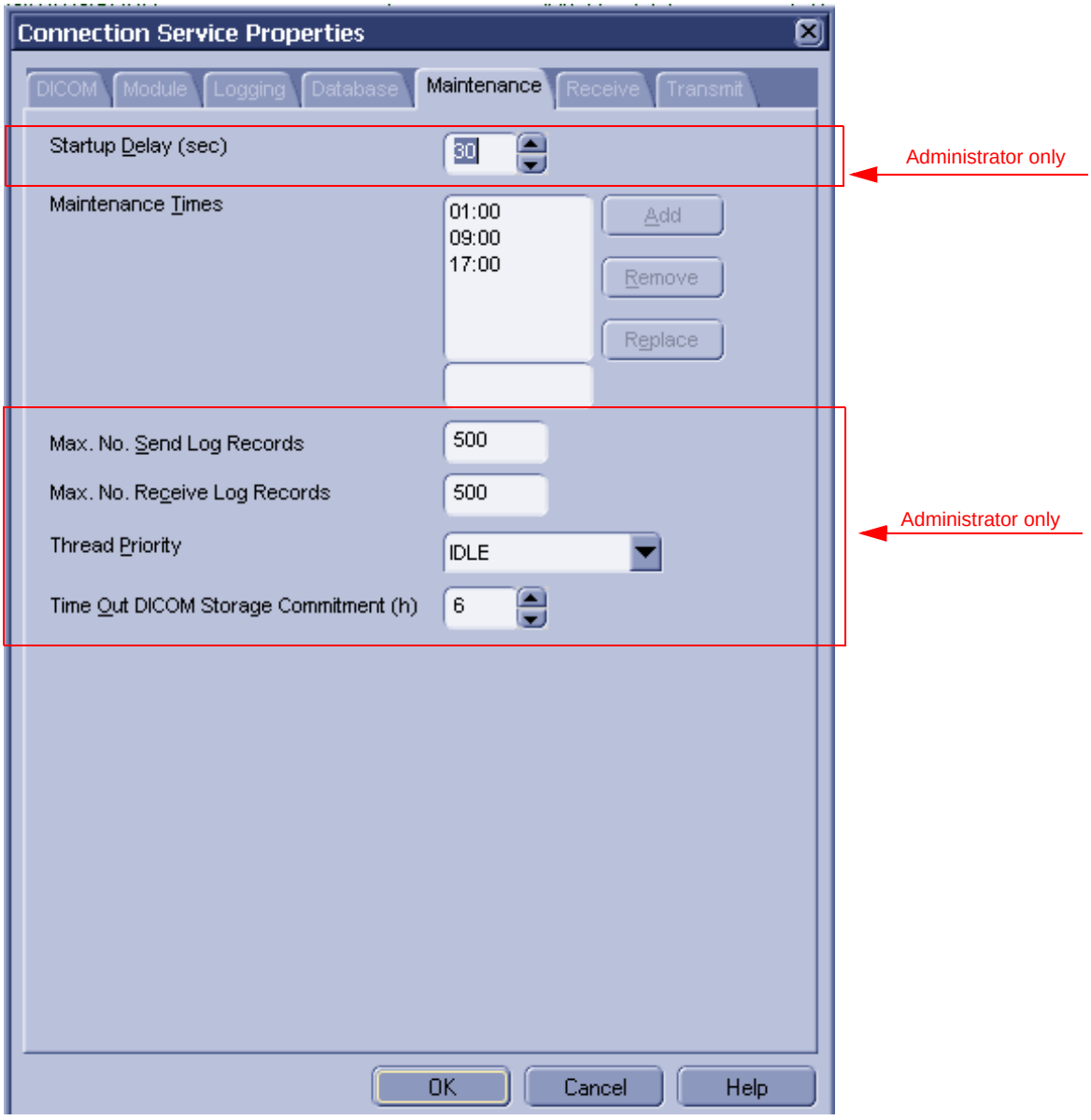


Figure 3-130 Connection Service Properties - Maintenance (Default Settings)

- **Startup Delay (sec.):** Specifies the delay after start-up when the first maintenance check will be performed. (Default: 30)
- **Maintenance Times:** Specifies at which moments in time a maintenance check will be performed. These checks are done every day, and only if the system is up and running at that. (Default: 01:00, 09:00 and 17:00).
    - You can add a time by filling in the field beneath the list of Maintenance Times and clicking on the **Add** button.
    - You can delete a time by selecting the time in the Maintenance Times list and clicking the **Remove** button.
    - You replace one maintenance time with another by filling in the field beneath the list of Maintenance Times, selecting the time you want to replace and clicking the **Replace** button.

3-5-5-4 Maintenance (cont'd)

- **Max. No. Send Log Records:** Maximum number of Send Log records. This number is used when maintenance becomes active. If the number of records in the Send Log exceeds the specified number, the oldest records will be deleted from the Send Log until the required maximum is reached. Setting this number to zero (as shown) will disable maintenance for the Send Log. (Default: 500)
- **Max. No. Receive Log Records:** Maximum number of Receive Log records. This number is used when maintenance becomes active. If the number of records in the Receive Log exceeds the specified number, the oldest records will be deleted from the Receive Log until the required maximum is reached. Setting this number to zero (as shown) will disable maintenance for the Send Log. (Default: 500)
- **Thread Priority:** Priority of the maintenance thread within the Connection Service. Changing this setting can influence the system performance. (Default: IDLE)
- **Time Out DICOM Storage Commitment (h):** Number of hours LOGIQworks will wait for a DICOM Storage Commitment response before timing out.

3-5-5-5 Receive

This tab contains a collection of settings that control the 'receive' behavior of the Connection Service. The Receive tab contains the general receive parameters and parameters specific for receiving in AMI format. The DICOM format receive parameters can be found on the DICOM tab.

Only alter default settings if strictly necessary.

To view these receive parameters:

1.) Select **Configuration** > **Connection Service...** from the Data Selector menu.
2.) Select the Receive tab from the Connection Service Properties page.

3-5-5-5 Receive (cont'd)

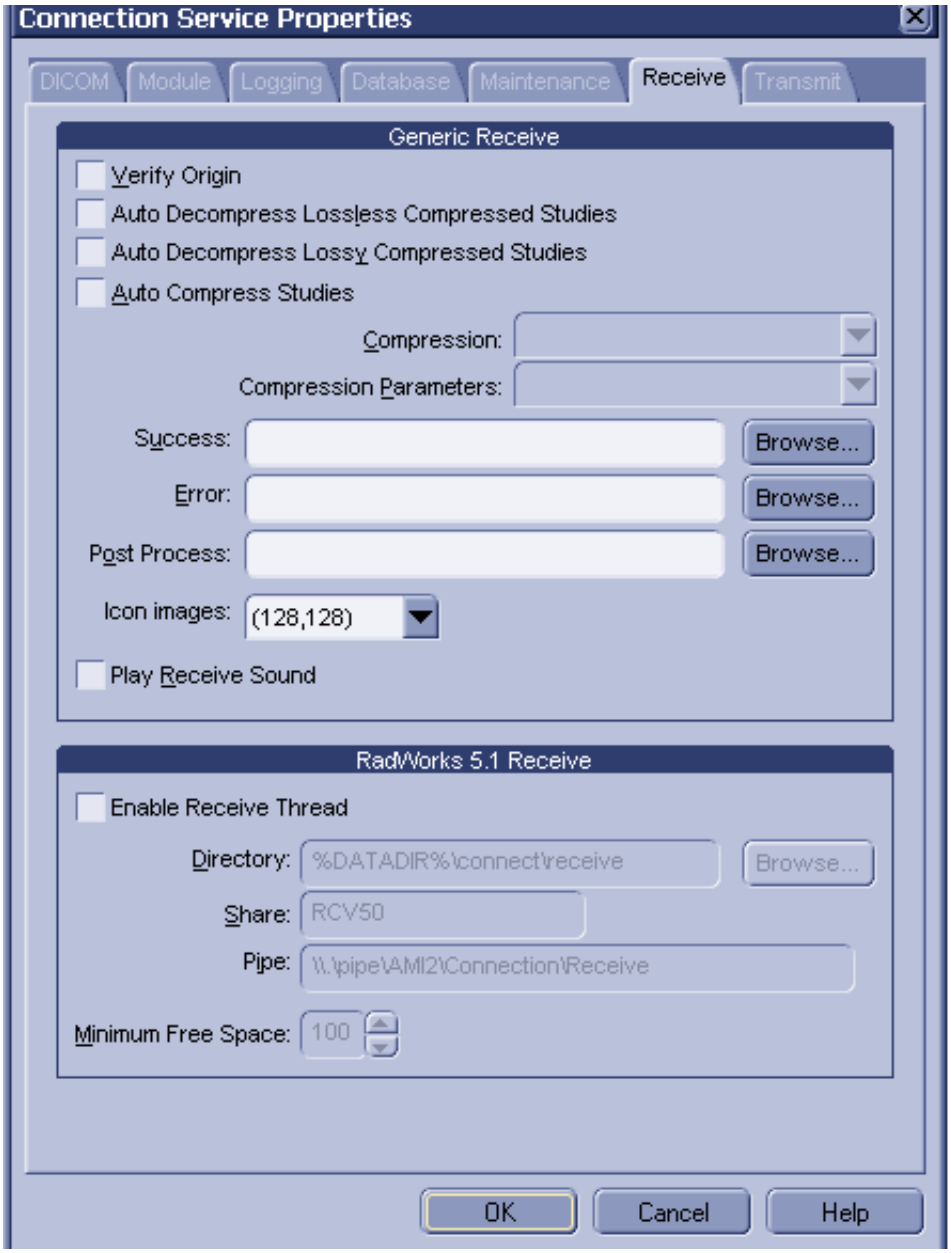


Figure 3-131 Connection Service Properties - Receive (Default settings)

- **Generic Receive**
  - **Verify Origin:** Check this check box if you want the system to perform 'origin checking'. This option is available for DICOM transfers made to this system. When checked, the system will verify the presence of the origin (i.e. the system sending data to this system) in the Origin database.

    This setting is also valid for receive activity in DICOM 3.0 format.

3-5-5-5 Receive (cont'd)

- **Auto Decompress Loss less Compressed Studies:** This setting controls whether studies that are received in a loss less compressed format are automatically decompressed when they are received. By default, this option is disabled. This will save storage space on the receiving side, but may increase loading time when viewing the study. The reverse effect (increased storage space, but decreased loading time) can be achieved by enabling this option.
- **Auto Decompress Lossy Compressed Studies:** This setting controls whether studies that are received in a lossy compressed format are automatically decompressed when they are received. By default, this option is disabled. This will save storage space on the receiving side, but may increase loading time when viewing the study. The reverse effect (increased storage space, but decreased loading time) can be achieved by enabling this option.
- **Auto Compress Studies:** Check the check box if you want LOGIQworks to automatically compress incoming studies as they are received. This will save disk space, but performance will be affected to some extent when studies are opened for viewing, since LOGIQworks will have to decompress them before they are displayed. Select the type of compression you want RadWorks to use from the Format drop-down list. If the format allows different compression/ quality settings (such as lossy JPEG), select a value from the Parameters drop-down list.

• **Success:** This parameter specifies the Windows.WAV file that will be played when a study has been received successfully.

• **Error:** This parameter specifies the Windows.WAV file that will be played when an error has occurred during the receive process for a study.

• **Post Process:** When you need a special process to run, such as for quality control matching or repairing DICOM tags, enter the Dynamic Link Library here (qc.dll for example), or use the Browse button to locate the DLL you want to use.

• **Icon Images**

• **Play Receive Sound:** This setting controls whether a sound will be played when studies are received by the system. The sound will be played when an entry is added to the Receive Log.

• **RadWorks 5.1 Receive:**

Check this check box to specify whether the RadWorks 5.1 Receive thread is available in the system. If this check box is disabled, RadWorks 5.1 systems will not be able to send data to this system in AMI (5.1) format.

- **Directory:** Directory where the Connection Service receives studies from RadWorks 2.x or higher and RadWorks 1.31 systems that arrive in AMI format.
- **Share:** Share name for the directory (as specified above) that is made available to other systems that send data to this system. This share is automatically created during the installation of the software.
- **Pipe:** Pipe name of the interface provided by the Connection Service for other RadWorks 2.x or higher systems that want to send data to it in AMI format.
- **Minimum Free Space:** This indicates (in megabytes) the minimum amount of free space that should be kept available when receiving studies. Should the amount of free space come below the level specified here, the study will be refused.

3-5-5-6 DICOM

The DICOM tab contains a collection of settings that control various DICOM parameters of the Connection Service.

To view and set these DICOM settings:

1.) Select **Configuration** > **Connection Service...** from the Data Selector menu.

2.) Select the DICOM tab from the Connection Service Properties page.

3-5-5-6 DICOM (cont'd)

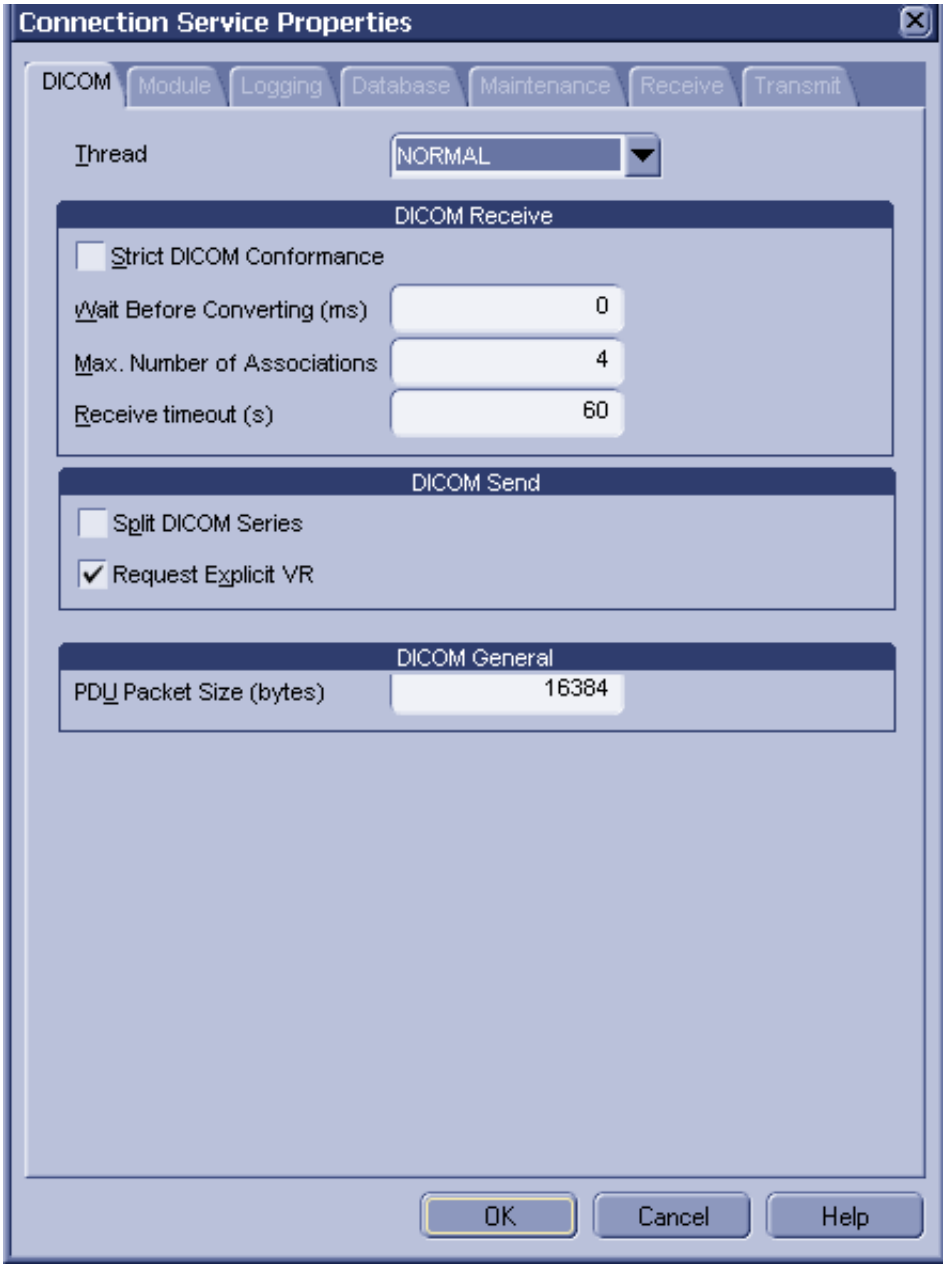


Figure 3-132 Connection Service Properties - DICOM (Default settings)

The settings are divided into a section for DICOM Receive, followed by a section for DICOM send. The DICOM Application Entity Title and Port Number can be set in the DICOM tab in Generic System configuration (please refer to Section 3-5-2-6 "DICOM settings" on page 3-87).

Thread Priority: Priority of the DICOM service thread within the Connection Service. Changing this setting can influence the system performance. (Default: normal)

- **DICOM Receive**
  - **Strict DICOM Conformance:** This flag can be used to force strict DICOM conformance when receiving DICOM transfers from other systems. If images arrive that do not comply with strict

3-5-5-6 DICOM (cont'd)

- DICOM conformance, these images will not appear in the database. This is also logged in the Receive Log. (Default: not checked)
- **Wait before Converting:** This number can be used to set a time-out for DICOM conversion when a DICOM transfer is done on an image-by-image basis, i.e. when for every image a new association is started. If not zero, the number specifies (in milliseconds) the time-out between images. (Default: 0)
- **Max. Number of Associations:** Set the maximum number of simultaneous incoming connections LOGIQworks should be able to handle. (Default: 4)
- **Receive time-out (s):** The time after which LOGIQworks will report an error if no command is sent to the system after another system has initiated a connection with it. (Default: 60)

• **DICOM Send**

- **Split DICOM Series:** This option is used when studies are sent from LOGIQworks in DICOM 3.0 format to other systems. If enabled the sending LOGIQworks system will use separate DICOM associations for each series contained in the study that is being transmitted. This option should only be used for systems that inadvertently "mix" images from different series. (Default: not checked)
- **Request Explicit VR:** This flag can be used to indicate whether the system should request the explicit VR transfers syntax when sending data to other systems. If the remote system declines the explicit VR syntax, the study will be sent in implicit VR mode. (Default: checked)

• **DICOM General**

- **PDU Packed Size (bytes):** Specifies the size of the packets that LOGIQworks uses to send data. Typically you should leave this at the default value since it works well for all LOGIQworks stations. If the value is too high, overall transmission speed will be reduced. A figure that is too low may mean that additional packets need to be used to send data, again redoing performance. (Default: 16384)

3-5-5-7 Transmit

View and adjust settings that control the 'transmission' behavior of the Connection Service.

1.) Select **Configuration** > **Connection Service...** from the Data Selector menu.

2.) Select the Transmit tab from the Connection Service Properties page.

All but the first two settings apply to transmissions in both AMI and DICOM formats.

3-5-5-7 Transmit (cont'd)

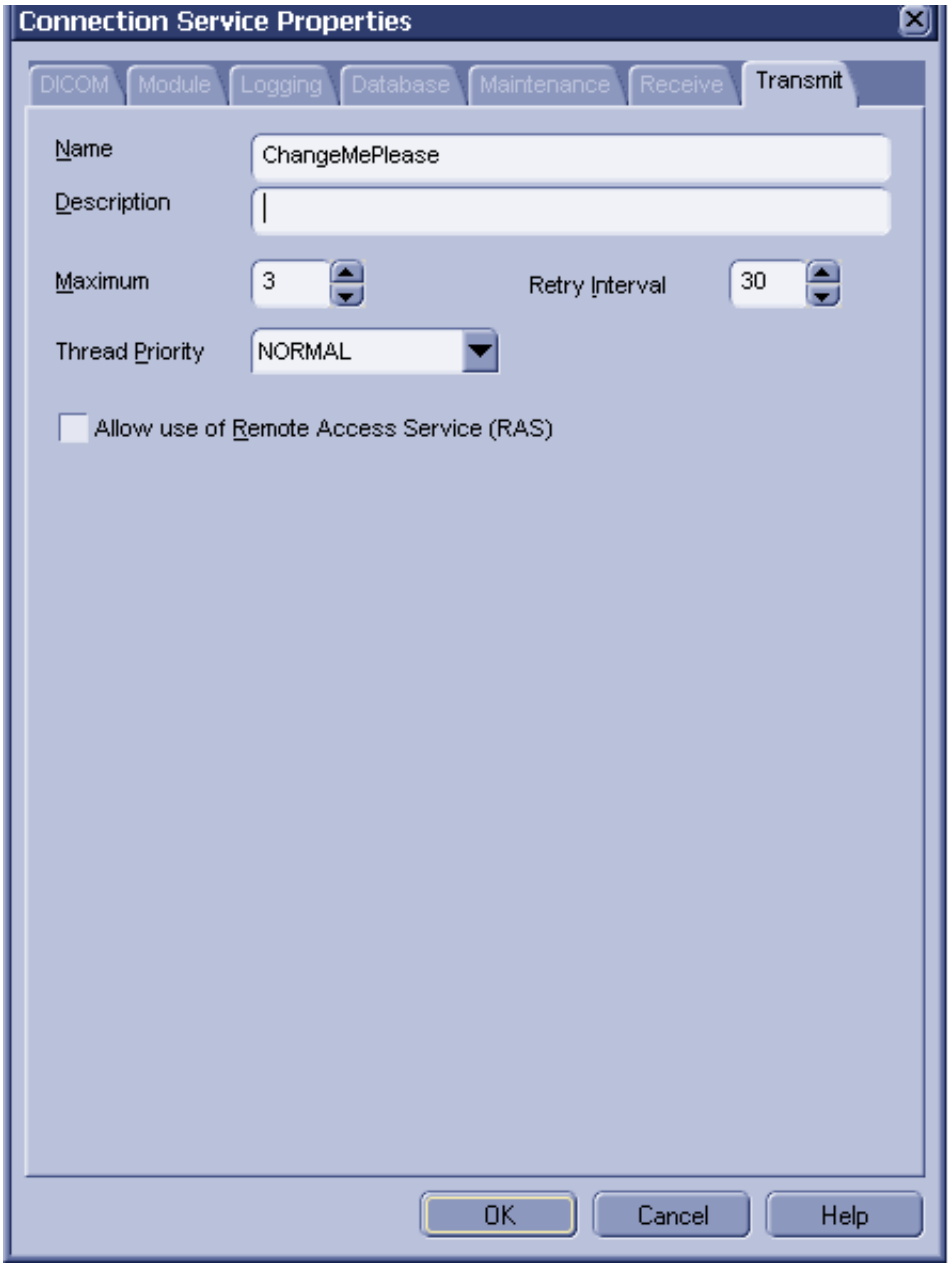


Figure 3-133 Connection Service Properties - Transmit (Default settings)

- **Name (AMI format only):** Specify the name (for teleradiology purposes) of this system. This name will be used to identify the system when it makes connections with other (LOGIQworksor RadWorks) systems. Data received on other LOGIQworks machines (and sent from this machine) will have their origin set to this name. The name is best kept short and concise.
- **Description (AMI format only):** Give a description of the machine you are working on. This is free format text.
- **Maximum Retries:** Specify the maximum number of times a study will be re-sent to a destination if it has previously failed. A new attempt is only made if the previous attempt was 'non-fatal' in nature, such as a line interruption. If the number of attempts to transmit a study reaches the specified maximum, the job will be set to an error state.

3-5-5-7 Transmit (cont'd)

- **Retry Interval (sec.):** Specifies the (minimum) waiting time before a transmission (that failed on a previous attempt) can be tried again.
- **Thread Priority:** Priority of the transmission thread within the Connection Service. Changing this setting may influence system performance.
- **Allow use of Remote Access Service (RAS):** This option is used to specify whether Remote Access Service (RAS) can be used for teleradiology destinations. If enabled, RAS is available when configuring teleradiology destinations. If disabled, the RAS parameters for a destination cannot be accessed or used.

  This setting is typically set during the installation of a system, and should not be changed at a later stage without great care. Especially when changing the option from disabled to enabled, please make sure RAS is actually installed on the system. Also make sure the RAS service dependency is enabled for the Connection Service.

3-5-6 Database Service Properties up to LOGIQworks 1.3

WARNING *ONLY CHANGE THE DEFAULT SETTINGS IF YOU ARE AN EXPERT!*

3-5-6-1 General

To set up the general aspects of the Database Service:

1.) Select **Configuration** > **Database Service...** from the Data Selector menu.
2.) Select the General tab from the Database Service Properties page.

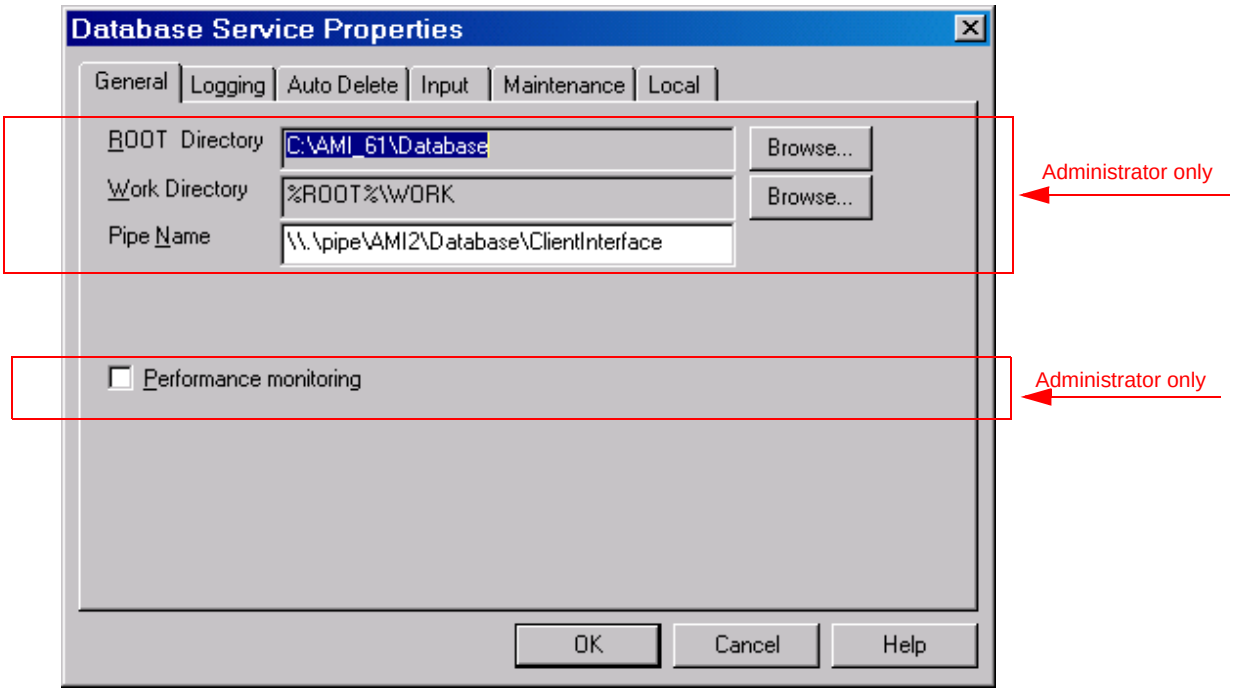


Figure 3-134 Database Service Properties - General (Default Settings)

- **ROOT Directory:** Click the Browse... button to locate the root directory of the Database Service. This is the directory where the DATABASE.EXE file is located.
- **Work Directory:** Click the Browse... button to specify a working directory to hold the temporary files generated by the database application.

3-5-6-1 General (cont'd)

- **Pipe Name:** Name of the pipe on which clients can connect with the Database Service.
- **Import priority:** The priority with which incoming items are imported into the database.
- **Performance monitoring:** Creates a log (DBS_Performance.log) of RadWorks' performance. The name of the log is DBS_Performance.log and it is stored in the RadStore log directory (X:\AMI_61\LOG).

3-5-6-2 Logging

To set and view RadWorks' logging properties:

1.) Select **Configuration** > **Database Service...** from the Data Selector menu.
2.) Select the Logging tab from the Database Service Properties page.

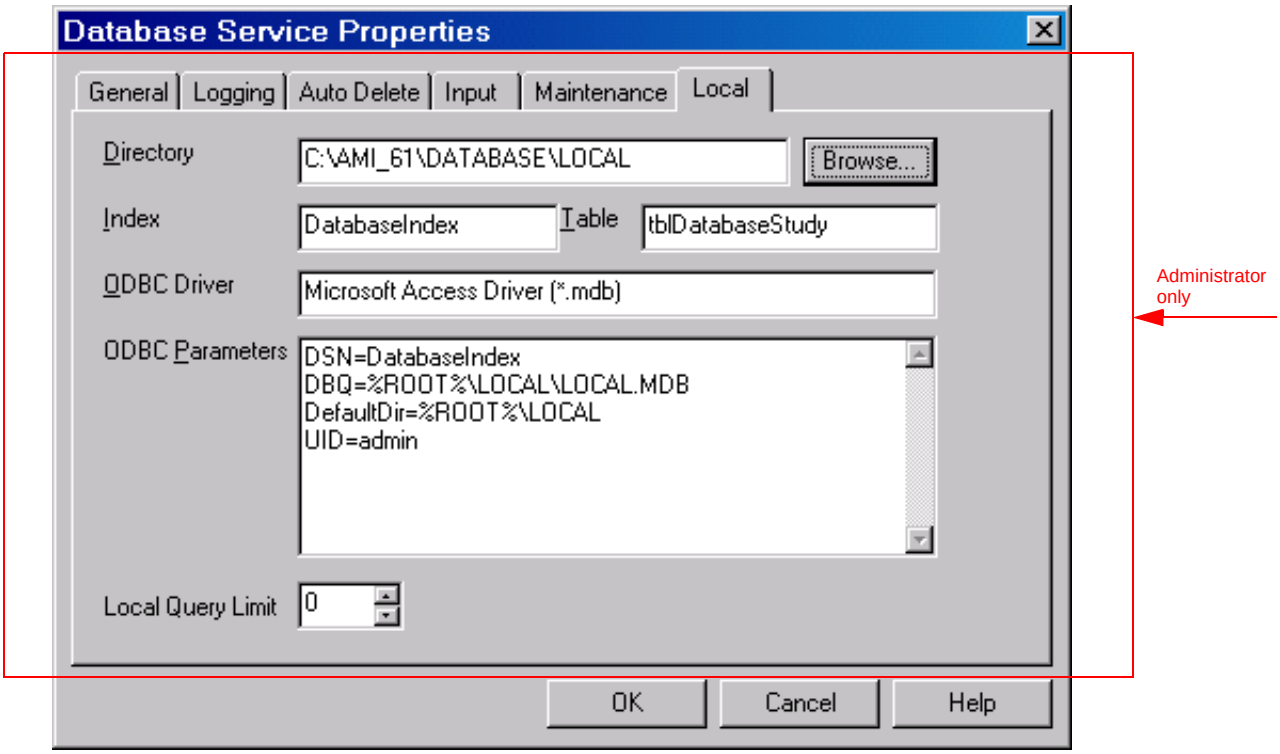


Figure 3-135 Database Service Properties - Logging (Default Settings)

- **Logging Level:** Set the level of logging messages. If set to ALL, all messages will be logged. If set to NORMAL (the typical setting) only error messages will be logged.
- **Logging Type:** Set the types of logging used by the RadWorks application. (Default: file)
  - **File:** If this check box is checked, RadWorks will write general information about its operation to the RadWorks.log file, which you can view in the Log folder.
  - **Pipe:** Used in combination with the listening tool in the X:\AMI_61\bin folder. Among other things, it enables you to observe DICOM transmissions in a pipe. Consult the technical reference manual or contact technical support for additional information.
  - **Console:** If this check box is checked, RadWorks will display a window that continuously shows the actions RadWorks is performing. This is useful when troubleshooting.
- **Log File:** Set the name of the log file. Each Service has its own default log filename.

3-5-6-2 Logging (cont'd)

- **Truncation Size (kB):** Set the truncation size of the logging file. The truncation size is the size the log file will be shortened to when its maximum size has been exceeded. (Default: 800 kB)
- **Maximum Size (kB):** Set the maximum size of the log file. (Default: 1024 kB)

  Set the Maximum Size of the log file to 0 to disable log file truncation. This can be very handy for troubleshooting.
- **Always Flush File after Write:** If checked, all logging actions will be written immediately to the log file. This option will have a serious impact on the performance of RadWorks, so it should not normally be checked. (Default: not checked)
- **Log Pipe:** Name of the pipe where logging information is written.

  (Default: \\.\pipe\AMI2\Database\Logging)

3-5-6-3 Auto Delete

WARNING **Danger of Data Loss!**

Activation of the function for automatic deletion of patient studies might cause data loss.

To avoid this back up your data frequently.

To set how and when files will be automatically removed from your system:

1.) Select **Configuration** > **Database Service...** from the Data Selector menu.
2.) Select the Auto Delete tab from the Database Service Properties page.

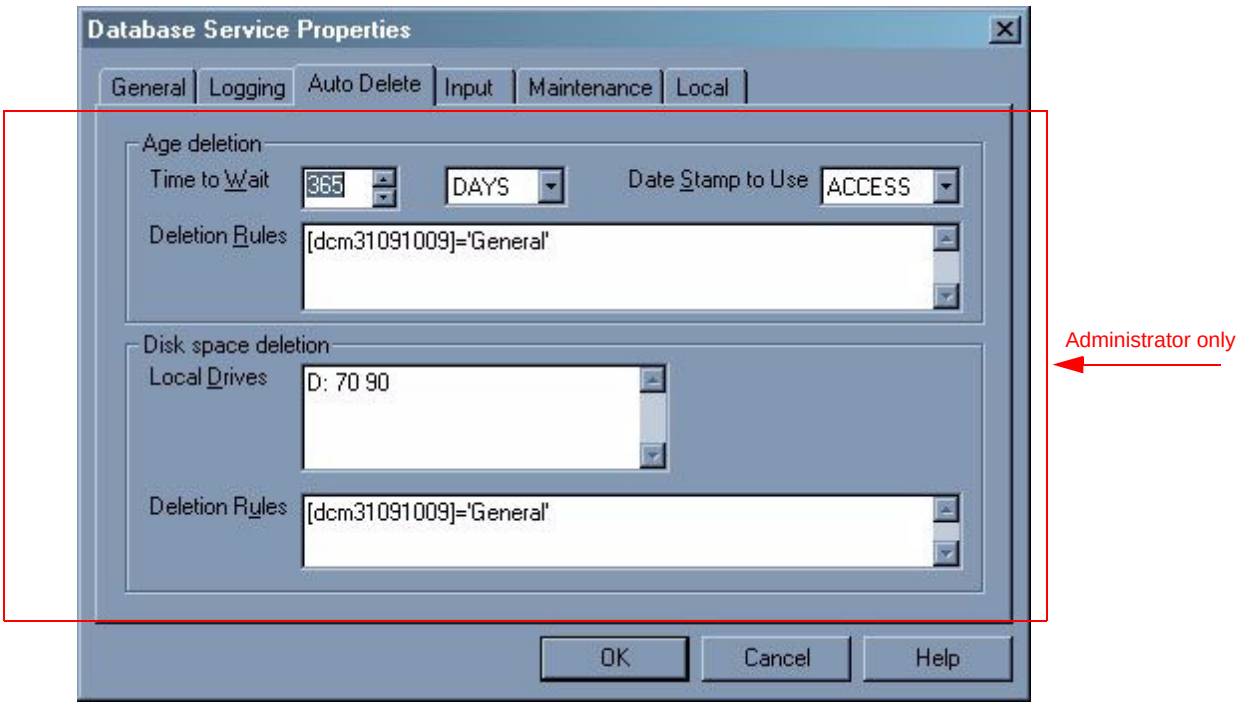


Figure 3-136 Database Service Properties - Auto Delete (Default Settings)

3-5-6-3 Auto Delete (cont'd)

- **Age deletion**
  - **Time to Wait:** Specify the age of image data (in days / hours) before the deletion rules will apply. If set to 0, no deletion will take place; if set to 2 DAYS for example, image files 2 days old or older will be removed.
  - **Date Stamp to Use:** Type of date stamp to use when checking the age of the data.
  - **Deletion Rules:** Rules which determine whether data will be deleted if it is older than the specified time frame. These rules are SQL (Structured Query Language) rules. Once one or more rules are entered, Auto Delete will be activated. If none of the studies match the criteria that have been set, disk space will not be released and new studies will be rejected due to a lack of disk space. Exercise caution when setting these rules.

    Deletion rules are only executed during a maintenance run.

    RadWorks 6.1 Services must be up and running at the time set for a maintenance run.

    Deletion rules are case sensitive.

- **Disk space deletion**
  - Type in the **Local Drives** field to define the drive letter and the minimum and maximum amount of free disk space (in percentages). Disk space values represent the percentage of free disk space available. For example, the setting 'C: 50 70' means that if the C: drive is more than 70% full, files will be deleted (according to the set of rules) until the 50% or less mark is reached. If the free space is less than the maximum percentage specified, the Database Service will commence deleting data until the minimum size is reached (following the deletion rules).
  - Type in the **Deletion Rules** field to add rules which determine if data will be deleted if disk space is above the maximum value. These are SQL rules. Automatic deletion will be activated once one or more rules have been entered. If Time to Wait or Date Stamp to Use have also been set, these rules will be executed first.

    If none of the studies match the criteria that have been set, disk space will not be released and new studies will be rejected due to lack of disk space. Exercise caution when setting these rules.

    Deletion rules are only executed during a maintenance run.

    RadWorks Services must be up and running at the time set for a maintenance run.

    Deletion rules are case sensitive.

3-5-6-4 Input

To specify the input-related settings for the Database Service:

1.) Select **Configuration** > **Database Service...** from the Data Selector menu.
2.) Select the Input tab from the Database Service Properties page.

3-5-6-4 Input (cont'd)

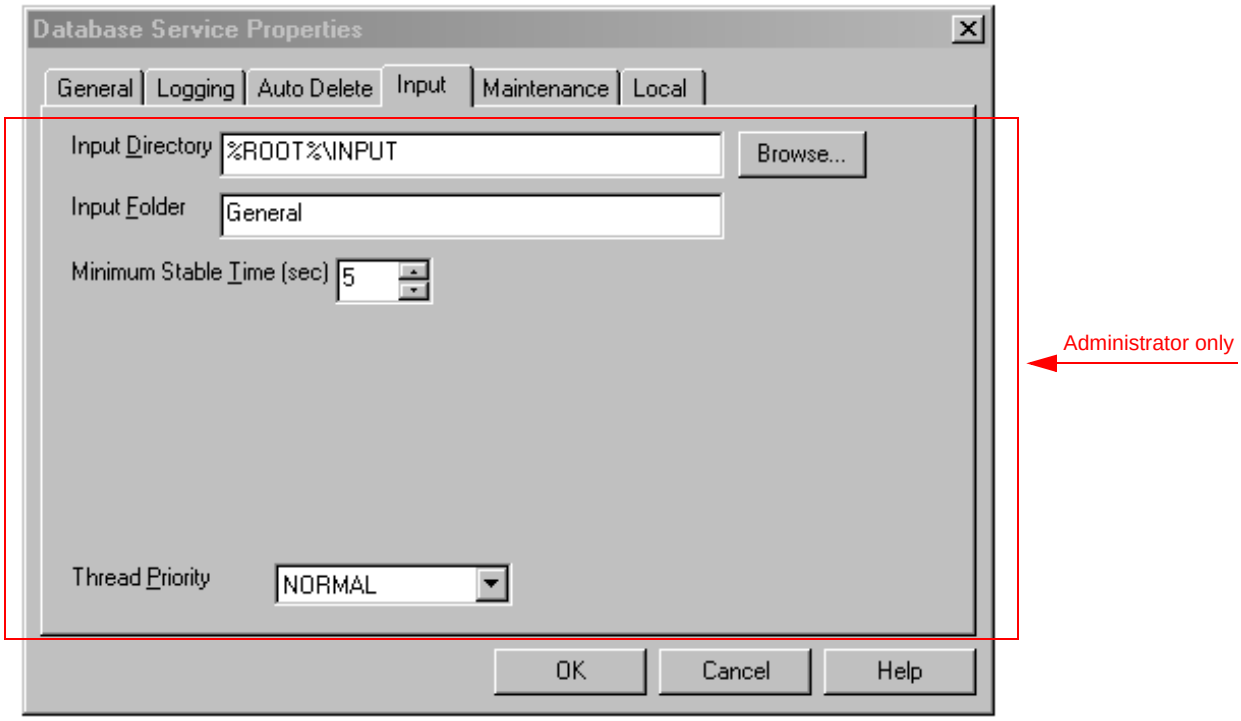


Figure 3-137 Database Service Properties - Input (Default settings)

- **Input Directory:** Directory which will be watched (monitored) for new data. Data converted to AMI format (.IMG and MET files) and copied into this directory will be automatically added to the local database. (Default: C:\AMI_61\DATABASE\INPUT)
- **Input Folder:** New data will be added to this folder in the local database.
- **Minimum Stable Time:** Time (in seconds) during which the input directory must be stable (there have been no writes to this directory) before the Database Service starts appending the data in the input directory to the local database.
- **Thread Priority:** Priority of the Input thread within the service. Changing this setting may influence system performance.

3-5-6-5 Maintenance

To set up the maintenance aspects of the Database Service:

1.) Select **Configuration** > **Database Service...** from the Data Selector menu.
2.) Select the Maintenance tab from the Database Service Properties page.

3-5-6-5 Maintenance (cont'd)

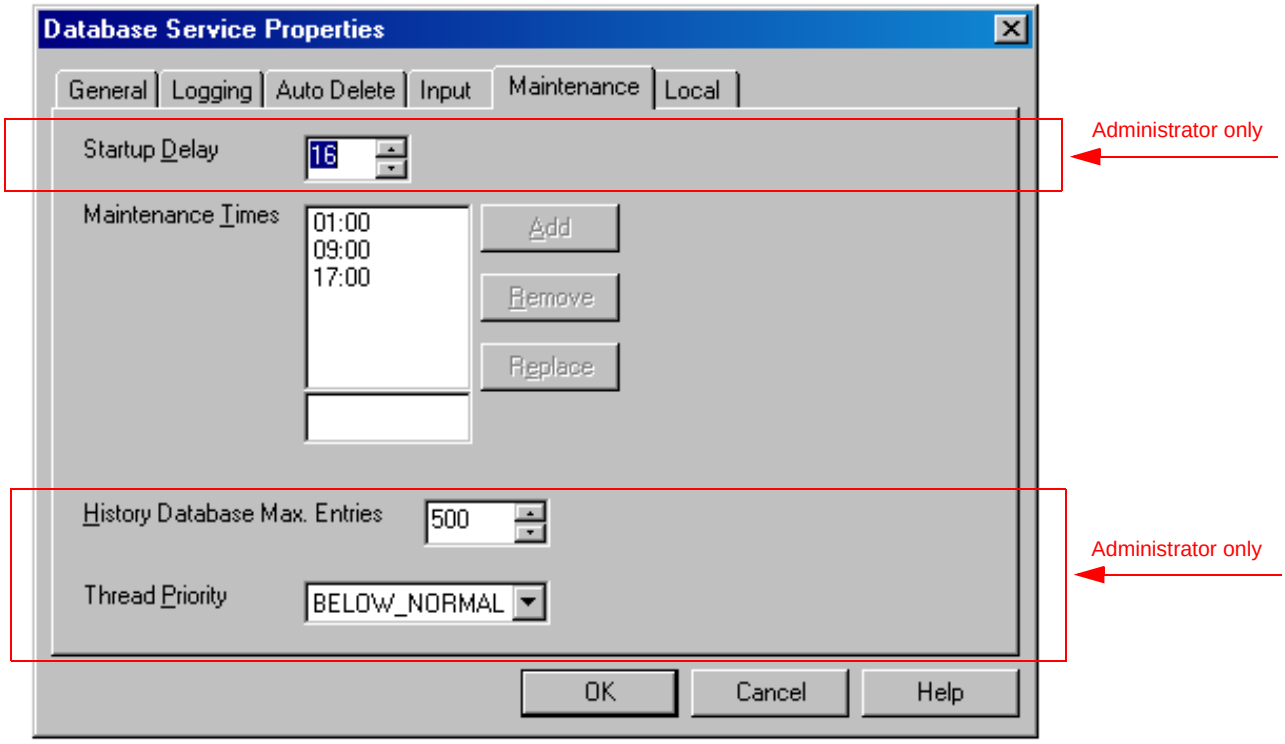


Figure 3-138 Database Service Properties - Maintenance (Default Settings)

- **Startup Delay:** Specify the delay (in seconds) after start-up before the first maintenance check will be performed.
- **Maintenance Times:** Specify at which times of the day (24-hour clock) a maintenance check will be performed. These checks will be performed each day, but only if the system is running at the scheduled time.
  - Add a time by filling in the field beneath the list of Maintenance Times and clicking on the **Add** button.
  - Remove a time by selecting the time in the Maintenance Times list and clicking the **Remove** button.
  - Replace one maintenance time with another by filling in the field beneath the list of Maintenance Times, selecting the time you want to replace and clicking the **Replace** button.
- **History Database Max. Entries:** Specify the maximum number of entries which are to be included in the history database. The least recent entries will be removed to make way for new entries once the figure you specify here is reached.
- **Thread Priority:** Set the priority of the maintenance thread within the service. Changing this setting may influence system performance.

3-5-6-6 Local

To set up the local database aspects of the Database Service:

1.) Select **Configuration** > **Database Service...** from the Data Selector menu.
2.) Select the Local tab from the Database Service Properties page.

NOTE *Remember: Only change if you are an expert!*

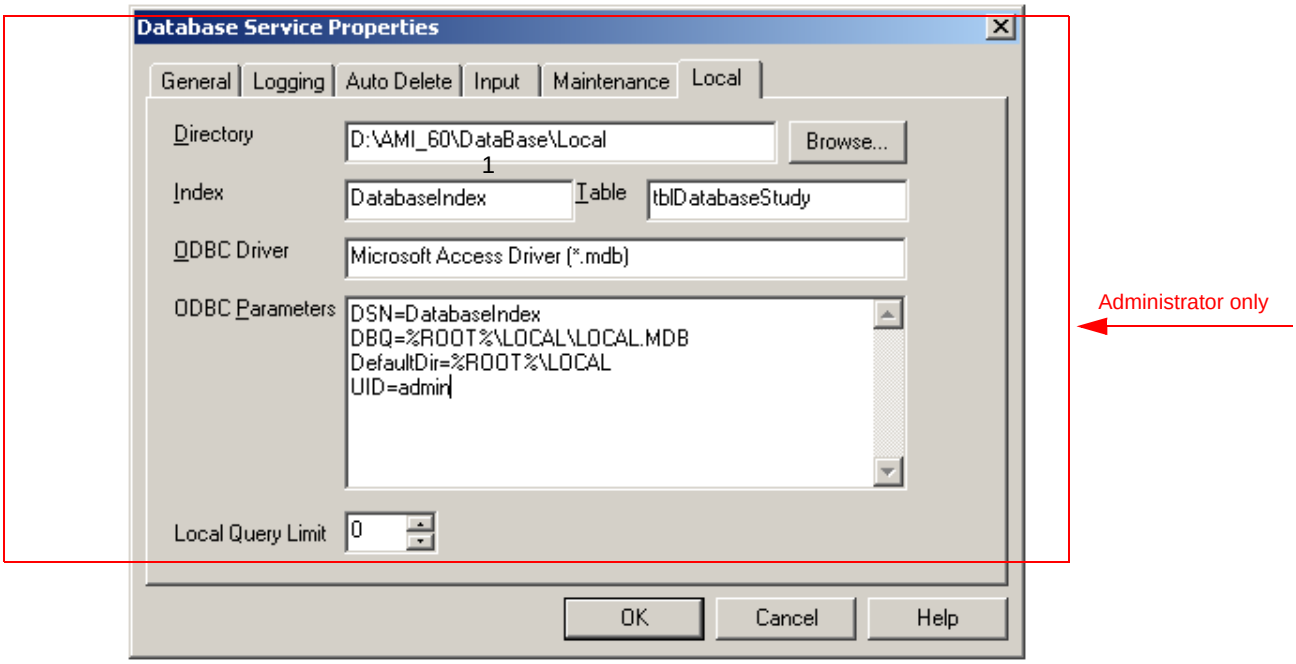


Figure 3-139 Database Service Properties - Local (Default settings)

- **Directory:** Specify the root directory of the local database. All folders will have sub-directories of this directory.
- **Index:** Specify the name of the DSN (Data Source Name) used.
- **Table:** Specify the name of the table in the database.
- **ODBC Driver:** Specify the ODBC driver to be used.
- **ODBC Parameters:** Parameters required to create a DSN (Data Source Name) in ODBC.
- **Local Query Limit:** The maximum number of studies or patients LOGIQworks will display as a result of a local query. You can specify up to a maximum of 100,000. Leave the setting at 0 if you want LOGIQworks to be able to show the maximum.

3-5-7 Database Service Properties for LOGIQworks 2.0 and 3.0

WARNING *ONLY CHANGE THE DEFAULT SETTINGS IF YOU ARE AN EXPERT!*

3-5-7-1 General

To set up the general aspects of the Database Service:

1.) Select **Configuration** > **Database Service...** from the Data Selector menu.

3-5-7-1 General (cont'd)

2.) Select the General tab from the Database Service Properties page.

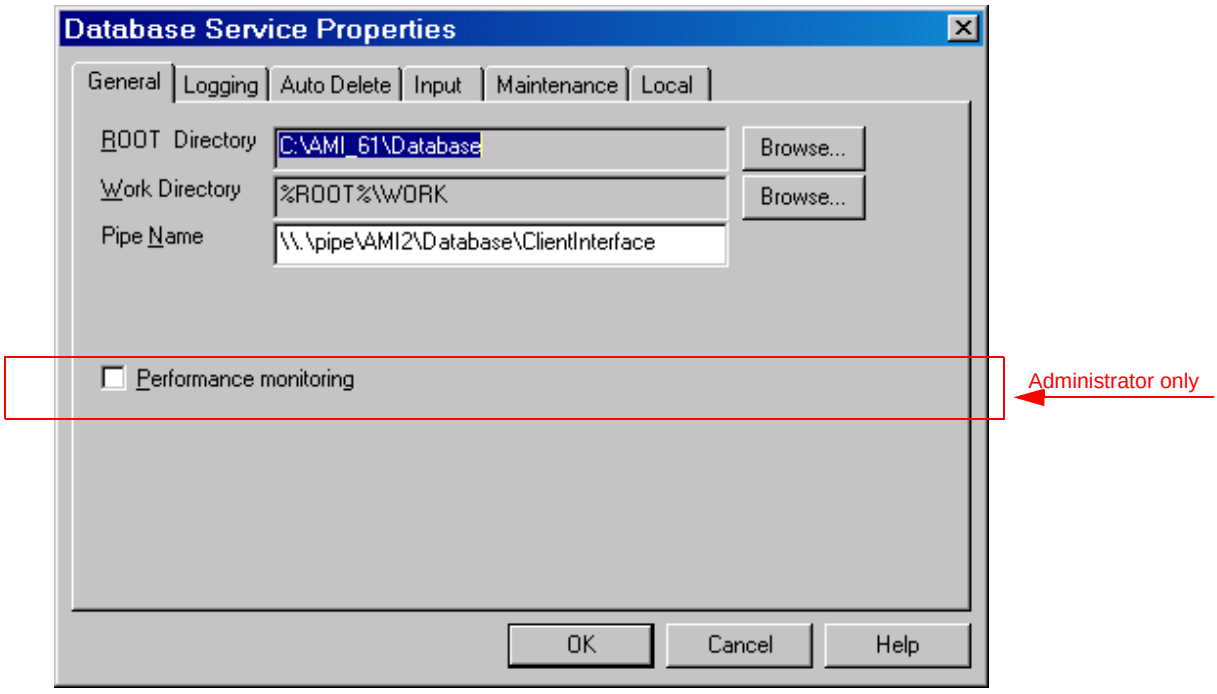


Figure 3-140 Database Service Properties - General (Default Settings)

- **Performance monitoring:** Creates a log (DBS_Performance.log) of RadWorks' performance. The name of the log is DBS_Performance.log and it is stored in the RadStore log directory%DATADIR%\LOG

3-5-7-2 Logging

To set and view RadWorks' logging properties:

1.) Select **Configuration** > **Database Service...** from the Data Selector menu.

2.) Select the Logging tab from the Database Service Properties page.

3-5-7-2 Logging (cont'd)

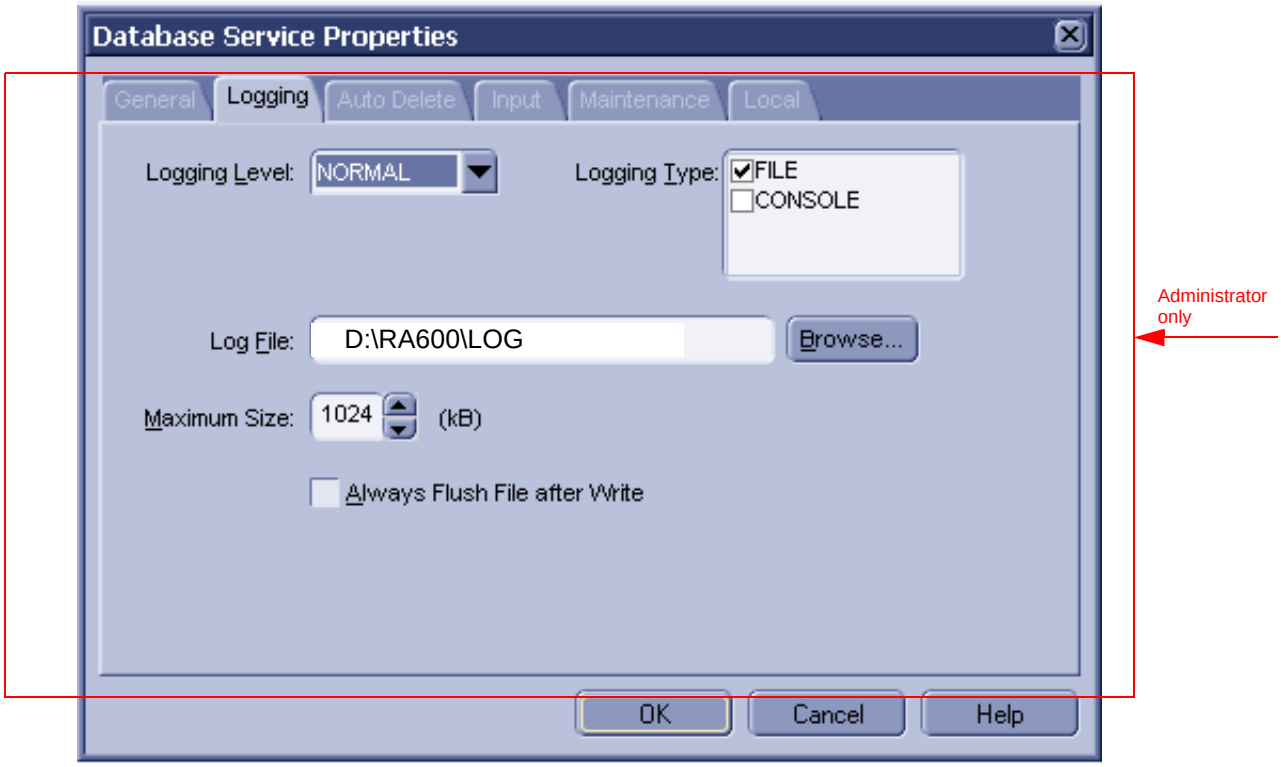


Figure 3-141 Database Service Properties - Logging (Default Settings)

- **Logging Level:** Set the level of logging messages. If set to ALL, all messages will be logged. If set to NORMAL (the typical setting) only error messages will be logged.
- **Logging Type:** Set the types of logging used by the RadWorks application. (Default: file)
  - **File:** If this check box is checked, RadWorks will write general information about its operation to the RadWorks.log file, which you can view in the Log folder.
  - **Console:** If this check box is checked, RadWorks will display a window that continuously shows the actions RadWorks is performing. This is useful when troubleshooting.
- **Log File:** Set the name of the log file. Each Service has its own default log filename.

3-5-7-2 Logging (cont'd)

- **Maximum Size (kB):** Set the maximum size of the log file. (Default: 1024 kB)

  Set the Maximum Size of the log file to 0 to disable log file truncation. This can be very handy for troubleshooting.

- **Always Flush File after Write:** If checked, all logging actions will be written immediately to the log file. This option will have a serious impact on the performance of RadWorks, so it should not normally be checked. (Default: not checked)

3-5-7-3 Auto Delete

WARNING **Danger of Data Loss!**

Activation of the function for automatic deletion of patient studies might cause data loss.

To avoid this back up your data frequently.

To set how and when files will be automatically removed from your system:

1.) Select **Configuration** > **Database Service...** from the Data Selector menu.
2.) Select the Auto Delete tab from the Database Service Properties page.

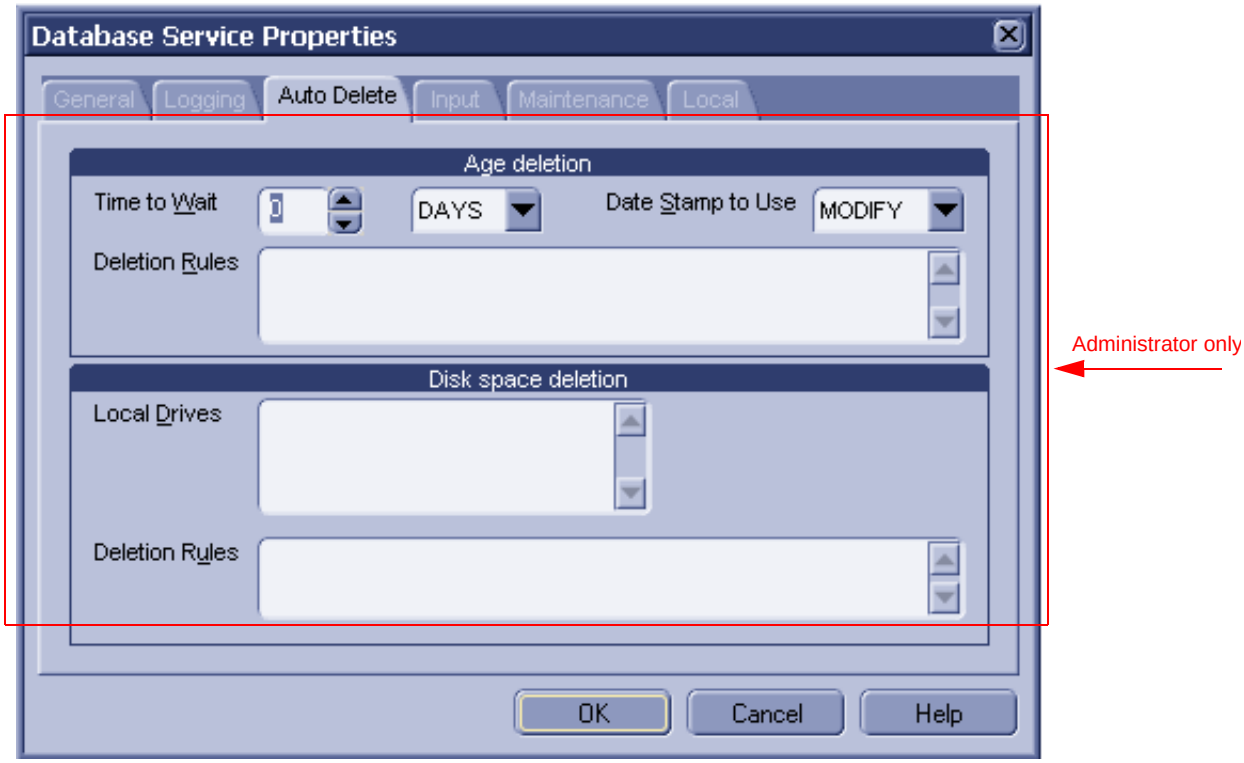


Figure 3-142 Database Service Properties - Auto Delete (Default Settings)

- **Age deletion**
  - **Time to Wait:** Specify the age of image data (in days / hours) before the deletion rules will apply. If set to 0, no deletion will take place; if set to 2 DAYS for example, image files 2 days old or older will be removed.
  - **Date Stamp to Use:** Type of date stamp to use when checking the age of the data.

3-5-7-3 Auto Delete (cont'd)

- **Deletion Rules:** Rules which determine whether data will be deleted if it is older than the specified time frame. These rules are SQL (Structured Query Language) rules. Once one or more rules are entered, Auto Delete will be activated. If none of the studies match the criteria that have been set, disk space will not be released and new studies will be rejected due to a lack of disk space. Exercise caution when setting these rules.

  Deletion rules are only executed during a maintenance run.

  RadWorks 6.1 Services must be up and running at the time set for a maintenance run.

  Deletion rules are case sensitive.

- **Disk space deletion**
  - Type in the **Local Drives** field to define the drive letter and the minimum and maximum amount of free disk space (in percentages). Disk space values represent the percentage of free disk space available. For example, the setting 'C: 50 70' means that if the C: drive is more than 70% full, files will be deleted (according to the set of rules) until the 50% or less mark is reached. If the free space is less than the maximum percentage specified, the Database Service will commence deleting data until the minimum size is reached (following the deletion rules).
  - Type in the **Deletion Rules** field to add rules which determine if data will be deleted if disk space is above the maximum value. These are SQL rules. Automatic deletion will be activated once one or more rules have been entered. If Time to Wait or Date Stamp to Use have also been set, these rules will be executed first.

    If none of the studies match the criteria that have been set, disk space will not be released and new studies will be rejected due to lack of disk space. Exercise caution when setting these rules.

    Deletion rules are only executed during a maintenance run.

    RadWorks Services must be up and running at the time set for a maintenance run.

    Deletion rules are case sensitive.

3-5-7-4 Input

To specify the input-related settings for the Database Service:

1.) Select **Configuration** > **Database Service...** from the Data Selector menu.
2.) Select the Input tab from the Database Service Properties page.

3-5-7-4 Input (cont'd)

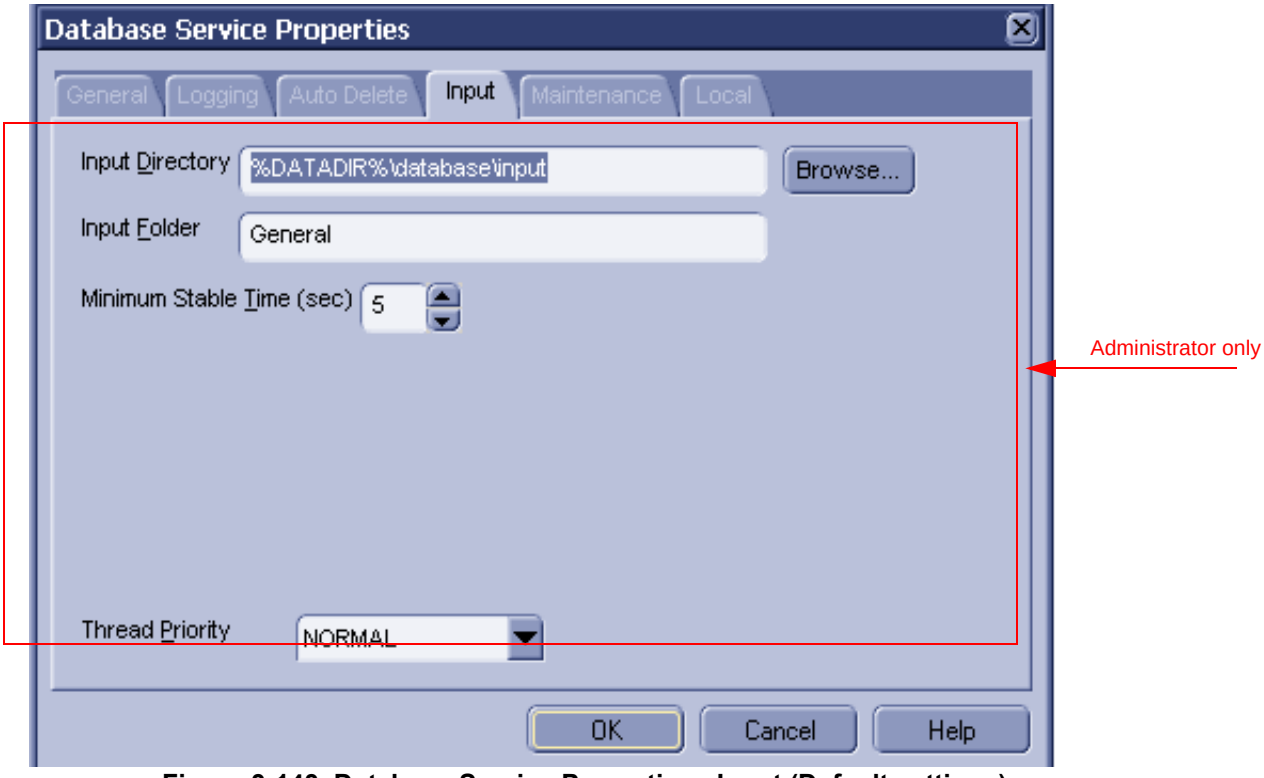


Figure 3-143 Database Service Properties - Input (Default settings)

- **Input Directory:** Directory which will be watched (monitored) for new data. Data converted to AMI format (.IMG and MET files) and copied into this directory will be automatically added to the local database. (Default: %DATADIR%\DATABASE\INPUT)
- **Input Folder:** New data will be added to this folder in the local database.
- **Minimum Stable Time:** Time (in seconds) during which the input directory must be stable (there have been no writes to this directory) before the Database Service starts appending the data in the input directory to the local database.
- **Thread Priority:** Priority of the Input thread within the service. Changing this setting may influence system performance.

3-5-7-5 Maintenance

To set up the maintenance aspects of the Database Service:

1.) Select **Configuration** > **Database Service...** from the Data Selector menu.
2.) Select the Maintenance tab from the Database Service Properties page.

3-5-7-5 Maintenance (cont'd)

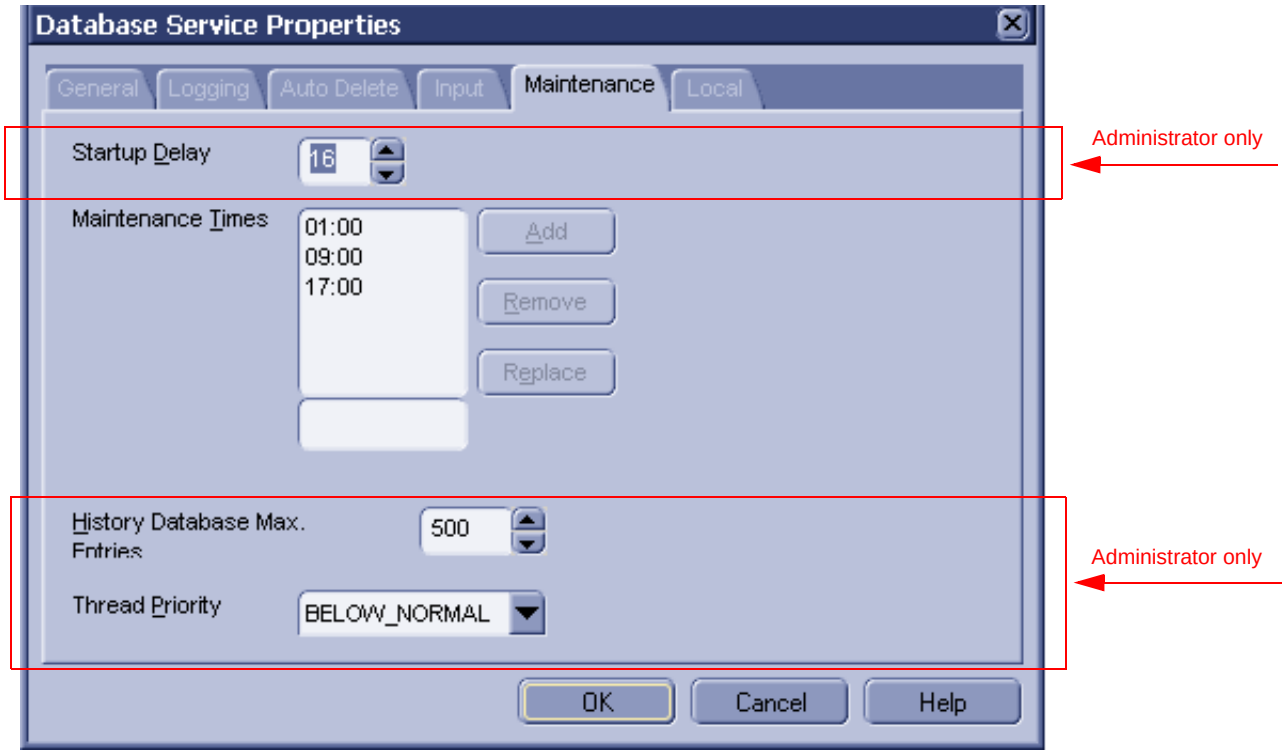


Figure 3-144 Database Service Properties - Maintenance (Default Settings)

- **Startup Delay:** Specify the delay (in seconds) after start-up before the first maintenance check will be performed.
- **Maintenance Times:** Specify at which times of the day (24-hour clock) a maintenance check will be performed. These checks will be performed each day, but only if the system is running at the scheduled time.
  - Add a time by filling in the field beneath the list of Maintenance Times and clicking on the **Add** button.
  - Remove a time by selecting the time in the Maintenance Times list and clicking the **Remove** button.
  - Replace one maintenance time with another by filling in the field beneath the list of Maintenance Times, selecting the time you want to replace and clicking the **Replace** button.
- **History Database Max. Entries:** Specify the maximum number of entries which are to be included in the history database. The least recent entries will be removed to make way for new entries once the figure you specify here is reached.
- **Thread Priority:** Set the priority of the maintenance thread within the service. Changing this setting may influence system performance.

3-5-7-6 Local

To set up the local database aspects of the Database Service:

1.) Select **Configuration** > **Database Service...** from the Data Selector menu.
2.) Select the Local tab from the Database Service Properties page.

NOTE *Remember: Only change if you are an expert!*

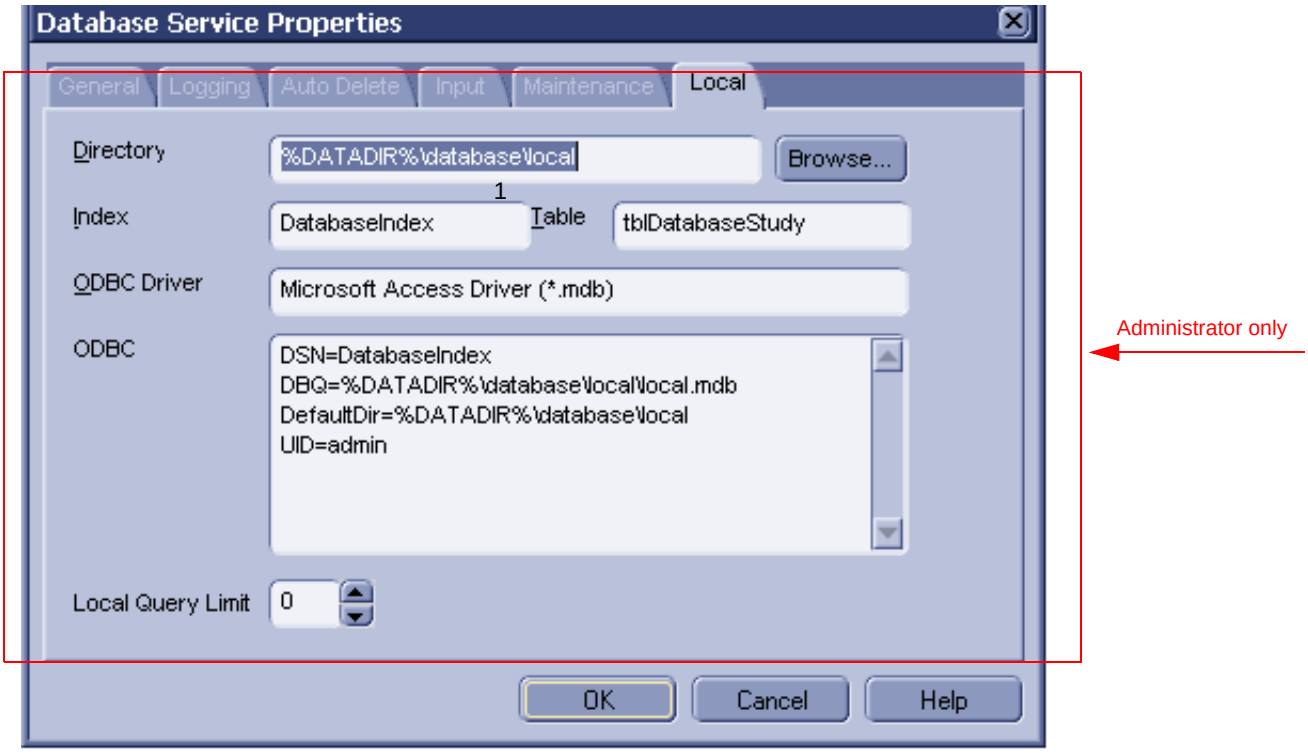


Figure 3-145 Database Service Properties - Local (Default settings)

- **Directory:** Specify the root directory of the local database. All folders will have sub-directories of this directory.
- **Index:** Specify the name of the DSN (Data Source Name) used.
- **Table:** Specify the name of the table in the database.
- **ODBC Driver:** Specify the ODBC driver to be used.
- **ODBC:** Parameters required to create a DSN (Data Source Name) in ODBC.
- **Local Query Limit:** The maximum number of studies or patients LOGIQworks will display as a result of a local query. You can specify up to a maximum of 100,000. Leave the setting at 0 if you want LOGIQworks to be able to show the maximum.

3-5-8 Print Services up to LOGIQworks 1.3

NOTE *ONLY APPLY CHANGES TO THE DEFAULT SETTINGS IF YOU ARE AN EXPERT!*

3-5-8-1 General

To set general properties for the LOGIQworks Print Service:

1.) Select **Configuration** > **Print Service...** from the Data Selector menu.
2.) Select the General tab from the Print Service Properties page.

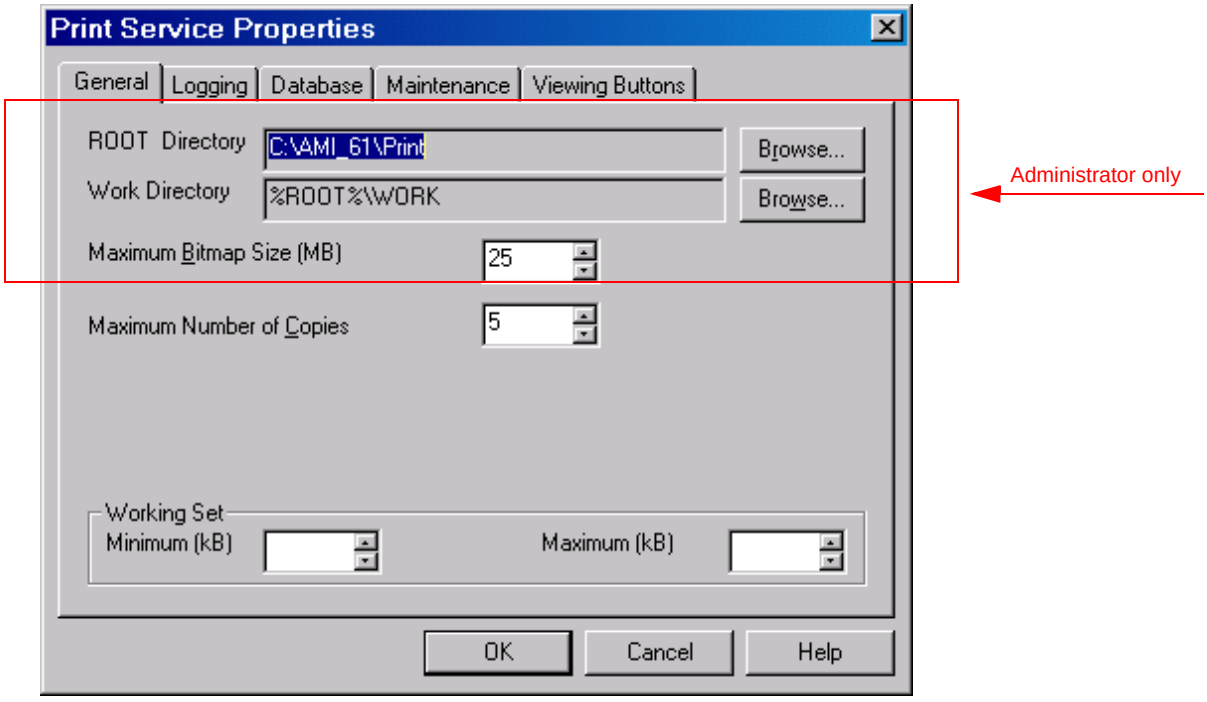


Figure 3-146 Print Service Properties - General (Default settings)

- **ROOT Directory:** The root directory of the Print Service where PRINT.EXE resides.
- **Work Directory:** Directory where temporary files generated by the Print Module/Service are placed.
- **Maximum Bitmap Size:** Set the maximum size of bitmaps that LOGIQworks will export/print.
- **Maximum Number of Copies:** Adjust the maximum number of copies of an image a printer can turn out.
- **Working Set**
  - **Minimum/Maximum (kB):** Working set for the service. The service will always have an amount of physical RAM available within these limits.

3-5-8-2 Logging

To set and view RA600 logging properties:

1.) Select **Configuration** > **Print Service...** from the Data Selector menu.
2.) Select the Logging tab from the Print Service Properties page.

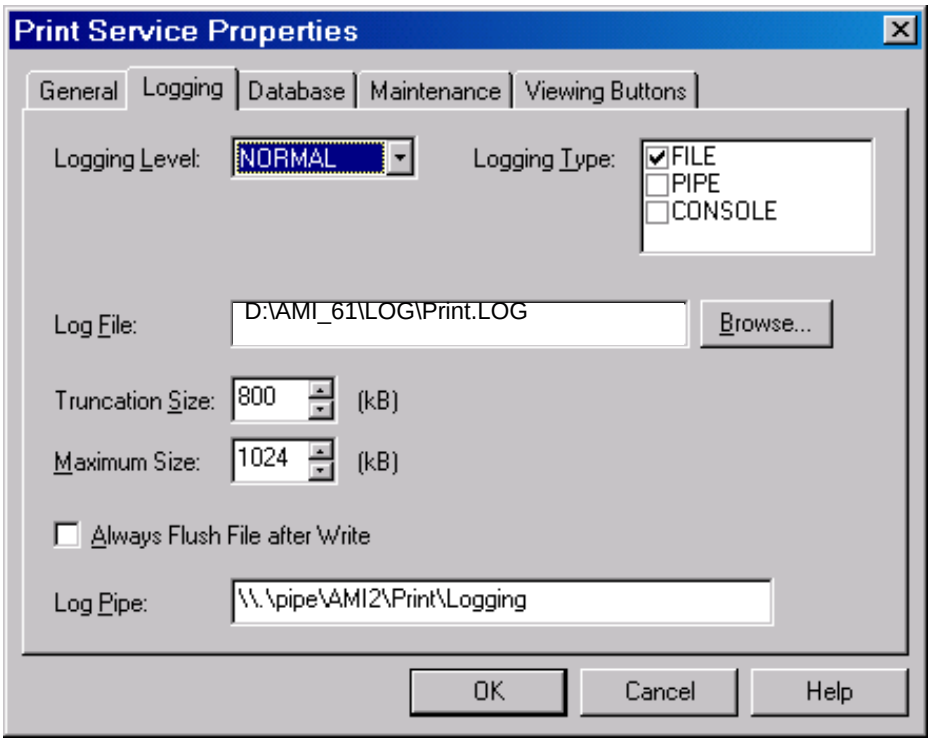


Figure 3-147 Print Service Properties - Logging (Default settings)

- **Logging Level:** Set the level of logging messages. If set to ALL, all messages will be logged. If set to NORMAL (the typical setting) only error messages will be logged.
- **Logging Type:** Set the types of logging used by the RadWorks application. (Default: File)
  - **File:** If this check box is checked, RadWorks will write general information about its operation to the RadWorks.log file, which you can view in the Log folder.
  - **Pipe:** Used in combination with the listening tool in the X:\AMI_61\bin folder. Among other things, it enables you to observe DICOM transmissions in a pipe. Consult the technical reference manual or contact technical support for additional information.
  - **Console:** If this check box is checked, RadWorks will display a window that continuously shows the actions RadWorks is performing. This is useful when troubleshooting.
- **Log File:** Set the name of the log file. Each Service has its own default log filename.
- **Truncation Size (kB):** Set the truncation size of the logging file. The truncation size is the size the log file will be shortened to when its maximum size has been exceeded. (Default: 800 kB)
- **Maximum Size (kB):** Set the maximum size of the log file. (Default: 1024 kB)

  Set the Maximum Size of the log file to 0 to disable log file truncation. This can be very handy for troubleshooting.

3-5-8-2 Logging (cont'd)

- **Always Flush File after Write:** If checked, all logging actions will be written immediately to the log file. This option will have a serious impact on the performance of RadWorks, so it should not normally be checked. (Default: not checked)
- **Log Pipe:** Name of the pipe where logging information is written.
  (Default: \\.\pipe\AMI2\Print\Logging)

3-5-8-3 Database

To set database properties for the LOGIQworks Print Service:

1.) Select **Configuration** > **Print Service...** from the Data Selector menu.
2.) Select the Database tab from the Print Service Properties page.

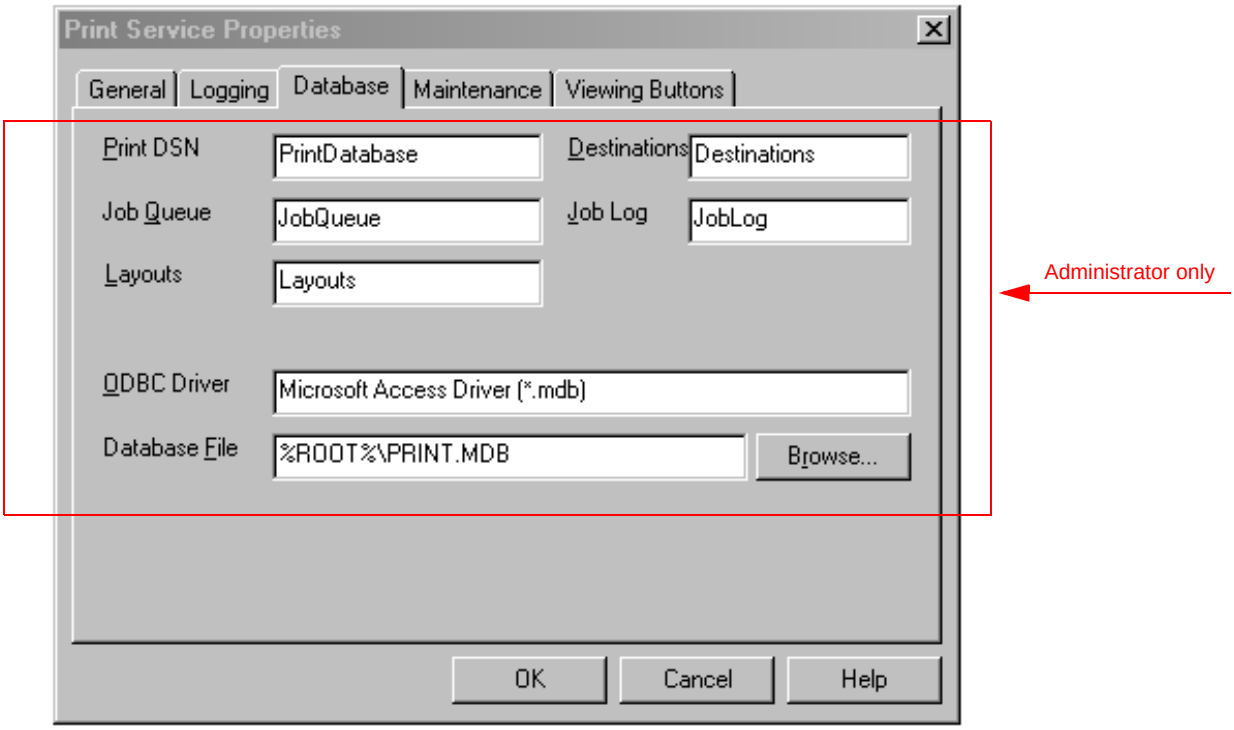


Figure 3-148 Print Service Properties - Database (Default settings)

- **Print DSN:** The name of the (ODBC) Data Source Name for the Print Service.
- **Destinations:** The name of the database table that lists the print destinations.
- **Job Queue:** The name of the Queue database table which lists the print jobs to be executed (or in error state).
- **Job Log:** The name of the Job Log database table which lists the successfully completed print jobs.
- **Layouts:** The name of the database table storing the layouts created.
- **ODBC Driver:** Specify the ODBC driver to be used.
- **Database File:** Enter the database file that the Print Service should use. Click the Browse... button to locate a file.

3-5-8-4 Maintenance

To specify maintenance tasks relating to the LOGIQworks Print Service:

1.) Select **Configuration** > **Print Service...** from the Data Selector menu.
2.) Select the Maintenance tab from the Print Service Properties page.

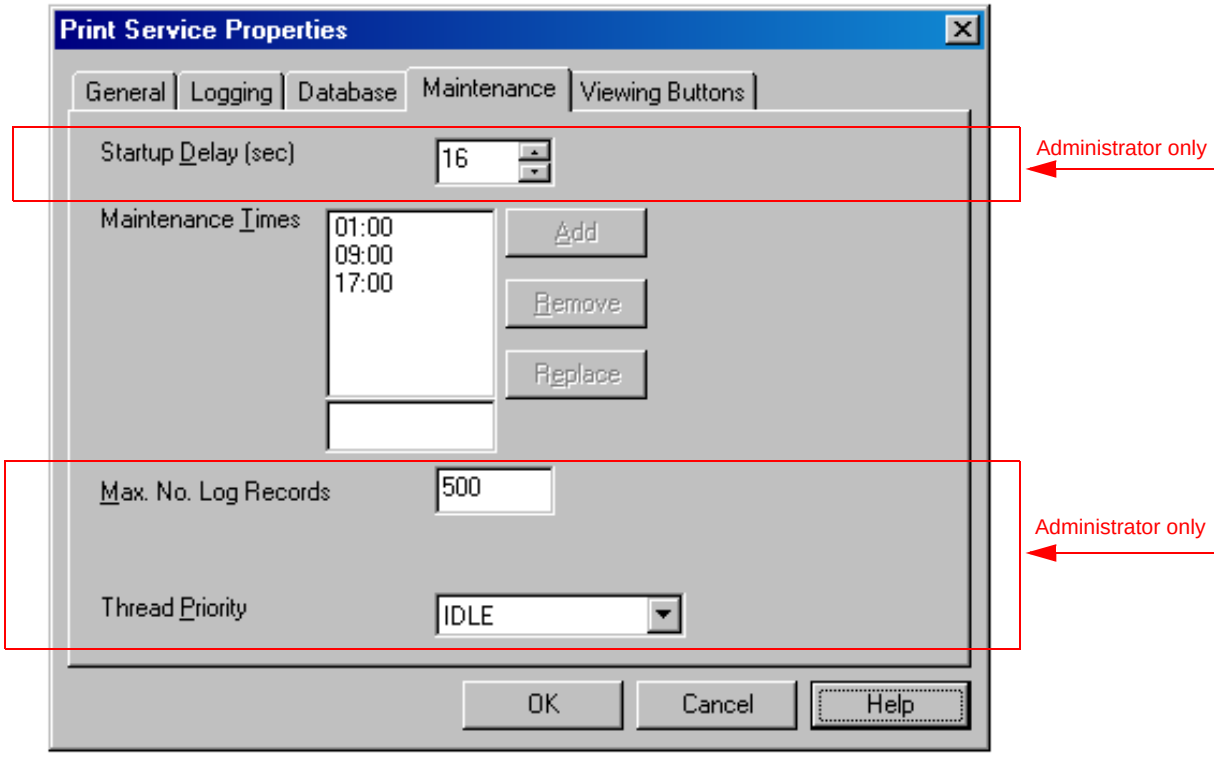


Figure 3-149 Print Service Properties - Maintenance (Default settings)

- **Startup Delay:** Specify the delay (in seconds) after start-up after which the first maintenance check will be performed.
- **Maintenance Times:** Specifies at which moments in time a maintenance check will be performed. These checks are done every day, and only if the system is up and running at that. (Default: 01:00, 09:00 and 17:00).
  - You can add a time by filling in the field beneath the list of Maintenance Times and clicking on the **Add** button.
  - You can delete a time by selecting the time in the Maintenance Times list and clicking the **Remove** button.
  - You replace one maintenance time with another by filling in the field beneath the list of Maintenance Times, selecting the time you want to replace and clicking the **Replace** button.
- **Max. No. Log Records:** The maximum permitted size of the job log. If the number of job log records exceeds this, the log will be truncated to the stated size by deleting the oldest jobs first.
- **Thread Priority:** Priority of the Maintenance thread within the service. Changing this setting may influence system performance.

3-5-8-5 Viewing Buttons

To select the layout types to be previewed on the Print tool tab:

1.) Select **Configuration** > **Print Service...** from the Data Selector menu.
2.) Select the Viewing Buttons tab from the Print Service Properties page.

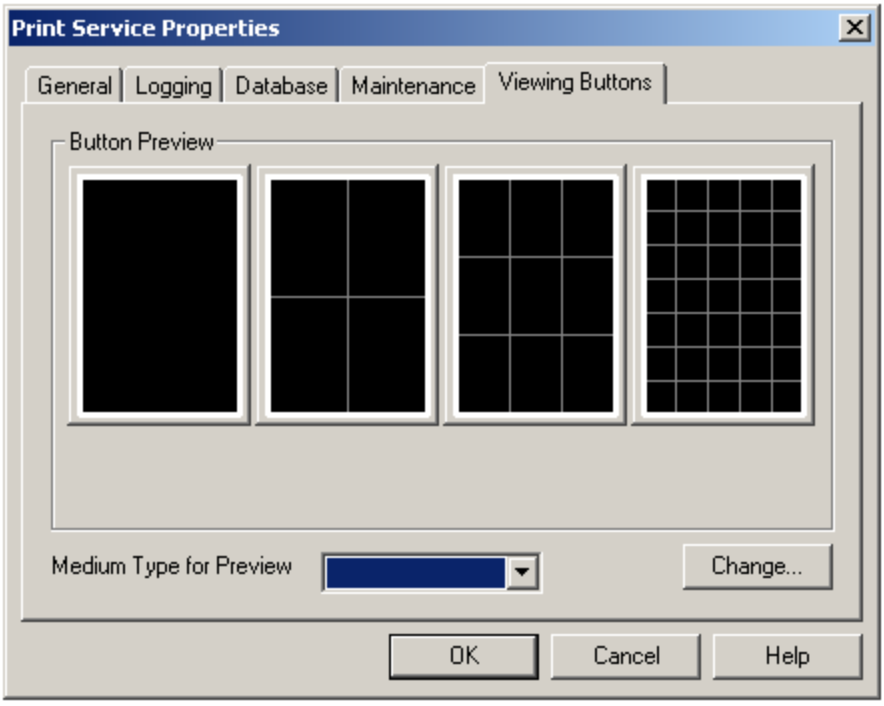


Figure 3-150 Print Layout Types

- **Button Preview:** A preview of the buttons that will appear on the Print tool tab in the Viewing Section.
- **Medium Type for Preview:** Select a medium size from the drop-down list of common sizes. LOGIQworks will use this size when creating the previews.
- Click on the **Change...** button to change the selection of layouts to be shown on the Print tool tab in the Viewing Section.

3-5-9 Print Services for LOGIQworks 2.0 and 3.0

NOTE *ONLY APPLY CHANGES TO THE DEFAULT SETTINGS IF YOU ARE AN EXPERT!*

3-5-9-1 General

To set general properties for the LOGIQworks Print Service:

1.) Select **Configuration** > **Print Service...** from the Data Selector menu.
2.) Select the General tab from the Print Service Properties page.

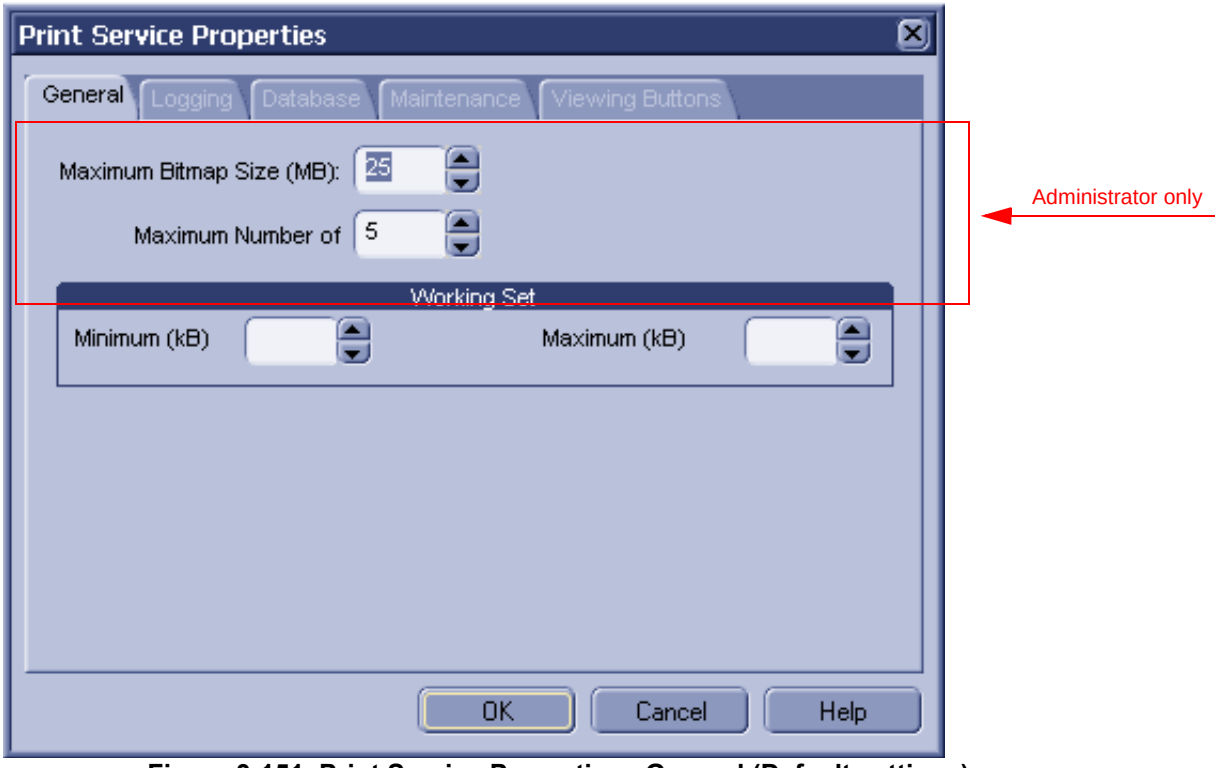


Figure 3-151 Print Service Properties - General (Default settings)

- **Maximum Bitmap Size:** Set the maximum size of bitmaps that LOGIQworks will export/print.
- **Maximum Number of Copies:** Adjust the maximum number of copies of an image a printer can turn out.
- **Working Set**
  - **Minimum/Maximum (kB):** Working set for the service. The service will always have an amount of physical RAM available within these limits.

3-5-9-2 Logging

To set and view RA600 logging properties:

1.) Select **Configuration** > **Print Service...** from the Data Selector menu.
2.) Select the Logging tab from the Print Service Properties page.

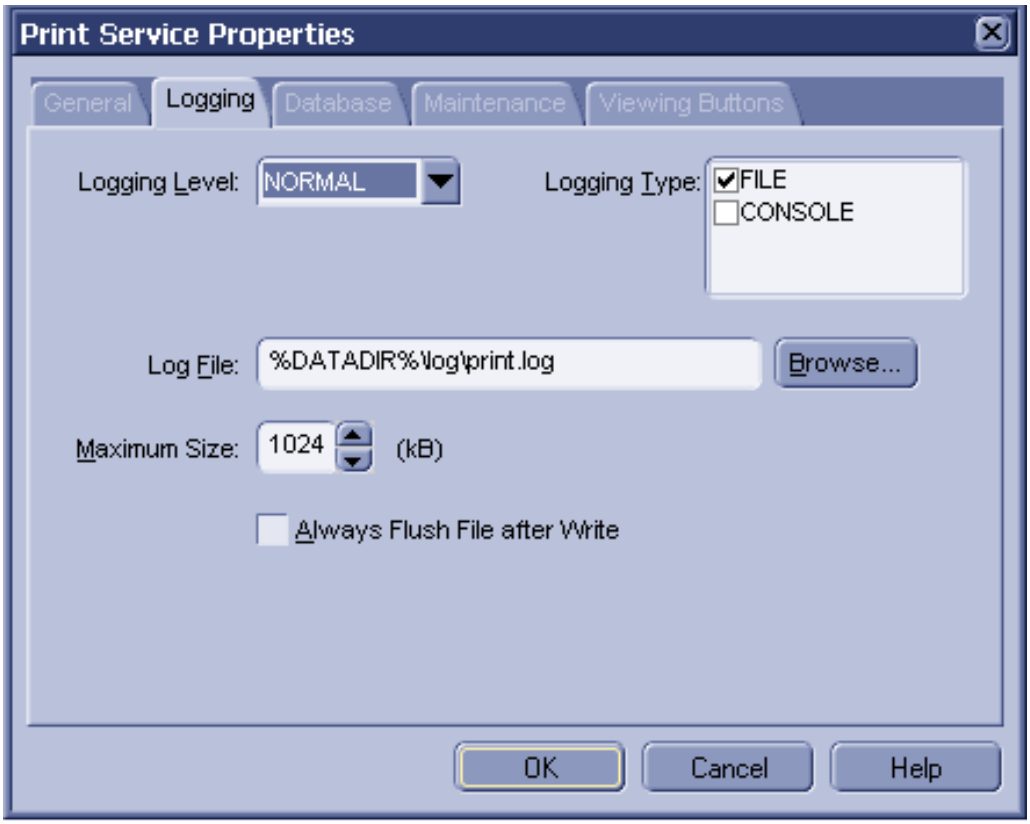


Figure 3-152 Print Service Properties - Logging (Default settings)

- **Logging Level:** Set the level of logging messages. If set to ALL, all messages will be logged. If set to NORMAL (the typical setting) only error messages will be logged.
- **Logging Type:** Set the types of logging used by the RadWorks application. (Default: File)
  - **File:** If this check box is checked, RadWorks will write general information about its operation to the RadWorks.log file, which you can view in the Log folder.
  - **Console:** If this check box is checked, RadWorks will display a window that continuously shows the actions RadWorks is performing. This is useful when troubleshooting.
- **Log File:** Set the name of the log file. Each Service has its own default log filename.
- **Maximum Size (kB):** Set the maximum size of the log file. (Default: 1024 kB)

  Set the Maximum Size of the log file to 0 to disable log file truncation. This can be very handy for troubleshooting.

3-5-9-2 Logging (cont'd)

- **Always Flush File after Write:** If checked, all logging actions will be written immediately to the log file. This option will have a serious impact on the performance of RadWorks, so it should not normally be checked. (Default: not checked))

3-5-9-3 Database

To set database properties for the LOGIQworks Print Service:

1.) Select **Configuration** > **Print Service...** from the Data Selector menu.
2.) Select the Database tab from the Print Service Properties page.

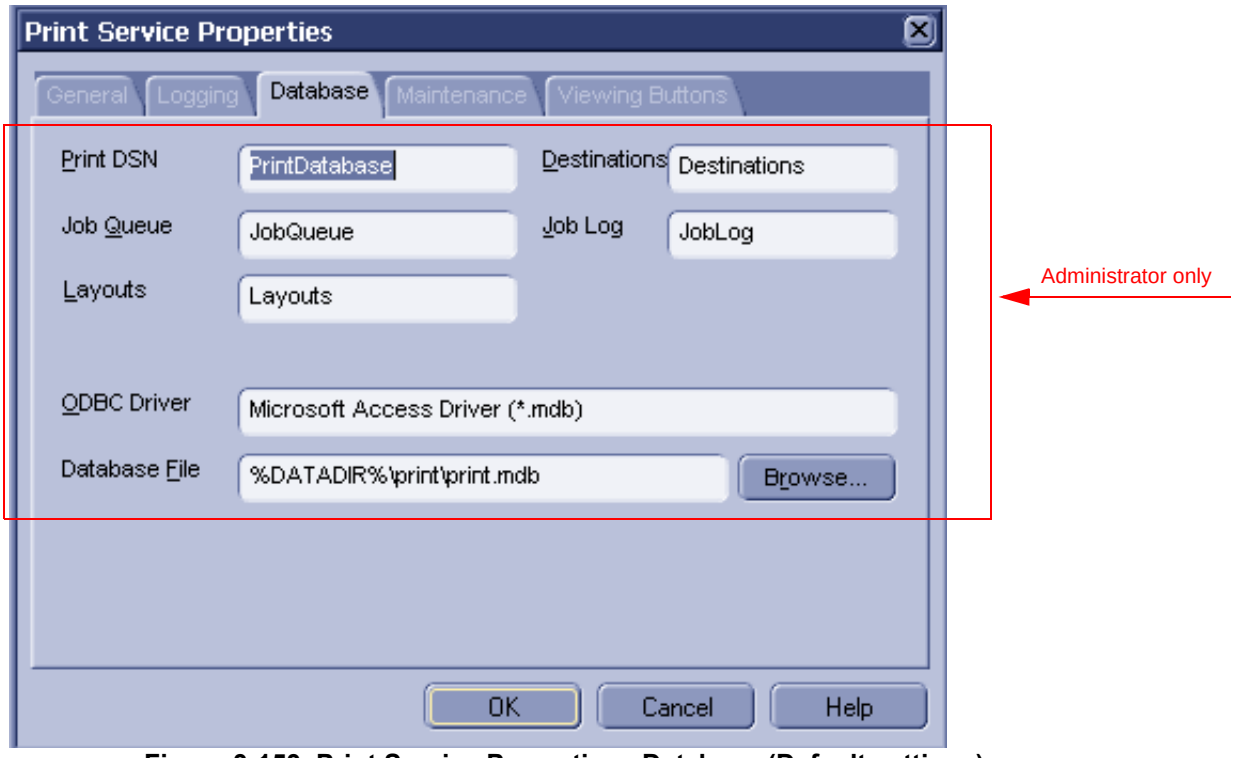


Figure 3-153 Print Service Properties - Database (Default settings)

- **Print DSN:** The name of the (ODBC) Data Source Name for the Print Service.
- **Destinations:** The name of the database table that lists the print destinations.
- **Job Queue:** The name of the Queue database table which lists the print jobs to be executed (or in error state).
- **Job Log:** The name of the Job Log database table which lists the successfully completed print jobs.
- **Layouts:** The name of the database table storing the layouts created.
- **ODBC Driver:** Specify the ODBC driver to be used.
- **Database File:** Enter the database file that the Print Service should use. Click the Browse... button to locate a file.

3-5-9-4 Maintenance

To specify maintenance tasks relating to the LOGIQworks Print Service:

1.) Select **Configuration** > **Print Service...** from the Data Selector menu.
2.) Select the Maintenance tab from the Print Service Properties page.

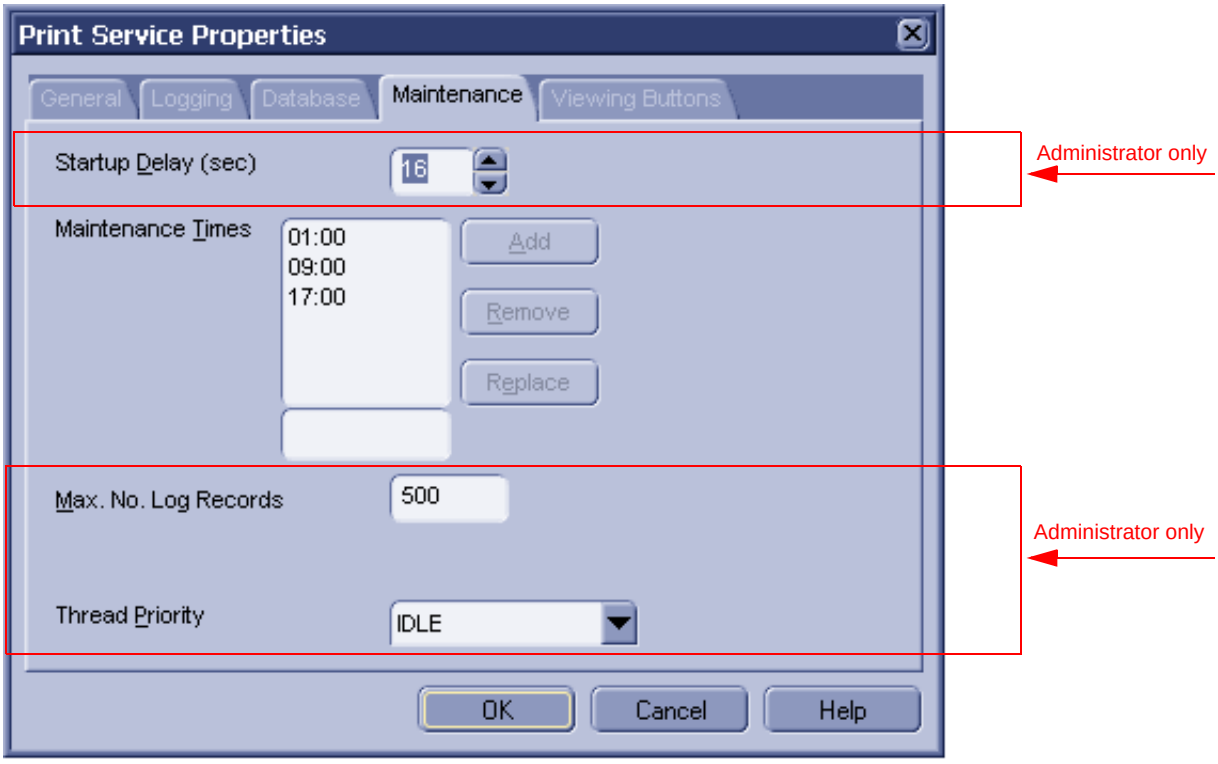


Figure 3-154 Print Service Properties - Maintenance (Default settings)

- **Startup Delay:** Specify the delay (in seconds) after start-up after which the first maintenance check will be performed.
- **Maintenance Times:** Specifies at which moments in time a maintenance check will be performed. These checks are done every day, and only if the system is up and running at that. (Default: 01:00, 09:00 and 17:00).
  - You can add a time by filling in the field beneath the list of Maintenance Times and clicking on the **Add** button.
  - You can delete a time by selecting the time in the Maintenance Times list and clicking the **Remove** button.
  - You replace one maintenance time with another by filling in the field beneath the list of Maintenance Times, selecting the time you want to replace and clicking the **Replace** button.
- **Max. No. Log Records:** The maximum permitted size of the job log. If the number of job log records exceeds this, the log will be truncated to the stated size by deleting the oldest jobs first.
- **Thread Priority:** Priority of the Maintenance thread within the service. Changing this setting may influence system performance.

3-5-9-5 Viewing Buttons

To select the layout types to be previewed on the Print tool tab:

1.) Select **Configuration** > **Print Service...** from the Data Selector menu.
2.) Select the Viewing Buttons tab from the Print Service Properties page.

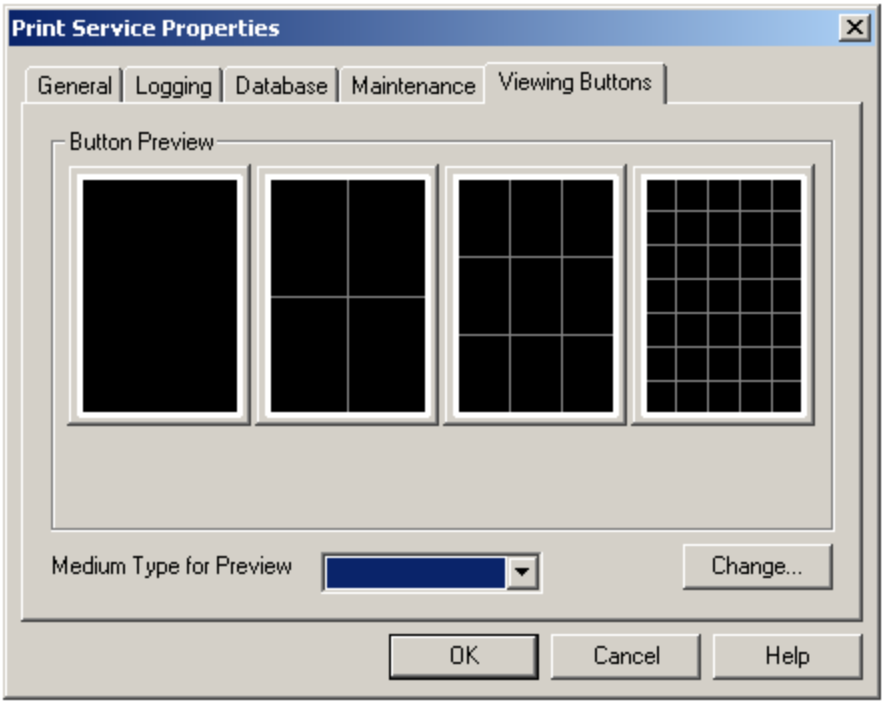


Figure 3-155 Print Layout Types

- **Button Preview:** A preview of the buttons that will appear on the Print tool tab in the Viewing Section.
- **Medium Type for Preview:** Select a medium size from the drop-down list of common sizes. LOGIQworks will use this size when creating the previews.
- Click on the **Change...** button to change the selection of layouts to be shown on the Print tool tab in the Viewing Section.

3-5-10 Connectivity (Application Level)

NOTE For Multivender Philips HD11 and Philips HD11 XE, 3D works for multiframes only if the field "Time Frame Vector" is disabled on the Philips scanner. For details refer to the Philips manual.

3-5-10-1 Setting up and configuring origins

When your system is connected to a network, any properly equipped DICOM compliant system connected to that network could query your system's database and even send studies. Access to your system can be restricted using "origins". When another system tries to communicate with your LOGIQworks, you can tell your system to only allow communication if this origin is one of a pre-configured set of permitted origins.

1.) From the Data Selector menu, select **Connection -> Origins...**

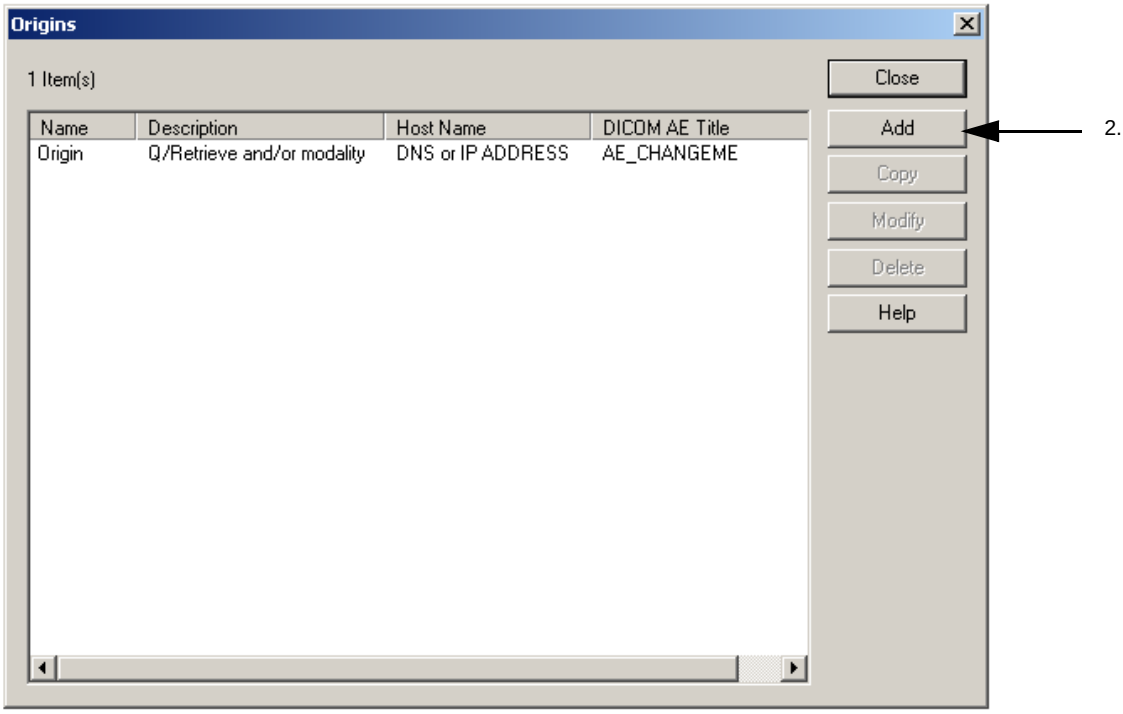


Figure 3-156 Configure Origins (Default)

2.) Press the Add Button, the Origin Properties page is displayed.

3-5-10-1 Setting up and configuring origins (cont'd)

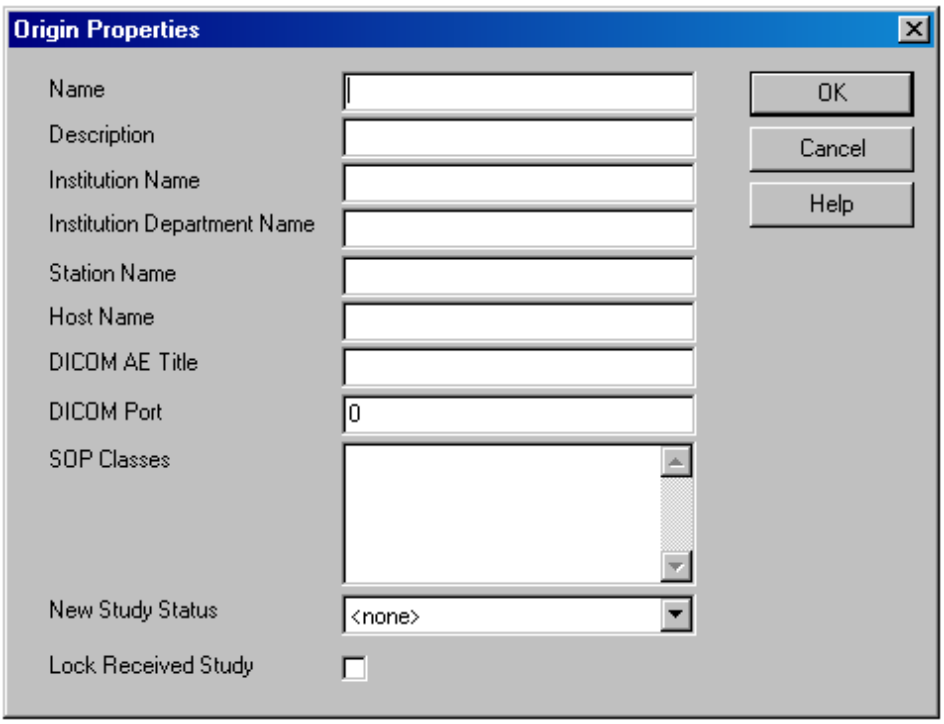


Figure 3-157 Origin Properties Page

3.) Enter the appropriate information in the dialog box (Name, Host Name or IP address, DICOM AE Title, DICOM Port Number are mandatory fields), any additional fields may help for troubleshooting.

4.) Click OK to add a new origin in the origins table. Please refer to Figure 3-158 for an example configuration.

3-5-10-1 Setting up and configuring origins (cont'd)

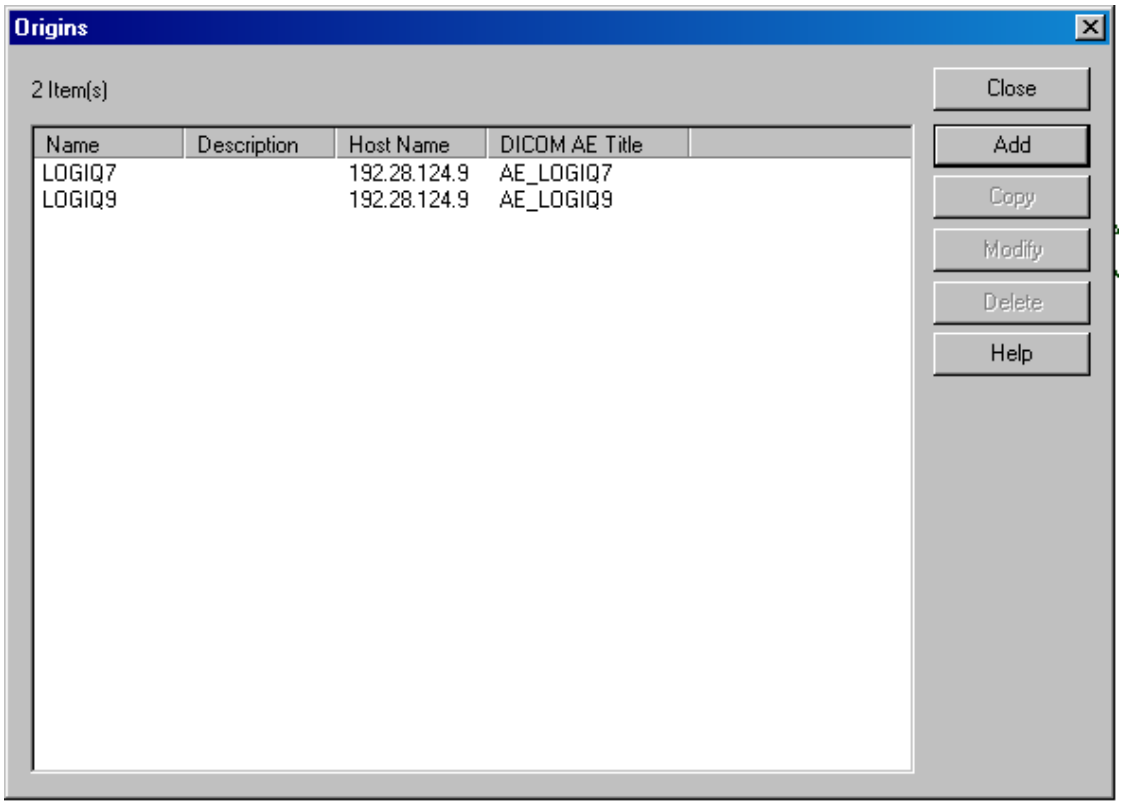


Figure 3-158 Configure Origins (Example)

Please refer also to RadWorks 6.1 Installation Guide, page 61 LOGIQworks up to Version 1.3 or to Radworks 7.0 Installation Guide for LOGIQworks Version 2.0 or 3.0.

3-5-10-2 Setting up and configuring destinations

To add a teleradiology destination

1.) Select **Connection -> Destinations...** from the menu bar in the Data Selector.
2.) In the Destinations dialog box, click Add. The Add Destinations dialog opens.

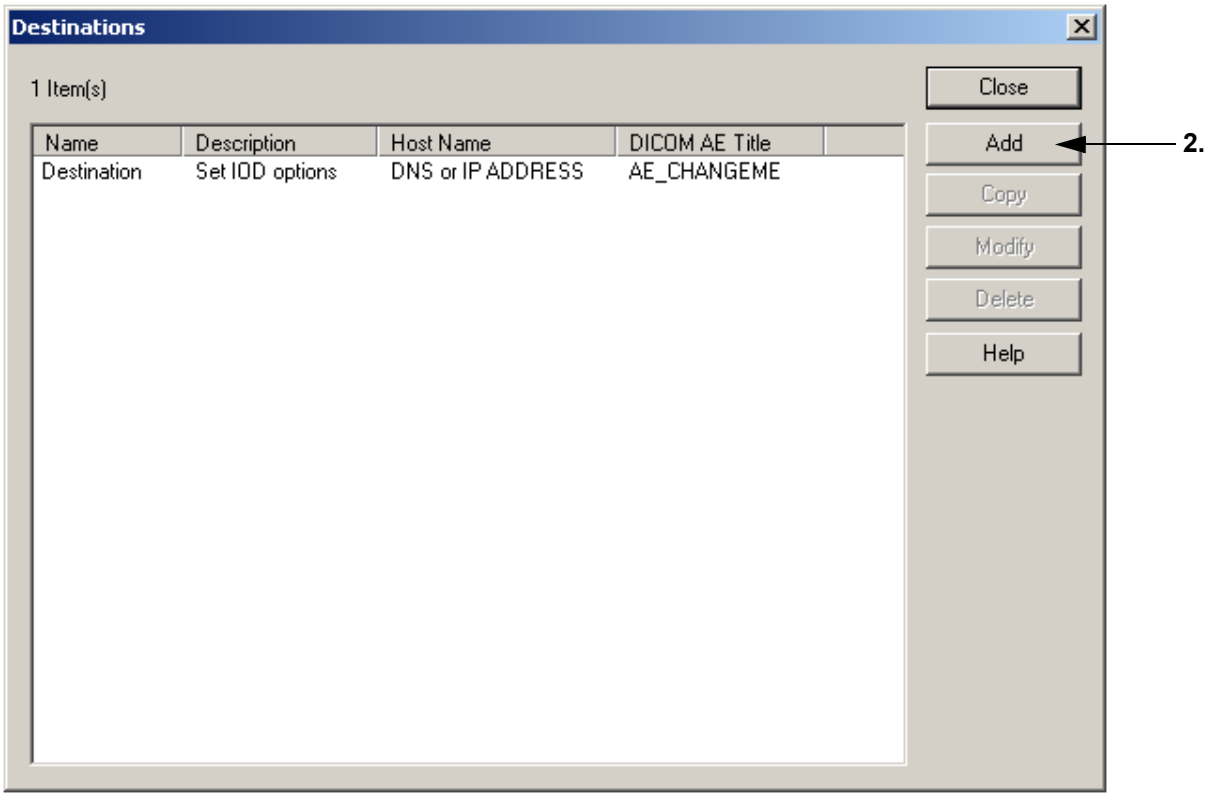


Figure 3-159 Configure Destinations - Default

3-5-10-2 Setting up and configuring destinations (cont'd)

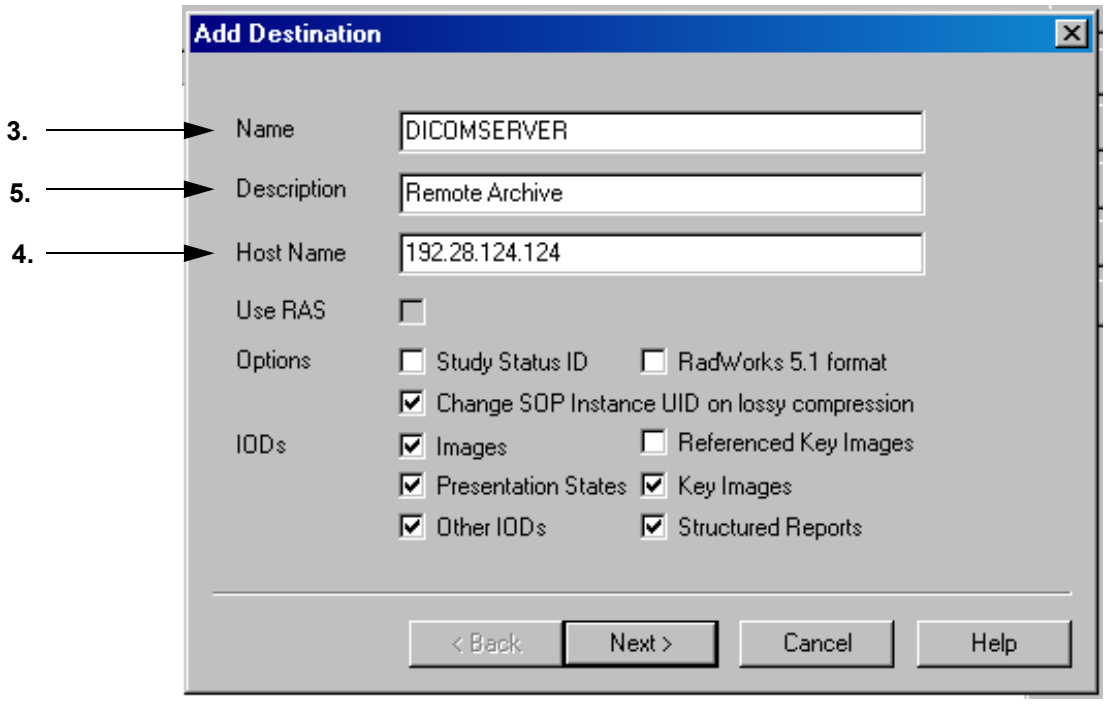


Figure 3-160 Teleradiology Destination - Add Destination

3.) Enter the name of the new destination. The name will be displayed in the list box on the Teleradiology Tool tab. The name field must be unique. The system will check this when you enter the name.

4.) Enter the host name (DNS name or IP address) of the new destination.

5.) Optionally, you can enter a description.

6.) For more detail on the options and IODs to select, please refer to the RadWorks 6.1 Installation Guide, page 57 for LOGIQworks up to Version 1.3 or Radworks 7.0 Installation Guide for LOGIQworks Version 2.0 or 3.0.

7.) Click Next.

3-5-10-2 Setting up and configuring destinations (cont'd)

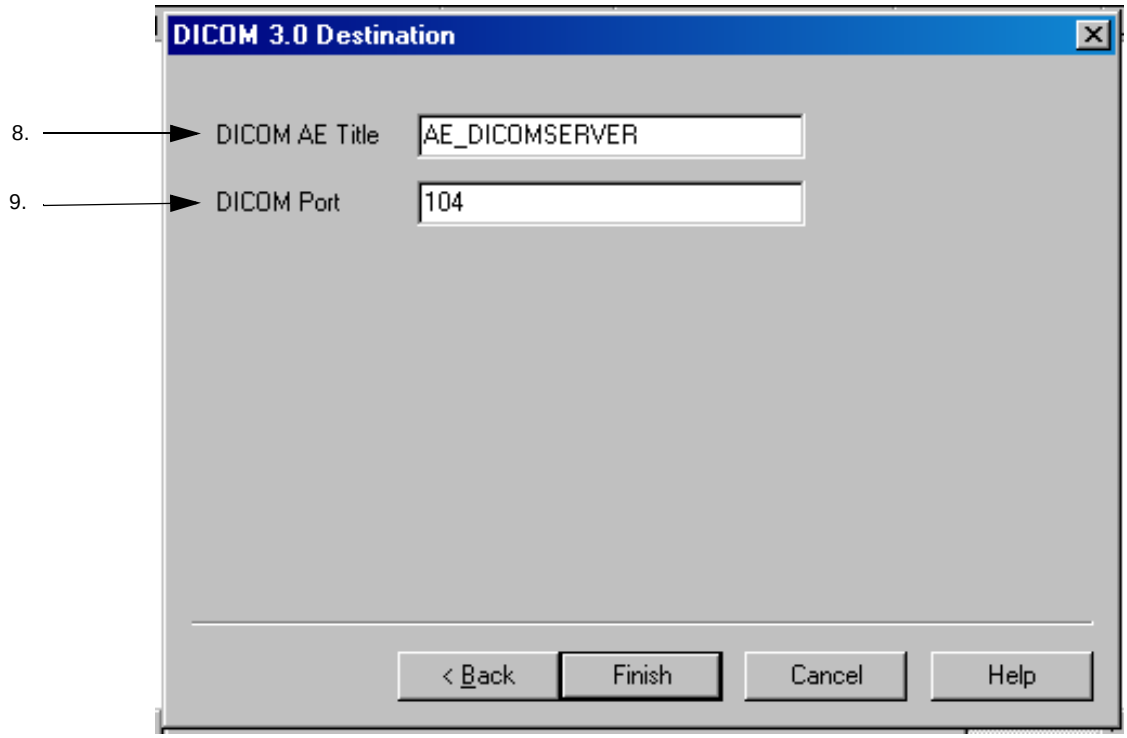


Figure 3-161 DICOM Destination

8.) Enter the DICOM AE Title for the remote system.
9.) Enter the DICOM Port Number for the remote system.

3-5-10-2 Setting up and configuring destinations (cont'd)

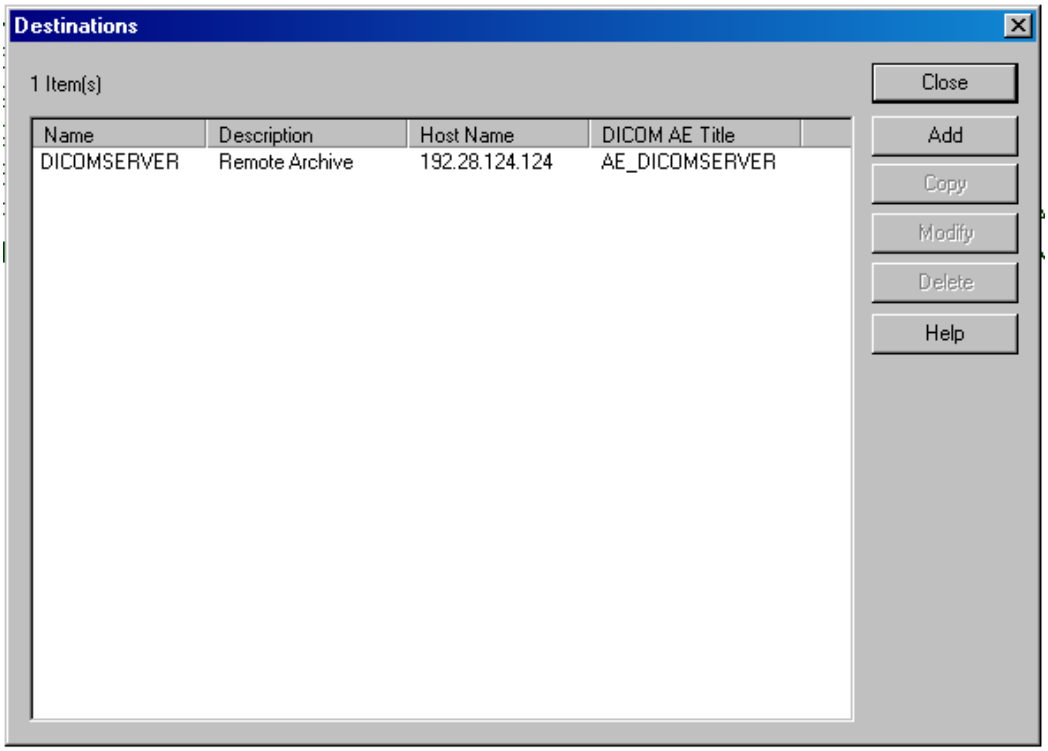


Figure 3-162 Configure Destinations - Result Example

To change an existing site:

1.) Select **Connection -> Destinations...** from the menu bar in the Data Selector.
2.) In the Destinations dialog box, select destinations (click in the first column) and then click **Modify**.
3.) Change any of the items in the Destination Properties dialog box (refer to the online help for details on the tabs and all parameters)

Connection Parameters: The Backup Destination is used to provide redundancy. Whenever sending studies to a destination fails, LOGIQworks will send the data to the backup. Please see RadWorks 6.1 Installation Guide, page 57, for LOGIQworks up to Version 1.3 or Radworks 7.0 Installation Guide for LOGIQworks Version 2.0 or 3.0.

3-5-10-3 Setting up auto-routing

LOGIQworks supports multiple auto transmit protocols. You can send to multiple destinations using a trigger mechanism with or without a set of rules and based on the origin of the study.

Only a user with administrator rights can configure the Auto Transmit Protocol. Other users will only be able to use and modify the Basic Protocol. End users will only be able to select one destination for auto transmissions, which will be triggered as soon as the system receives studies.

3-5-10-3-1 Setting up basic automatic routing

While you can create highly sophisticated auto transmission setups in LOGIQworks, for many users the facility of automatically forwarding incoming studies to another system will suffice. Setting up such basic automatic transmission is covered here. For details on setting up more sophisticated automatic transmission, see RadWorks 6.1 Installation Guide, page 70, Chapter 3 "Setting up advanced automatic transmission".

3-5-10-3 Setting up auto-routing (cont'd)

Even if no protocols have yet been added you will see the Basic Protocol. This is a simple autoroute protocol installed with LOGIQworks that allows you to set up basic auto routing on your system. You can modify the Basic Protocol but you cannot delete it.

1.) Select **Configuration -> Auto Routing...** from the menu bar in the Data Selector.

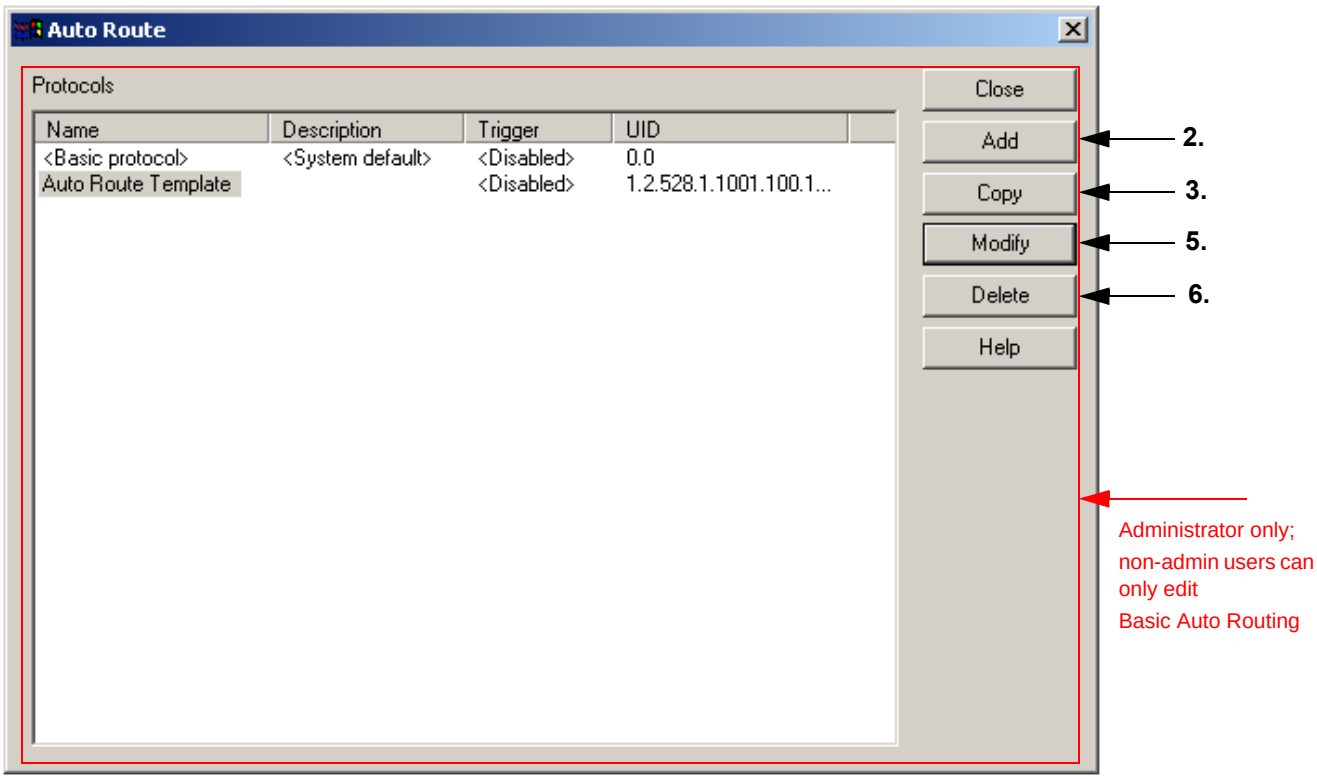


Figure 3-163 Configuring basic auto route protocols

2.) Click the **Add** button to add a new auto route protocol.

3.) To set up an auto route protocol similar to an existing one, click on the first (Name) column of the existing protocol to select it and click **Copy**.

4.) Then modify the newly created copy of the original protocol.

5.) To change an auto route protocol, click on the first (Name) column to select it and then on the **Modify** button.

6.) Select an auto route protocol and click **Delete** to remove it from your system.

To modify an existing basic protocol:

1.) Click **<basic protocol>**, (in the Name column) and then **Modify** in the Auto Route dialog box.

3-5-10-3 Setting up auto-routing (cont'd)

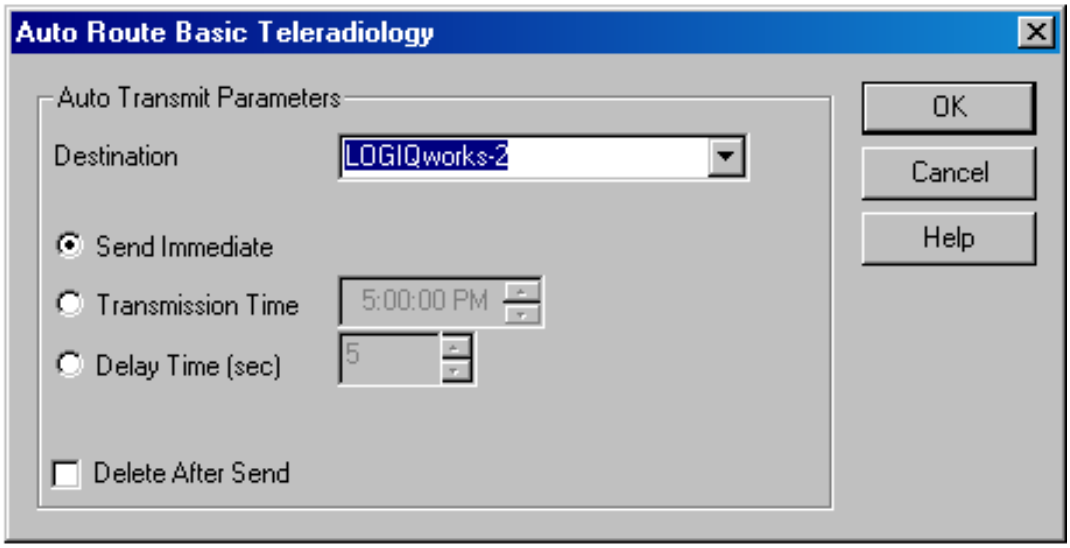


Figure 3-164 Basic Auto Route Parameters

2.) Select a destination from the drop-down list, in the Auto Route Basic Teleradiology box.

3.) Click **Send Immediate**, to forward incoming studies immediately to the destination. Click **Transmission Time**, if you want to specify a particular time that incoming studies should be sent, or **Delay Time** if you want to specify a delay before the studies are sent to the destination. Set the transmission time or delay time appropriately.

4.) Check the **Delete After Send** check box, to remove the study after it has been sent successfully.

If auto transmission has been set, this will be shown by the indicator in the Send section of the Teleradiology tool tab.

3-5-10-3-2 Turn off the automatic sending

1.) To turn off auto-routing, select **Configuration -> Auto Routing** from the menu bar in the Data Selector.

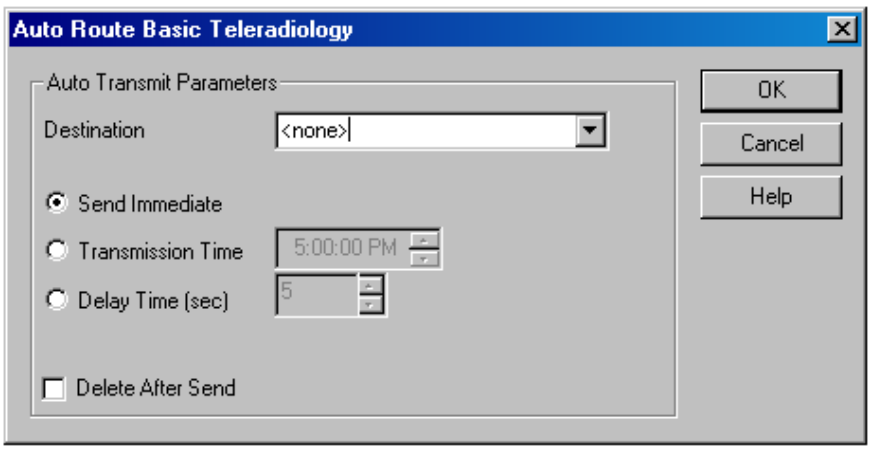


Figure 3-165 Auto Route - turned off

3-5-10-3 Setting up auto-routing (cont'd)

2.) In the Auto Route dialog box, click **<basic protocol>** (in the Name column) and then **Modify**. Select <none> from the Destination drop-down list in the Auto Route Basic Teleradiology dialog box. Please refer to Figure 3-165 for the basic auto route protocol being turned off.

3-5-11 CD-R/RW and DVD Setup

3-5-11-1 Reading DICOM volume from DVD or CD

Creating and configuring a DVD or CD worklist view.

To create a study or patient list:

1.) Select **Configuration** -> **Generic...** from the Data Selector menu bar and click on the HIS-RIS tab in the Generic Properties dialog box.

2.) Select **Default HIS/RIS Implementation** in the Implementations section and then click on the Config... button.

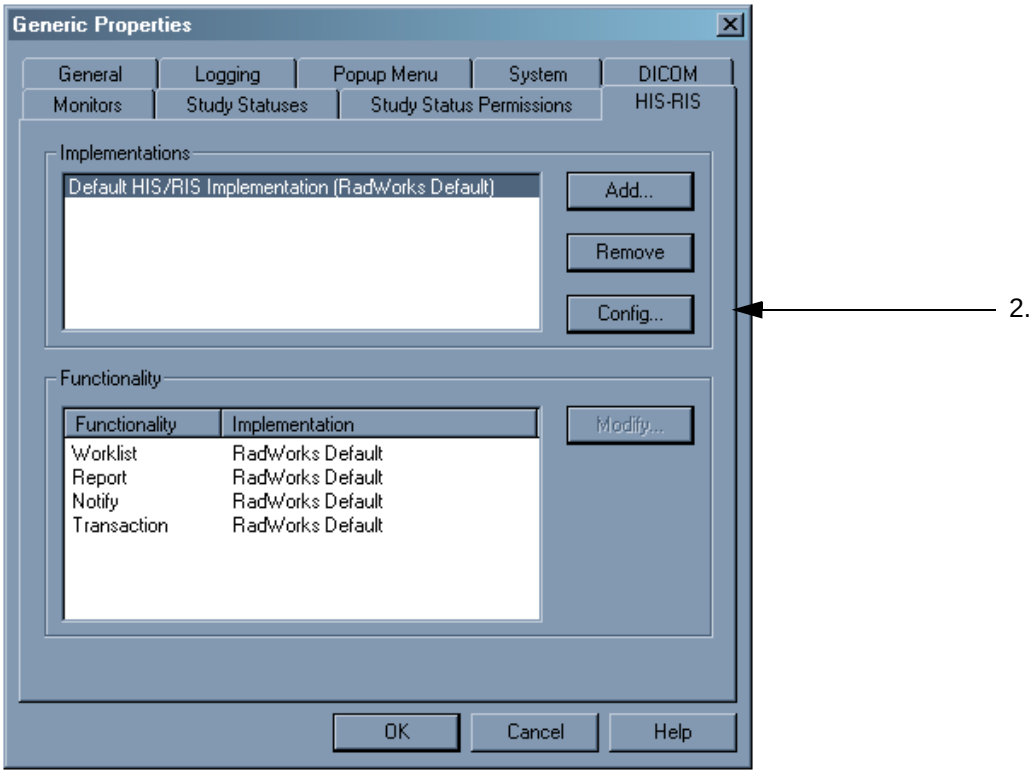


Figure 3-166 Generic Properties - HIS-RIS for LOGIQworks up to Version 1.3

3-5-11-1 Reading DICOM volume from DVD or CD (cont'd)

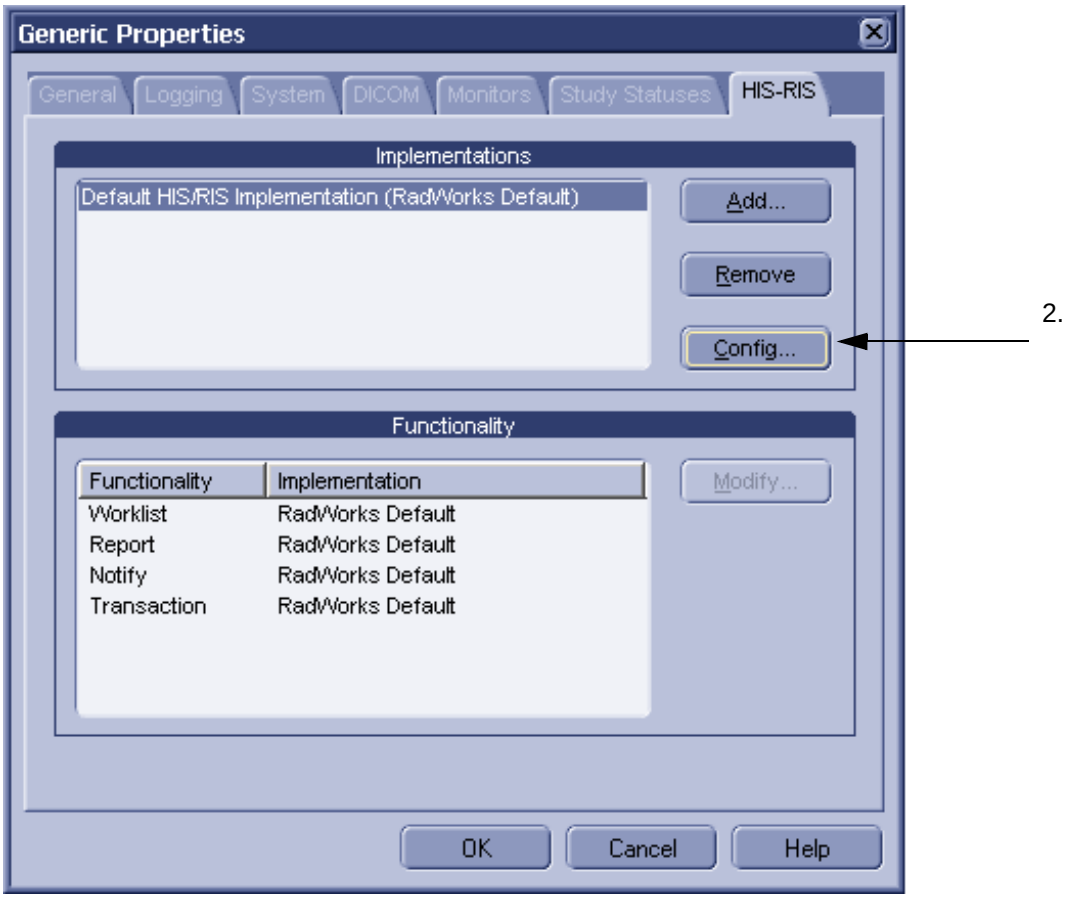


Figure 3-167 Generic Properties - HIS-RIS for LOGIQworks Version 2.0 and 3.0

3.) Select the Study/Patient list tab of the **Configure RadWorks Default HIS/RIS Implementation** dialog box. Click the Add button to add an additional list.

3-5-11-1 Reading DICOM volume from DVD or CD (cont'd)

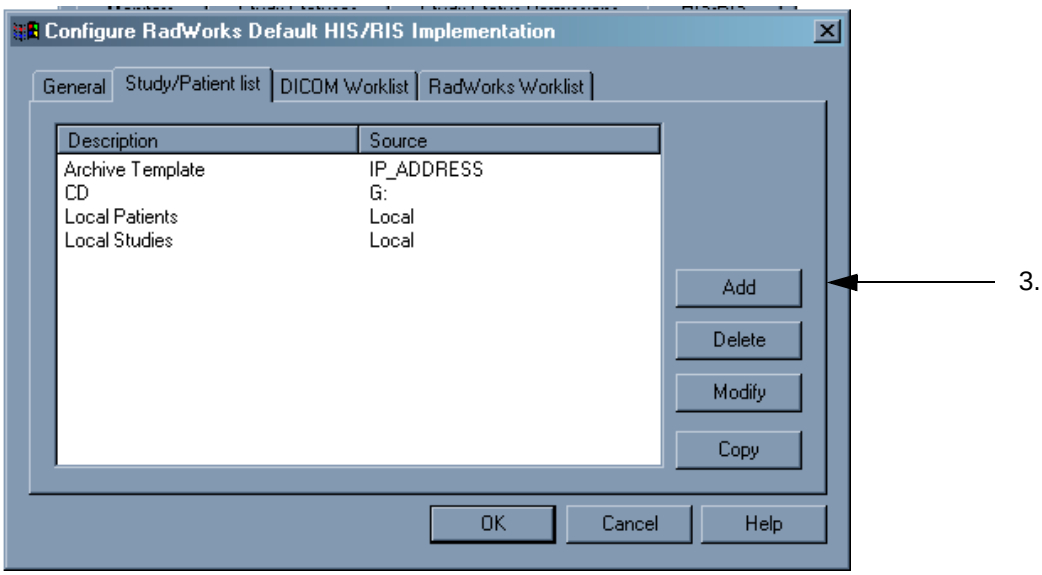


Figure 3-168 Generic Properties - Add Study/Patient List for LOGIQworks up to Version 1.3

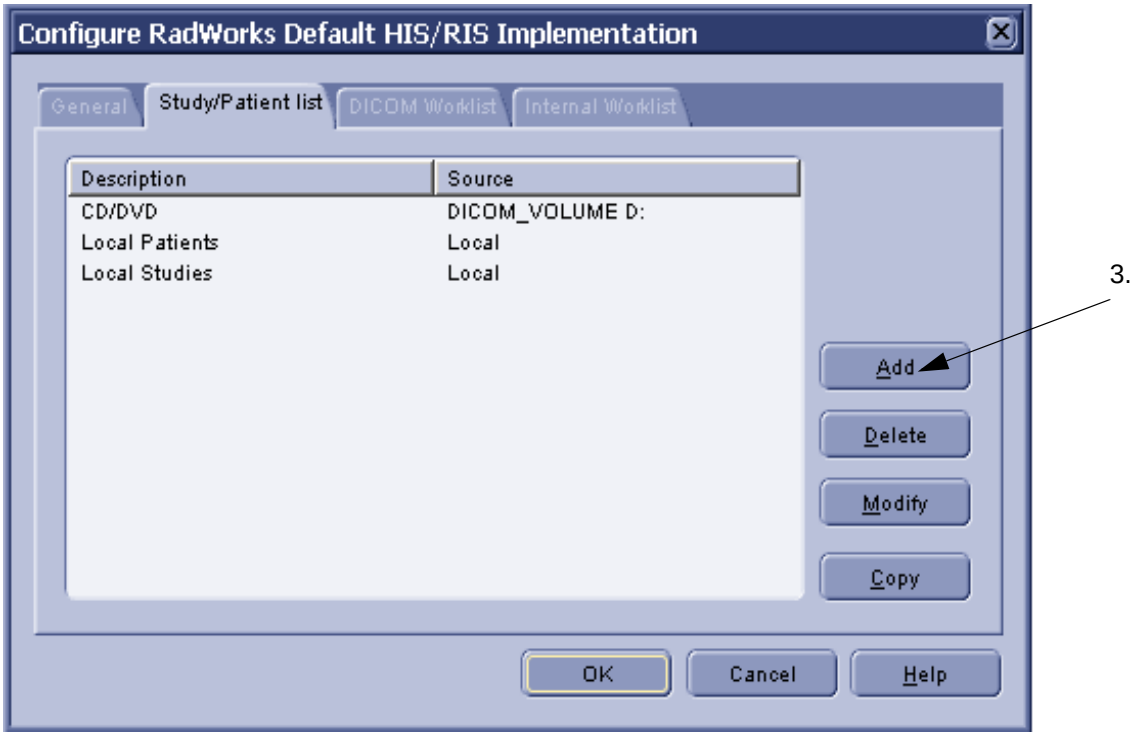


Figure 3-169 Generic Properties - Add Study/Patient List for LOGIQworks Version 2.0 or 3.0

3-5-11-1 Reading DICOM volume from DVD or CD (cont'd)

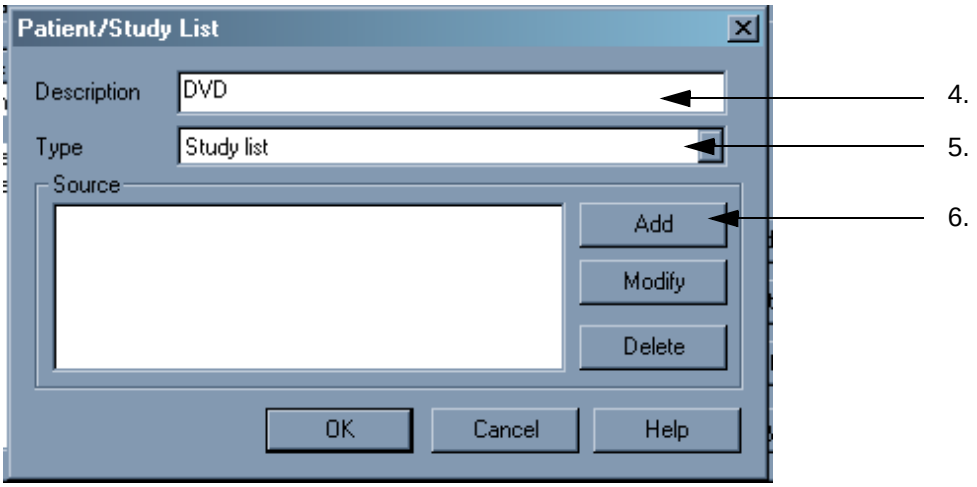


Figure 3-170 Study/Patient List

4.) In the Patient/Study List dialog box type in a Description of the Patient or Study list you want to create. E.g. DVD DICOM volume or CD DICOM volume.

5.) Select from the Type drop-down list the type of list you want to create: Study or Patient.

6.) Click the Add button.

7.) In the Source dialog box select the source you want to use for the Patient or Study worklist you want to define. Select DICOM Volume to use a single medium archive such as a DVD or CD. Then type in the drive of the Device containing the images you want to import into your RadWorks worklist.

3-5-11-1 Reading DICOM volume from DVD or CD (cont'd)

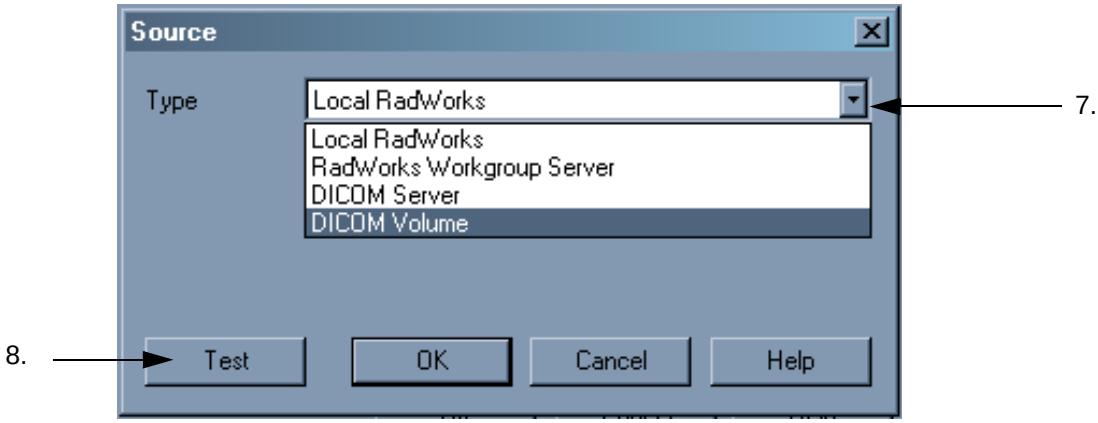


Figure 3-171 Source Dialog Box

8.) Click the Test button to see whether your connection will work. If you get a message stating that the connection has failed, go back and correct any mistakes you have made. Otherwise, click OK until you reach the Data Selector again.

NOTE *The test requires a DICOM volume to be in the drive.*

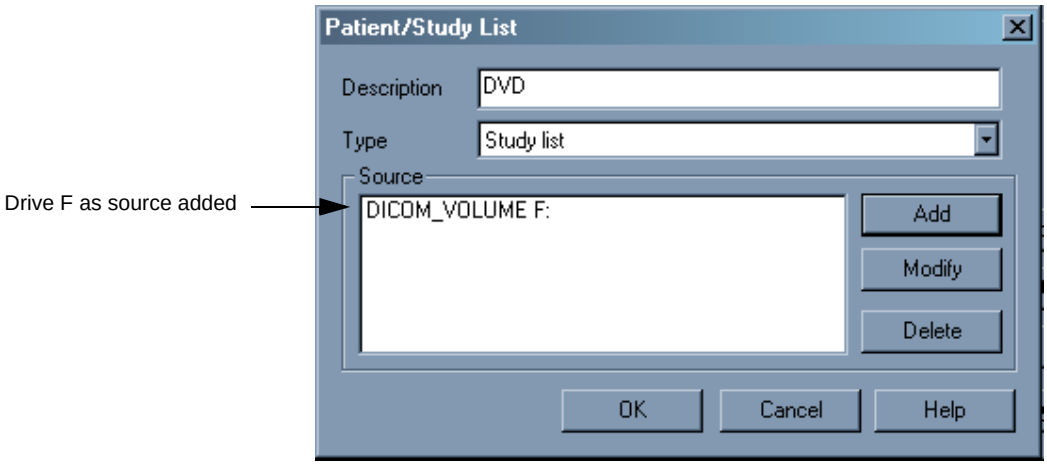


Figure 3-172 Patient/Study List

9.) Exit the application and start it up again.

Displaying data from your DVD or CD media

To view studies from a single medium archive in a worklist view:

3-5-11-1 Reading DICOM volume from DVD or CD (cont'd)

1.) In the Data Selector, select **Database** -> **Add view** from the menu bar.

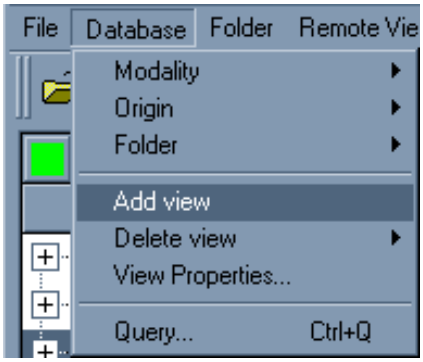


Figure 3-173 Database - Add View (1)

2.) In the Add View dialog, specify the Description field by typing in a description for your new study list. E.g. DVD or CD.

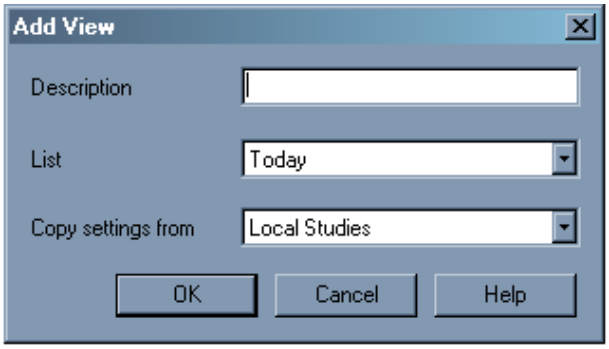


Figure 3-174 Database - Add View (2)

3.) Select from the List drop-down list the new worklist you created, e.g. DVD DICOM volume or CD DICOM volume.

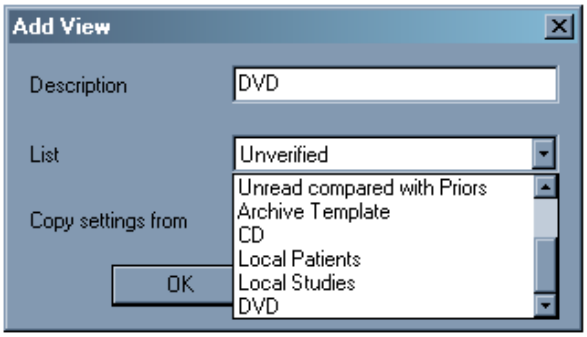


Figure 3-175 Database - Add View (3)

3-5-11-1 Reading DICOM volume from DVD or CD (cont'd)

4.) Use the copy settings from drop-down list to indicate the list whose settings should apply to the one you created. (Default: Local Studies)

5.) Click ok and view the worklist by selecting it from the Worklist View drop-down list on the Data Selector tab.

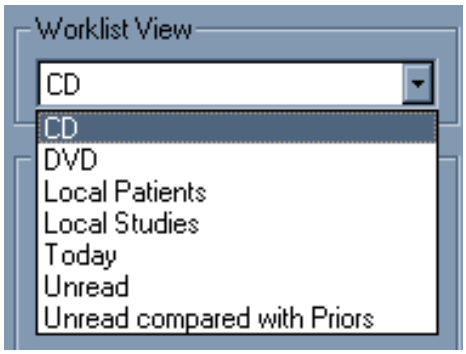


Figure 3-176 Data Selector Tab - Worklist View

6.) Double-click the study to view it. Note that you can only view the study if the Direct View check box on the General tab of the Viewing Properties dialog box is checked (please refer to Section 3-5-2-12 "Viewing Properties" on page 3-99).

7.) If you want to import the study, select it, right-click it and then left-click Import from the shortcut menu. LOGIQworks will return the file to the worklist view where it came from.

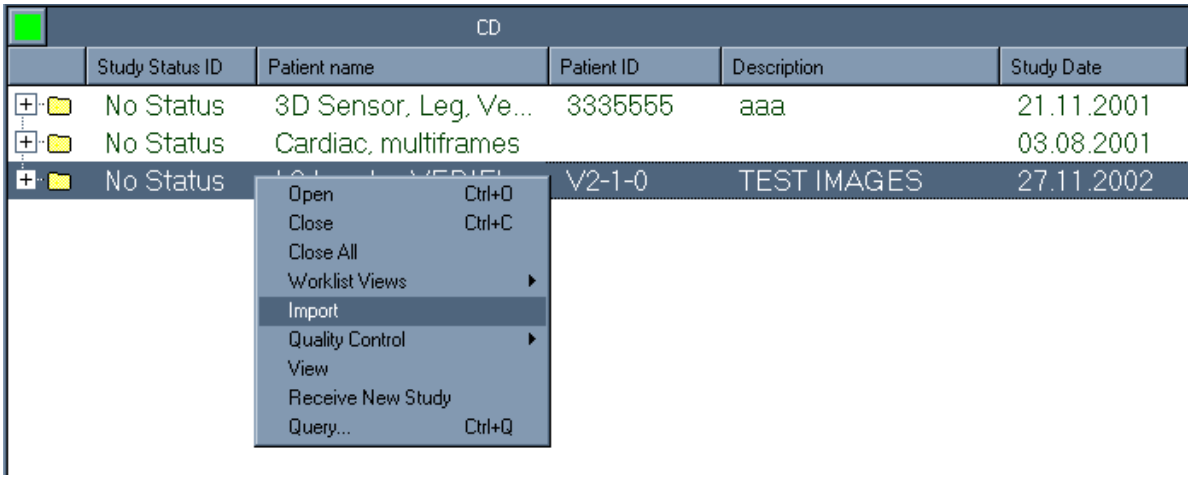


Figure 3-177 Import Study

3-5-11-2 Writing a DICOM volume to DVD or CD-R/RW (SME)

The system must be licensed for use with Single Media Exchange (SME) option in order to be able to write data to CD-R/RW and/or DVD. In addition the system needs to be equipped with the HP DVD Writer for writing data to DVD.

It is recommended to add a new column to the Data Selector for the Single Media Exchange option (SME). To do so, right click on the column heading to the right of where you want to insert the new column and select Insert column.

3-5-11-2 Writing a DICOM volume to DVD or CD-R/RW (SME) (cont'd)

WARNING

After writing a CD/DVD, eject the media to finalize the session and read the media. Before you don't eject the media once and insert it again, you won't be able to read the CD/DVD e.g. in the Windows Explorer.

3-5-11-3 Writing a DICOM volume to DVD or CD-R/RW

1.) Select **Configuration** -> **Single Media Exchange** from the Data Selector menu bar. In the Configure Single Media Archiving dialog box select Read-Only from the Media Type drop-down list.

2.) Select in the "File System" field the CD or DVD item

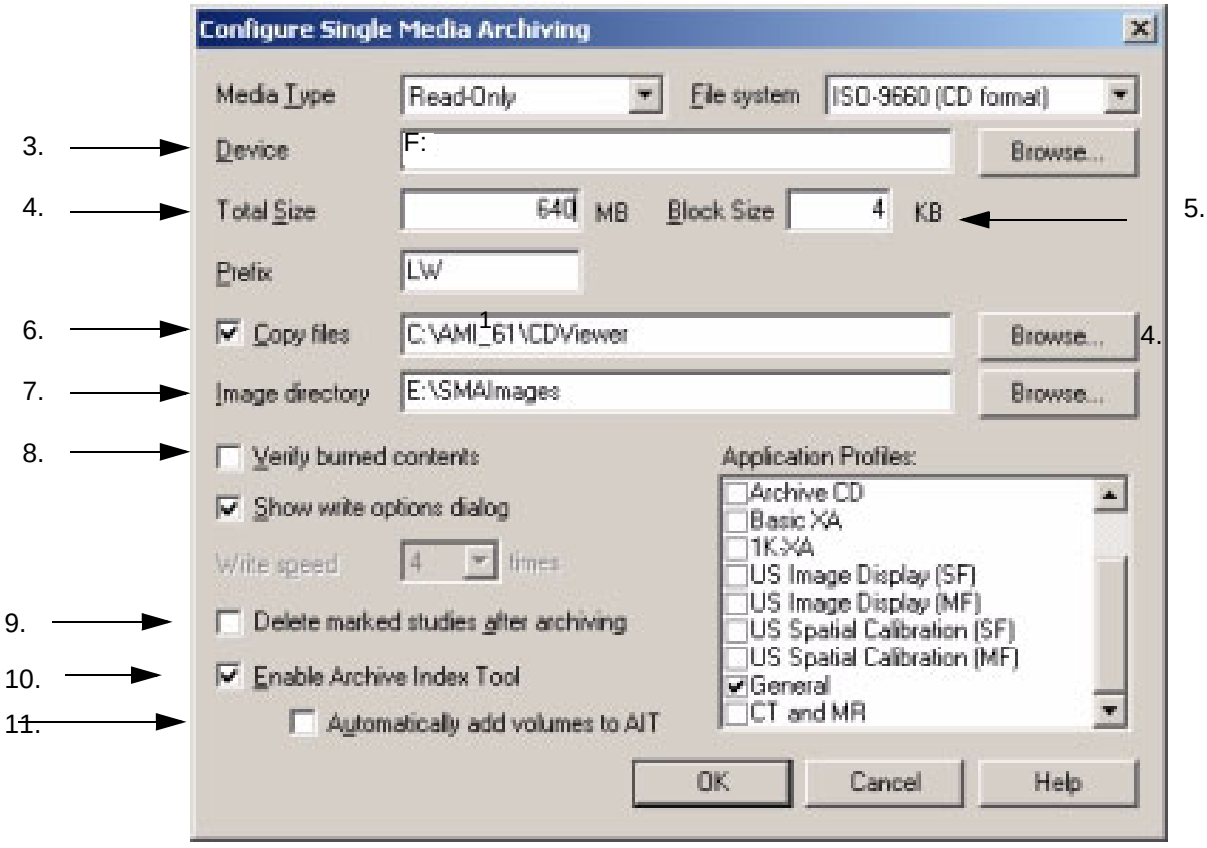


Figure 3-178 Configure Single Media Archiving (Read only)

3.) Enter in the "Device" field, the drive of the device to which you are copying data to or from, or click the "Browse..." button.

4.) Specify in the "Total Size" field the storage limit of the medium you are using. For CD this is 640 or 700 MB; for DVD 4.7 GB.

5.) In the "Block Size" field, define the size of the blocks you want for your read-only medium. The recommended setting is 4.

6.) Check the "Copy files" check box, to indicate that you want to copy additional items to your read-only medium. Then enter the path from where you want to copy those items (or use the Browse... button). An example of such an item might be the CD Viewer. Note that you copy the contents of entire folders, not individual files.

3-5-11-2 Writing a DICOM volume to DVD or CD-R/RW (SME) (cont'd)

7.) In the "Image directory" field, type in the path and directory on your hard disk where you want LOGIQworks to temporarily store images before burning them to CD or DVD. You can also use the Browse... button to navigate to this location.

8.) Check the "Verify burned contents" check box, if you want a message stating that your data has been copied to the CD.

9.) Check the "Delete marked studies after archiving" check box, if you want the study deleted after it has been copied, and then click OK. Note that this option will only be performed after data from the local database is archived, not with archiving data you selected.

10.) Check the "Enable Archive Index Tool" check box if you are planning to use the Archive Index Tool to index the data placed on the CD or DVD.

11.) Check the "Automatically add volumes to AIT" Tool if you want to immediately add to the Archive Index the volume to which you want to save data.

12.) Click OK to complete the configuration.

3-5-12 Optional Peripherals/Peripheral Connections

3-5-12-1 Network Printer (Option)- Connections and Configurations

Refer to RadWorks 6.1 Installation Guide, page 140, for further details on DICOM, Windows and File Printer configuration.

3-5-13 Software Option Configuration

3-5-13-1 Available Software options for LOGIQworks up to Version 1.3

The following software options are available for LOGIQworks.

- Single Media Exchange Part Number H49021LE.
- DICOM Print Part Number H49021LF.
- Quality Control Module Part Number H49021LG.

3-5-13-2 Available Software options for LOGIQworks Version 2.0 and 3.0

The following software options are available for LOGIQworks.

- Single Media Exchange Part Number H49021BC.
- DICOM Print Part Number H49021BD.
- Quality Control Module Part Number H49021BE.

3-5-13-3 Software Option Installation

3-5-13-3-1 License Configuration

1.) Run the License Configuration tool RunLCfg.exe from the C:\AMI_61\Bin directory.

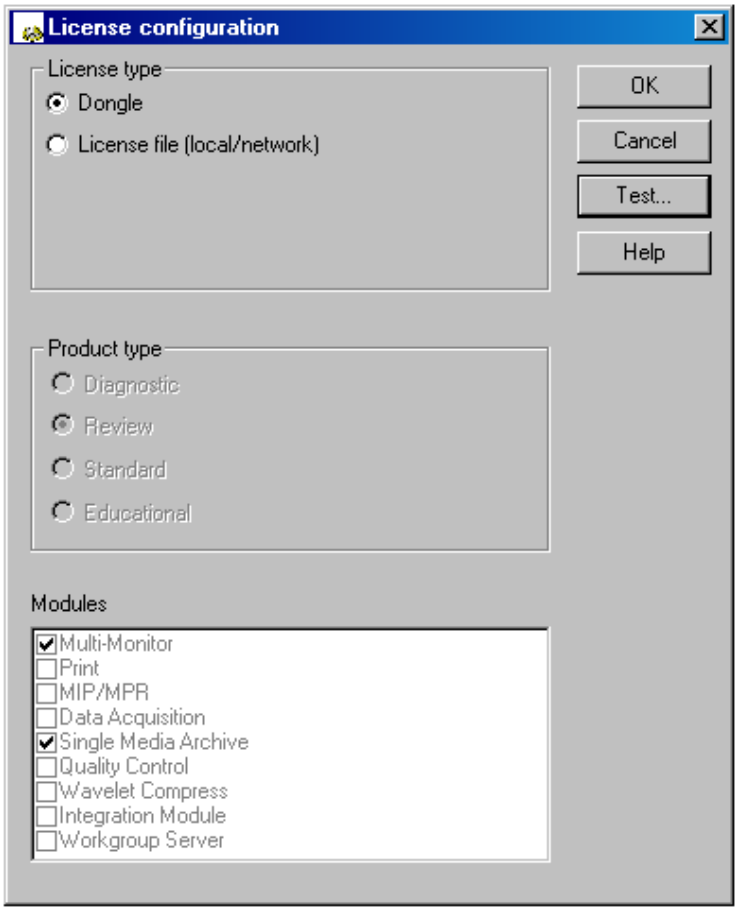


Figure 3-179 License Configuration

2.) Select License type “License File”.

3-5-13-3 Software Option Installation (cont'd)

3.) Press the Test Button to run the License Configuration test.

4.) The test results will be displayed, listing all tested components with Licensed or Not Licensed flag.

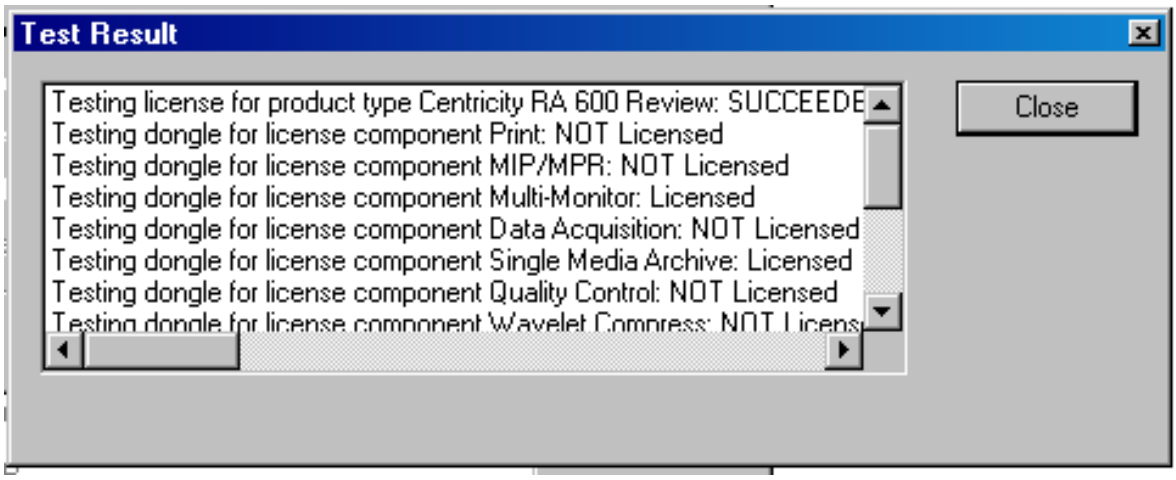


Figure 3-180 License Test - Result

Section 3-6
Software Upgrades

To configure new software options for RA600 please see Software Option Configuration on page 3-203.

For software upgrades of the LOGIQworksturnkey system please see the Update Installation Manual.

Section 3-7
Disable RAW data image transfer for Le

For Le only DICOM only images are supported, RAW data image transfer have to be disabled by the user.

DICOM Image Storage allows the system to send or receive ultrasound images in a format that can be interpreted by LOGIQworks. For compatibility between LOGIQworks and Le, RAW data have to be turn off.

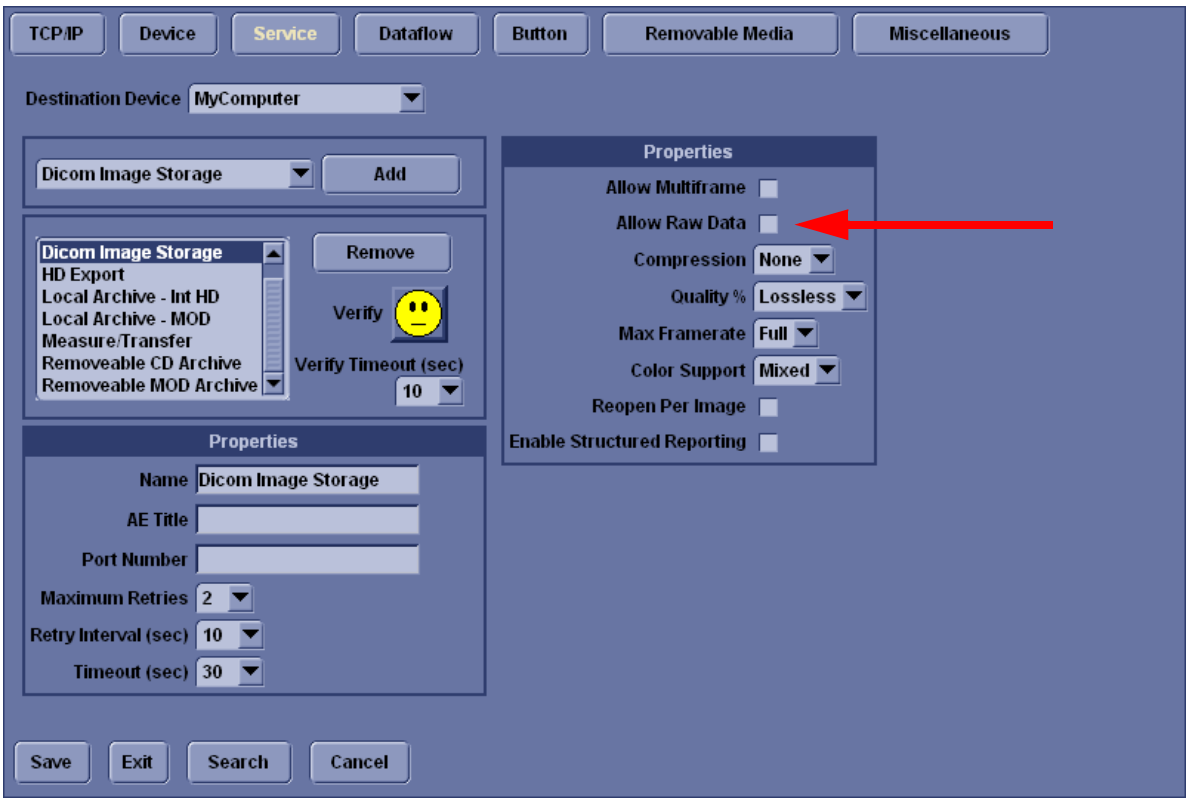


Figure 3-181 DICOM Image Storage Service

While setting up the connectivity for LOGIQworks, make sure that the 'Allow Raw Data' checkbox is NOT checked. This disables the RAW data image transfer. For detailed description, please also refer to the LOGIQ e Basic User Manual, Direction 5118586-100 Rev.2, page 16-71.

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Chapter 4
Functional Checks

Section 4-1
Overview

4-1-1 Purpose of Chapter 4

The purpose of this section is to provide quick procedures to check the major Hardware & Software functions of the LOGIQworks.

Table 4-1 Contents in Chapter 4

Section 4-2
Required Equipment

Table 4-2 Required Equipment

Equipment	Required for Chapter
Patient records loaded on the system containing at least one DICOM series with ultrasound raw data cine loops for each of the following modes: 2D, M-Mode, 2D Color, M-Mode Color and Doppler Mode as well as 3D data set with position information (Tru3D) and a sensor less data set.	4-3-2-3 4-3-2-2
A CD with patient records containing at least one DICOM series with ultrasound raw data cine loops for each of the following modes: 2D, M-Mode, 2D Color, M-Mode Color and Doppler Mode as well as 3D data set with position information (Tru3D) and a sensor less data set.	4-3-7-1
An empty CD-R/RW to copy DICOM data to.	4-3-8
To write data to CD or DVD the system needs Single Media Exchange option enabled.	4-3-7-2

Section 4-3
System Check

Table 4-3 Hardware & Software Function Check

Step	Task	See Chapter	Check (✓)
1	Boot the system and log on as lwuser	see Section 3-4-4 on page 3-60	
2	Check reading from CD-R/RW	see Section 4-3-8 on page 4-23	
3	Check modem	see Section 4-3-6 on page 4-21	
4	Check system time	see 3-5-1-1 on page 3-68	
5	Check units	see 3-5-1-2 on page 3-70	
6	Check monitor setup	see 3-5-1-3 on page 3-71 and 3-5-2-7 on page 3-88	
7	Check network configuration	see 3-5-1-4 on page 3-76	
8	Check the DICOM connection	see 4-3-1-1 on page 4-3	
9	Check the Ethernet connection to remote DICOM devices	see 4-3-1-2 on page 4-7	
10	Check LOGIQworks services	see Section 4-4 on page 4-26	
11	Check that all ordered software options are available.	see 3-5-13-3 on page 3-203	
12	Check the Program start up and the Data Selector	see 4-3-2-1 on page 4-8	
13	Check generic DICOM settings	see 3-5-2-6 on page 3-87	
14	Check LOGIQworks connectivity settings: Receiving devices (destinations)	see 3-5-10-2 on page 3-186	
15	Check LOGIQworks connectivity settings: Sending devices (origins)	see 3-5-10-1 on page 3-183	
16	Check images can be sent to a configured destination device	see 4-3-2-3 on page 4-10	
17	Check images can be displayed in the viewing section	see 4-3-2-2 on page 4-9	

4-3-1 Windows Level Check

4-3-1-1 Check the DICOM Connection

Receiving DICOM images requires preparation of both the receiving and the sending site.

Condition: The LOGIQworks system needs to be connected to the network. See Section 2-3-4 on page 2-14.

Testing the DICOM association:

We recommend testing the association to all devices listed in the destinations and origins table (please refer to Section 3-5-10-1 "Setting up and configuring origins" on page 3-183 and Section 3-5-10-2 "Setting up and configuring destinations" on page 3-186) to ensure that the remote system and LOGIQworks have been correctly configured. There is a utility to test the DICOM association: DCMPing, which can be found in: C:\AMI_61\Bin for LOGIQworks up to 1.3 systems and in directory C:\Program Files\Centricity\RA600\7.0\Bin for LOGIQworks 2.0 and LOGIQworks 3.0.

4-3-1-1 Check the DICOM Connection (cont'd)

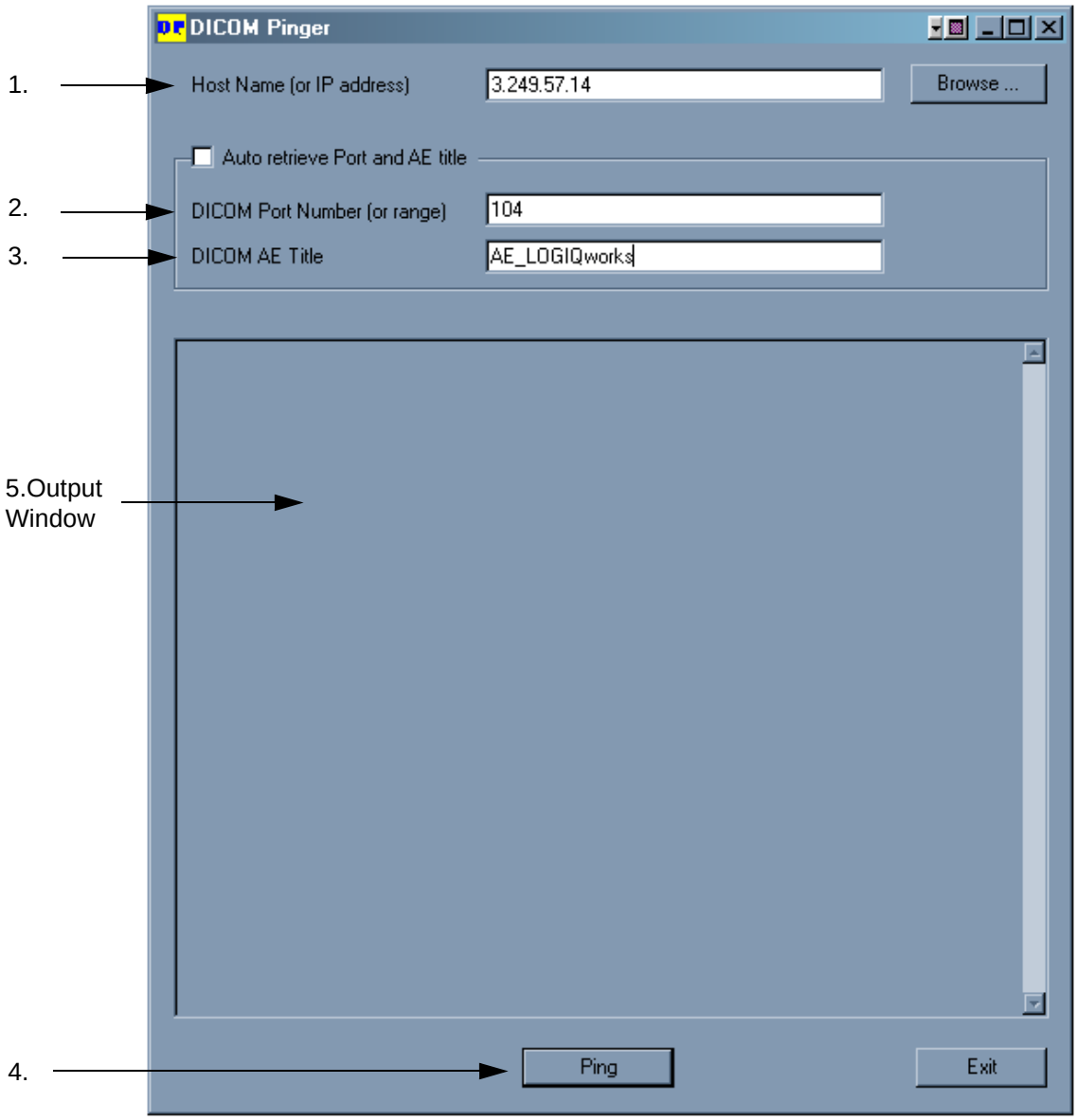


Figure 4-1 DICOM Pinger

1.) Enter the Host name or IP address of the system the association shall be tested with.
2.) Enter the DICOM port number of the remote system.
3.) Enter the DICOM Application Entity Title of the remote system.
4.) Then press the PING-button.

4-3-1-1 Check the DICOM Connection (cont'd)

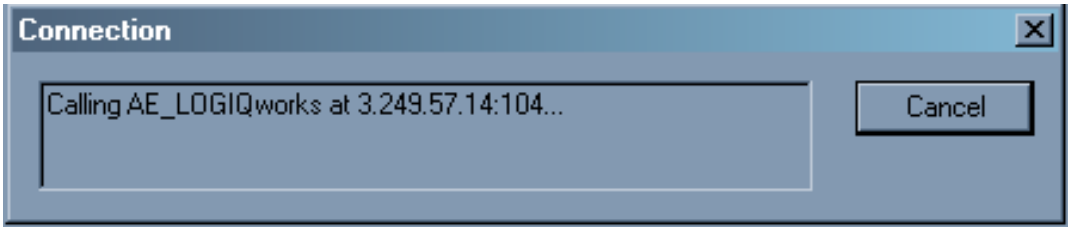


Figure 4-2 Calling Remote Device

5.) The results will be listed in the output window.

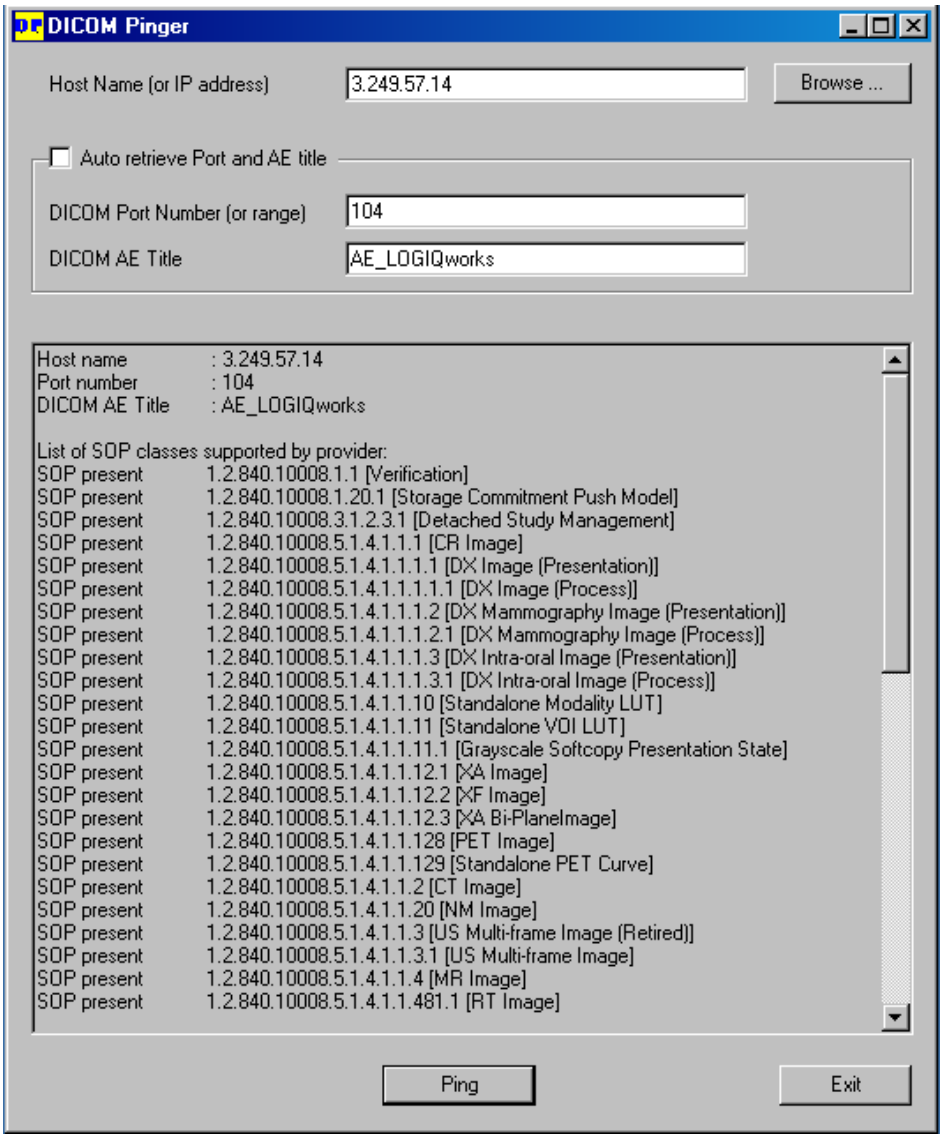


Figure 4-3 Successful DICOM communication

4-3-1-1 Check the DICOM Connection (cont'd)

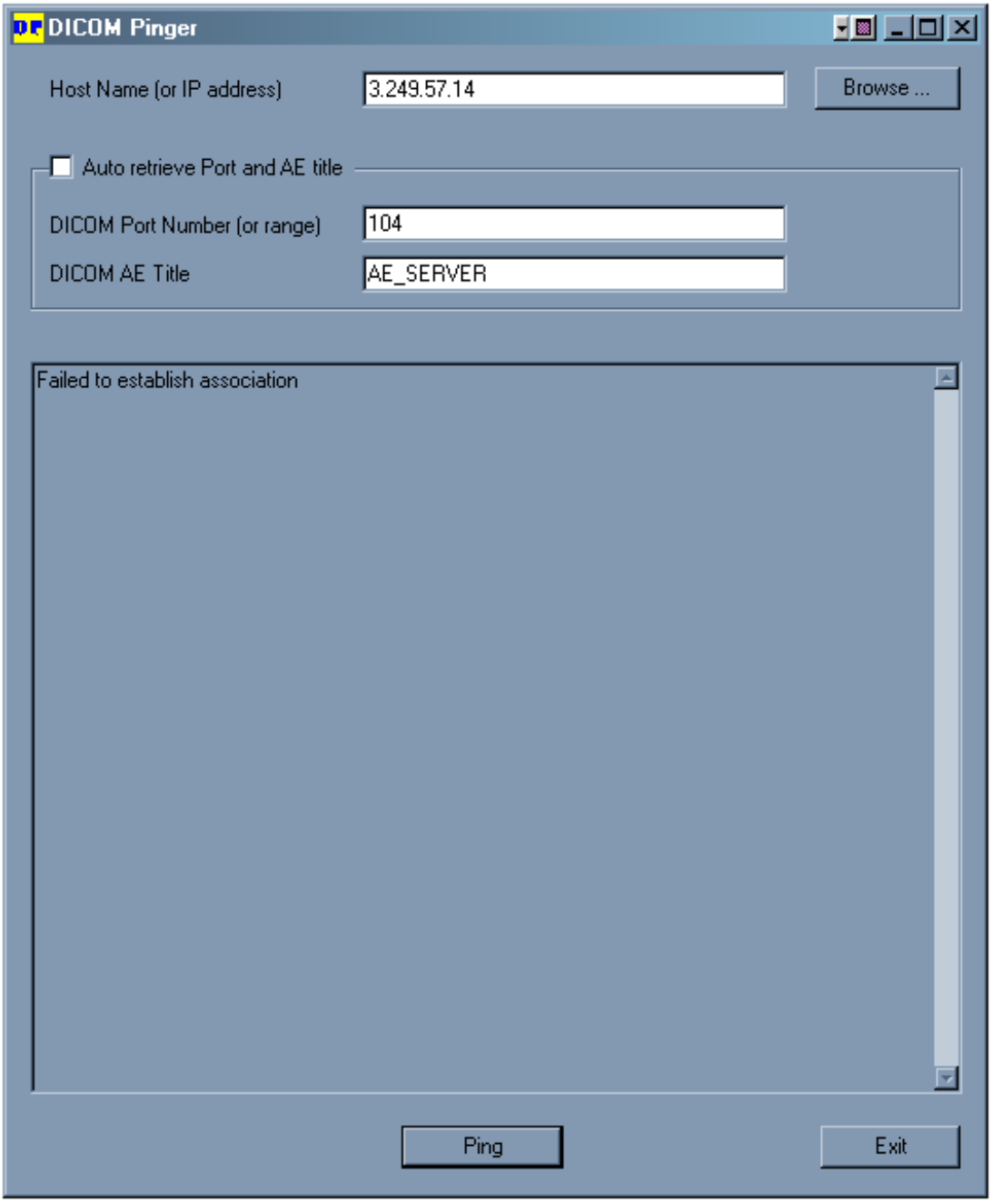


Figure 4-4 DICOM Ping failure

If the DCM Ping fails please go to 4-3-1-2 on page 4-7 for further trouble shooting.

4-3-1-2 Check Ethernet Connection

Check Ethernet connection (only needed if DCM Ping - see Section 4-3-1-1 "Check the DICOM Connection" - fails).

Condition: The LOGIQworks system needs to be connected to the network. See Section 2-3-4 on page 2-14 for details.

Check the status of the Ethernet connection to the devices your LOGIQworks system is set up to communicate with. Please look up all sending and receiving devices in the connections destination and origins list from the data selector menu. Refer to 3-5-10-1 on page 3-183 and 3-5-10-2 on page 3-186 for detailed information on how to set up sending and receiving devices in LOGIQworks.

Run the network ping command to perform this verification:

1.) Click on **Start** > **Programs** > **Accessories** > **Command Prompt**. A command window will open.
2.) Execute the ping command for every IP address listed in the destinations and origins database (3-5-10-1 on page 3-183 and 3-5-10-2 on page 3-186).

Example:

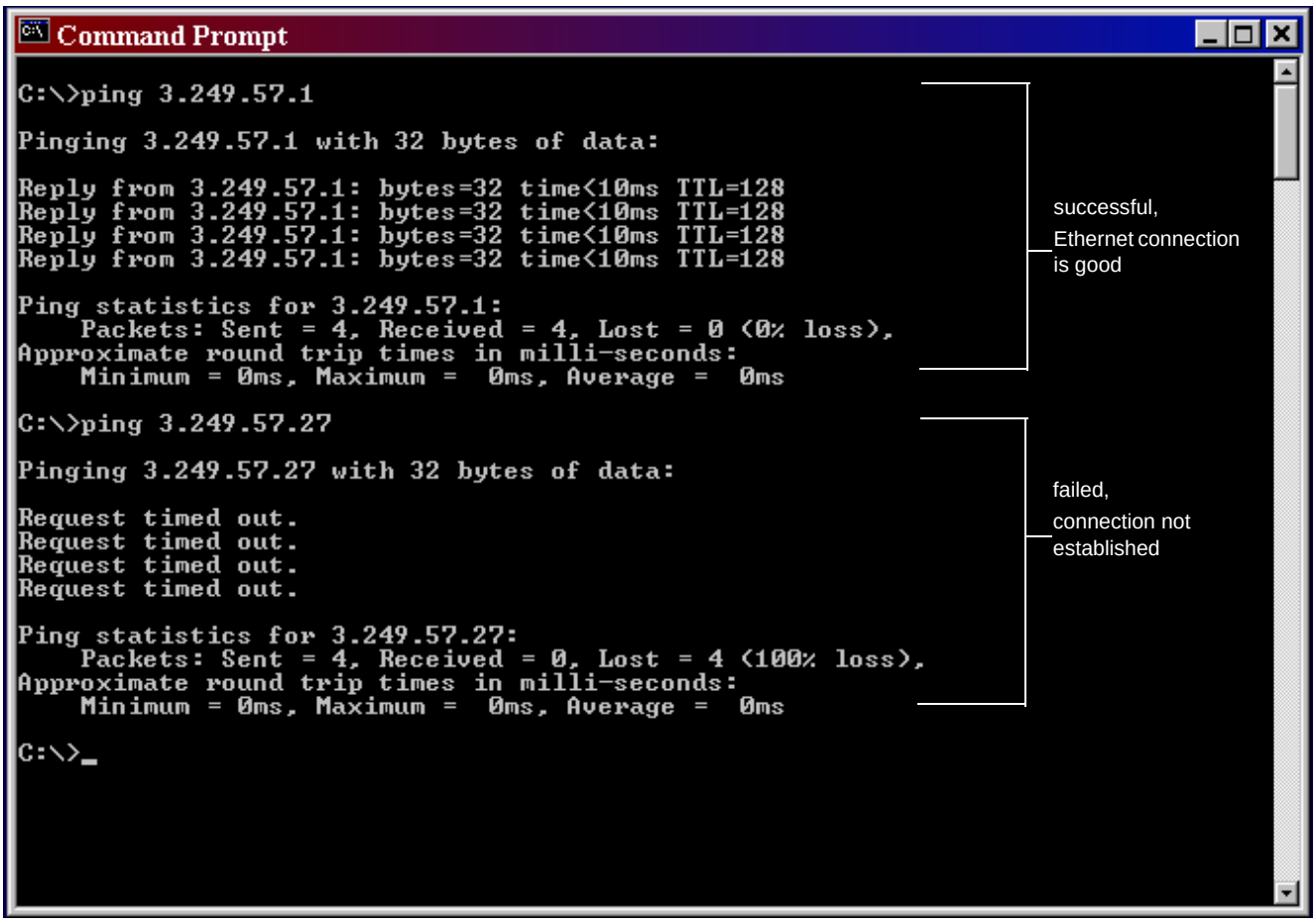


Figure 4-5 Ethernet Connection Check

4-3-2 Application Level Check

4-3-2-1 Check the Program start up and the Data Selector

If not already started automatically during system start up, go to the desktop and double-click the

LOGIQworks icon 

When the application is up and running the initial view should be the following:

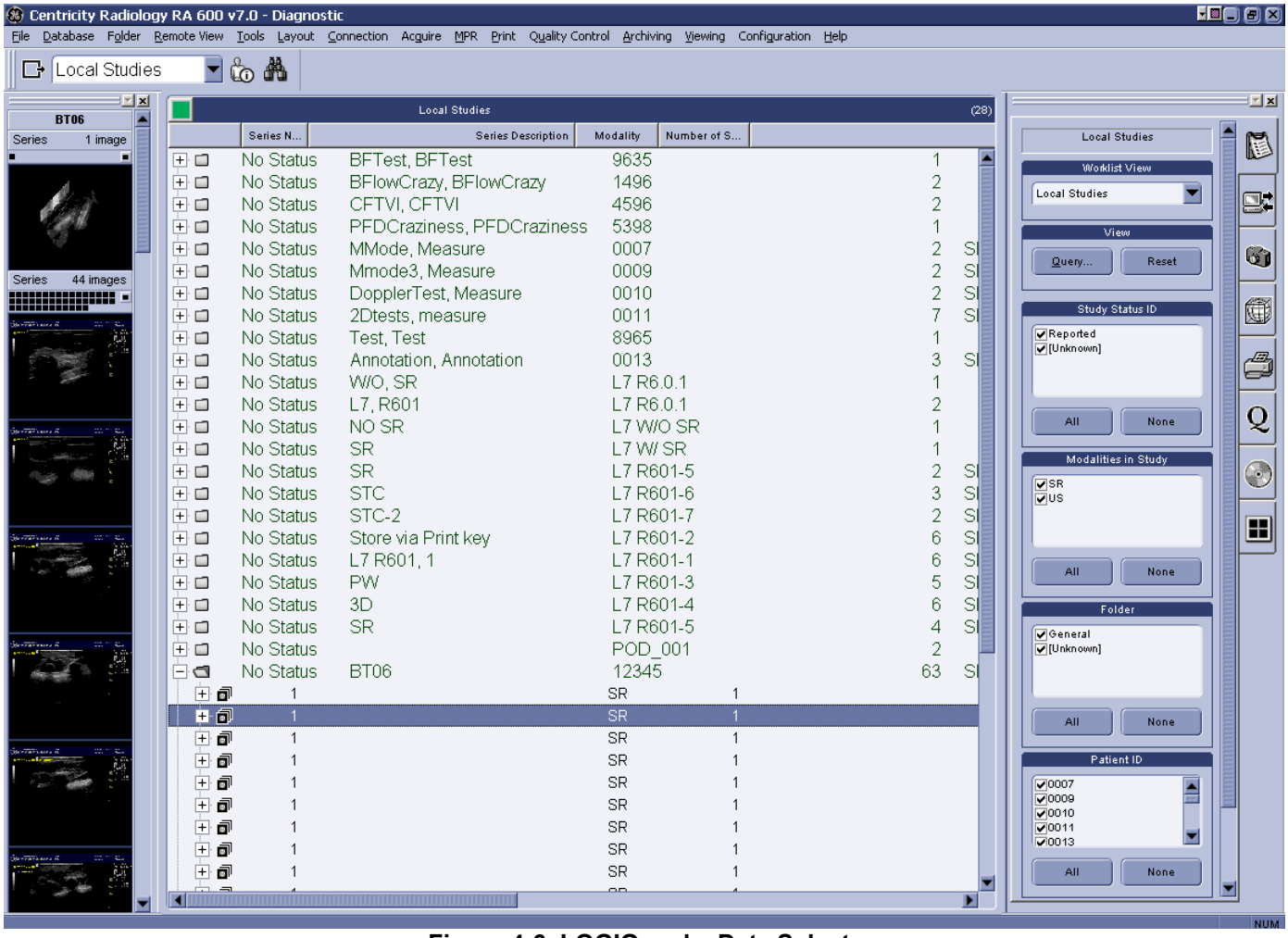


Figure 4-6 LOGIQworks Data Selector

4-3-2-2 Confirm images can be displayed on the graphical user interface

1.) If not already done, start the LOGIQworks application.

2.) Make sure you have GE Ultrasound Raw Data studies available in the local view or you have a CD or DVD work list view configured, see Section 3-5-11-1 "Reading DICOM volume from DVD or CD" on page 3-193 for more details.

3.) In the Data Selector select one study for viewing. Double click on it (anywhere in the row in your study or patient list).

4.) All the series contained into the selected study will be opened automatically and the application will switch to the Viewing Section and display the study.

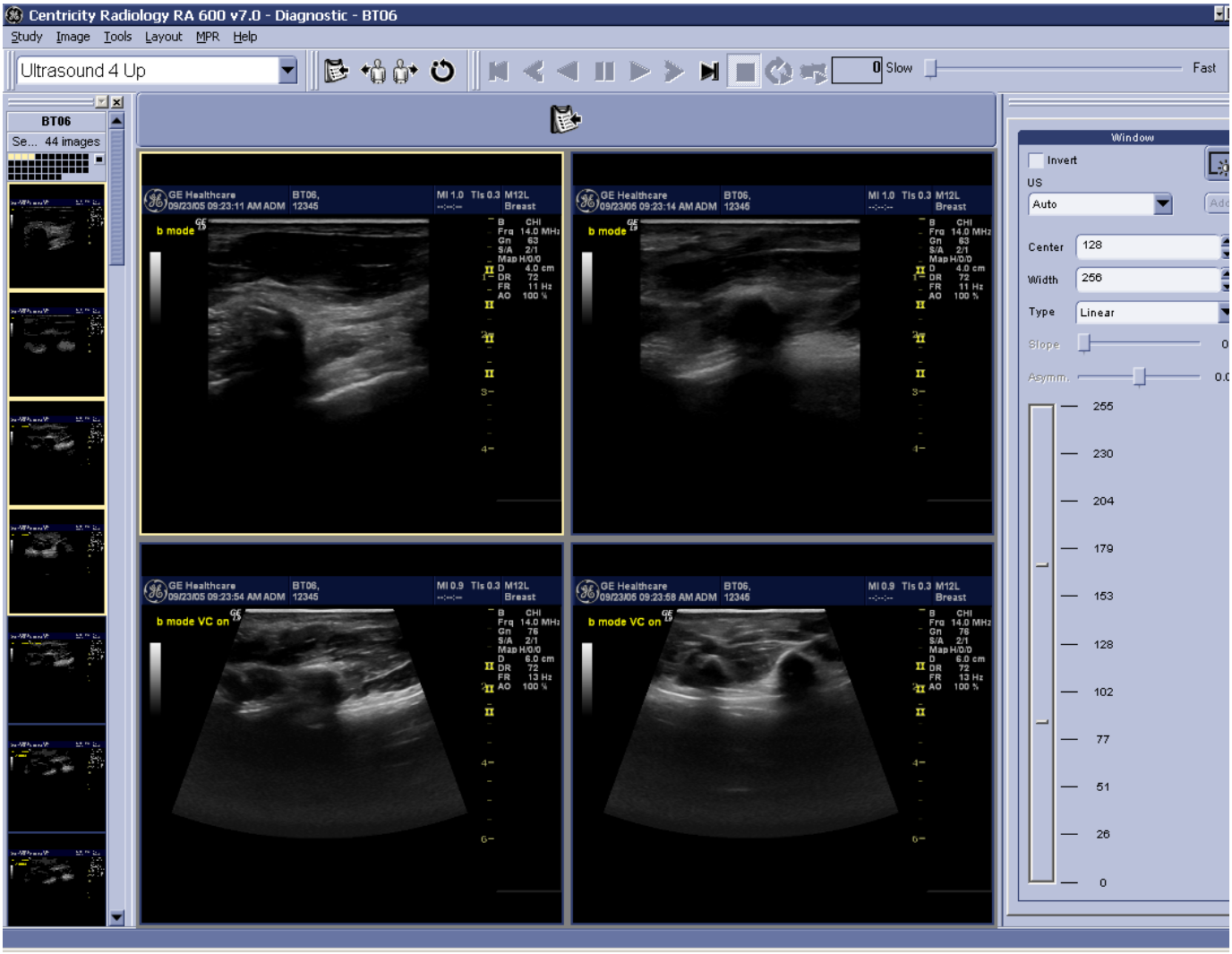


Figure 4-7 RA600 Viewing Section

4-3-2-3 Confirm images can be sent to a configured destination device.

Only applicable if your system is connected to a network.

1.) Select the data set you want to send to a remote device listed in the destinations list (see 3-5-10-2 "Setting up and configuring destinations" on page 3-186 for details on how to set up destinations).

2.) Select the Teleradiology tool tab.

Figure 4-8 Teleradiology Tool tab Icon

3.) In the destinations pane, select the site to which you want to send one or more images.

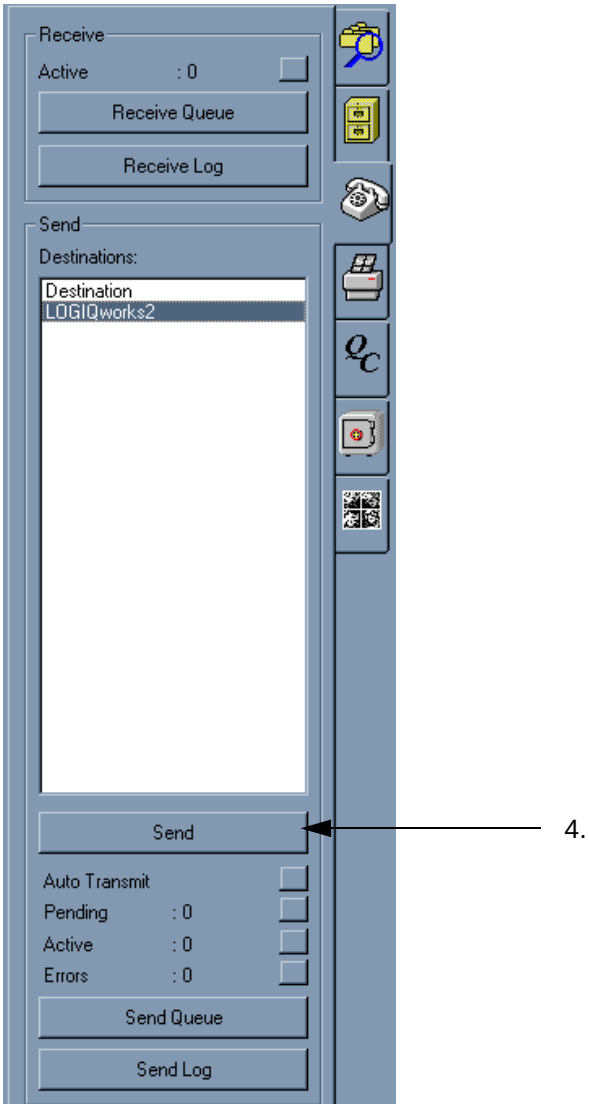


Figure 4-9 Teleradiology Tool tab

4.) Press the send button.

4-3-2-3 Confirm images can be sent to a configured destination device. (cont'd)

5.) In the Send to... dialog box specify the format you would like to use from the Format drop-down list.

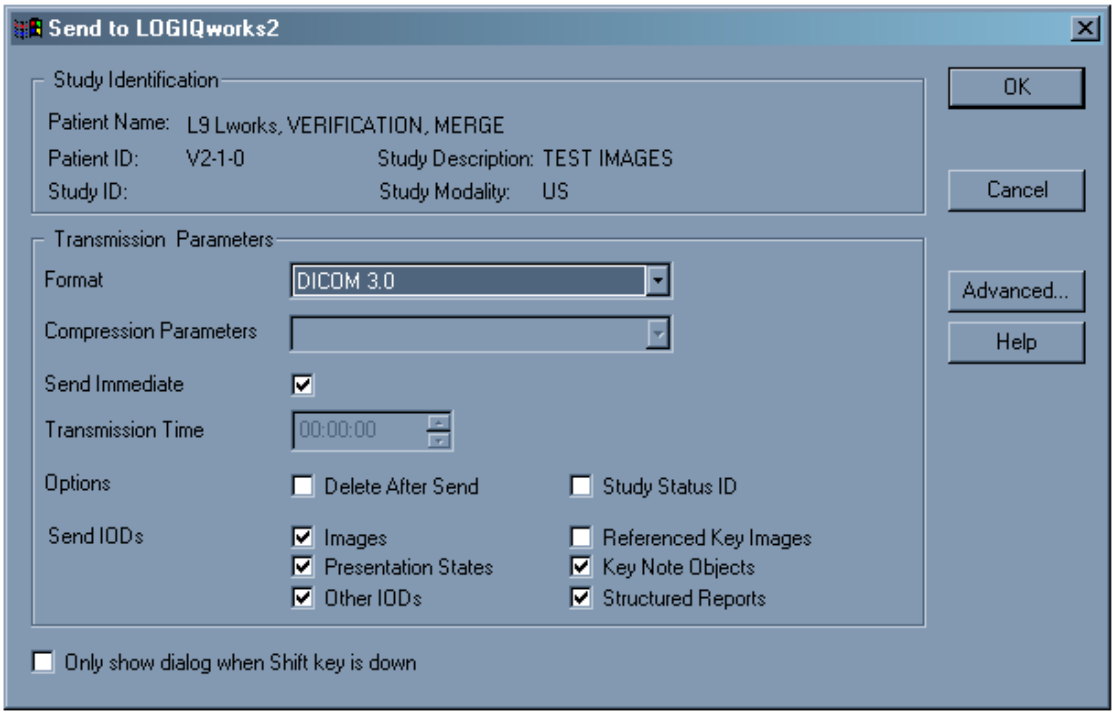


Figure 4-10 Teleradiology - Configure Sending Parameters

6.) Make sure the Send Immediate check-box is checked if you wish to send immediately.

7.) Make sure the Image check-box is checked.

8.) Click OK to send your study.

You can now monitor how many studies are waiting to be sent,

a.) whether any are correctly being sent (active)

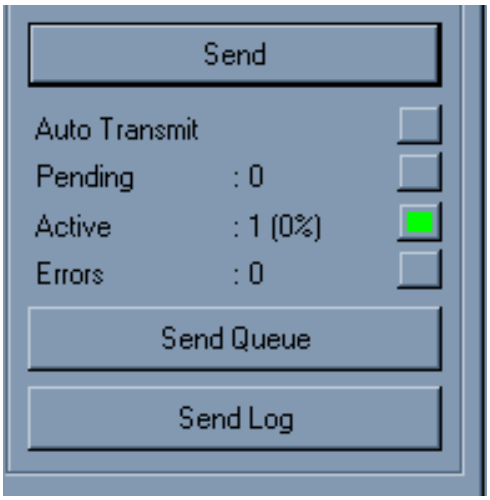


Figure 4-11 Monitor Transmission

4-3-3 Connectivity

Connectivity on the LOGIQworks™ is based on the DICOM standard.

4-3-3-1 Teleradiology

Teleradiology allows you to send series, studies, images, or image-related data to another LOGIQworks™ or other DICOM 3.0 compliant systems. Also the system is able to query and retrieve images from other DICOM 3.0 compliant systems in the network. The steps to prepare the system for sending and query retrieve are described in the following sections. The whole process of sending and receiving data can be monitored.

4-3-3-2 Configuring Connectivity

Verify correct TCP/IP configuration using the Windows Control Panel.

If not already properly configured, identify the workstation to the rest of the network by filling in its IP Address, Subnet Mask, and Gateway (if applicable). Press **OK to save the settings**.

4-3-3-3 DICOM Properties

Select Configuration -> Generic from the menu bar in the Data Selector. Bring the DICOM tab to the front and type in the DICOM Application Entity Title (AE Title) and the Port number.t

4-3-3-4 Configuring Destinations

To add a teleradiology destination

1.) Select **Connection -> Destinations...** from the menu bar in the Data Selector.
2.) In the Destinations dialog box, press Add. A dialog opens.

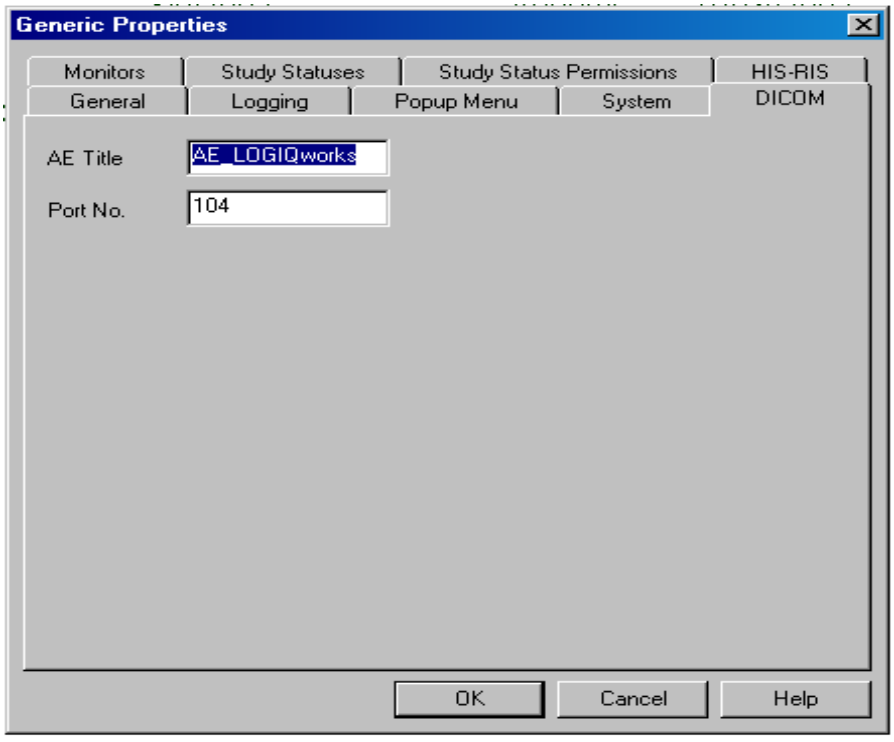


Figure 4-12 Generic Properties

4-3-3-4 Configuring Destinations (cont'd)

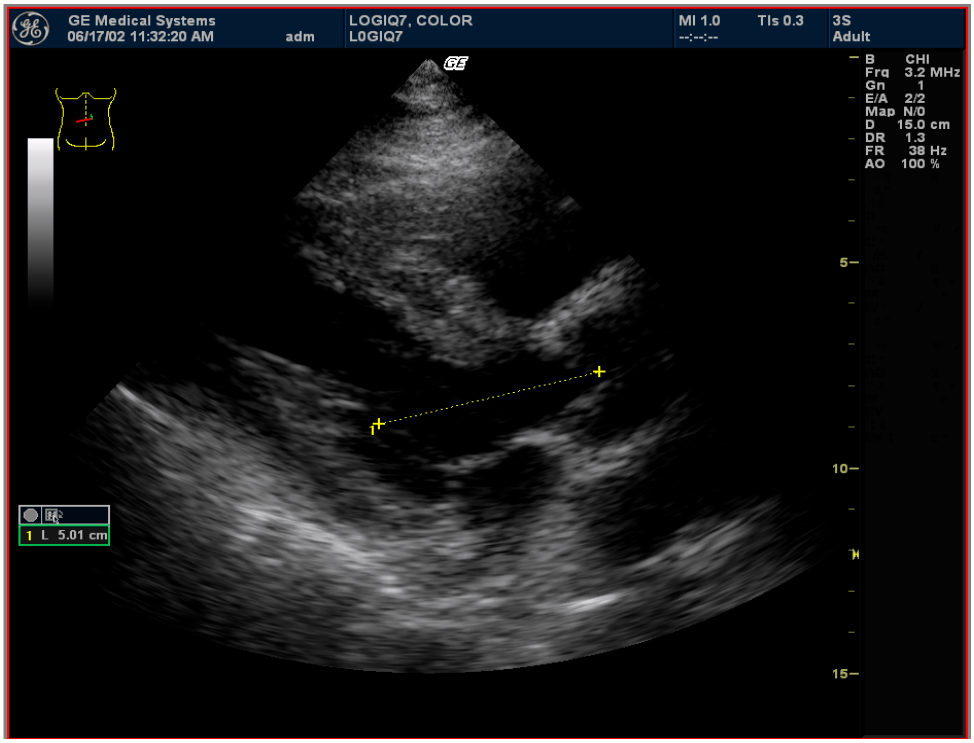


Figure 4-13 Destinations

1.) Enter the name of the new destination. The name will be displayed in the list box on the Teleradiology Tooltab. The name field must be unique. The system will check this when you enter the name.
2.) Enter the host name (DNS name or IP address) of the new destination.
3.) Optionally, you can enter a description.
4.) Press Next.
5.) Enter the DICOM AE Title for the remote system.

4-3-3-4 Configuring Destinations (cont'd)

6.) Enter the DICOM Port Number for the remote system.

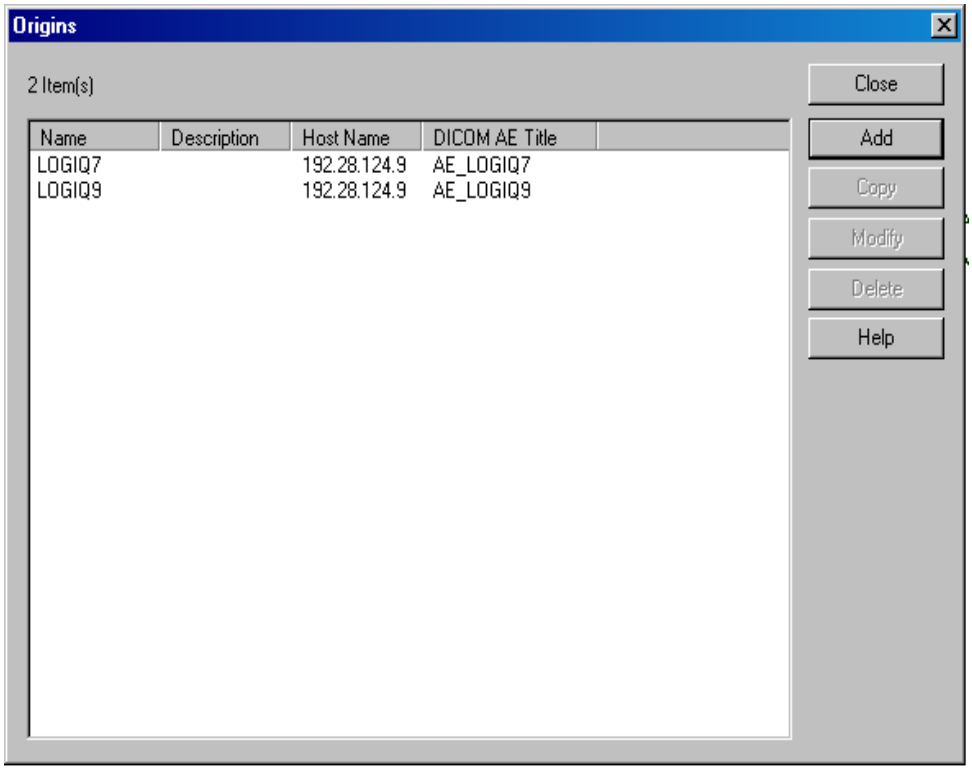


Figure 4-14 Origins

4-3-3-5 Configuring Origins

To increase system security, you can restrict communication with your LOGIQworks™ PC to a pre-configured set of permitted origins.

To turn verification on:

1.) In the Data Selector, select **Configuration -> Connection Service** from the menu and click on the Receive tab.
2.) To increase system security enable **Verify Origin**.

NOTE *On these configuration pages only alter the default settings if this is strictly necessary.*

4-3-3-6 Setting up an origin:

1.) From the Data Selector menu, select **Connection -> Origins...**.
2.) Press the Add Button, the Origin Properties page is displayed.
3.) Enter the appropriate information in the dialog box.

4-3-3-7 Receiving Series and Studies

Receiving studies takes place automatically in the background. When LOGIQworks™ has received a study, it will automatically place it in the appropriate place in your study list.

To see what images you received:

4-3-3-7 Receiving Series and Studies (cont'd)

1.) Press the **Receive Log Button on the Teleradiology tooltab.**

2.) The Receive Log will show you all the studies or series you have received along with various details about them and the transmission.

4-3-3-8 Sending entire or partial studies

While the patient is open and the plugin not active you can send entire studies, selected images or series from your system to another LOGIQworks™ or DICOM 3.0 compliant system.

1.) In the Data Selector select an entire or partial study in the Study or Patient list.

2.) In the Destinations pane of your teleradiology tooltab, select the site or sites to which you want to send one or more images.

3.) Press Send.

4.) In the Send to... dialog box select the appropriate options.

5.) Press OK to send your study.

4-3-3-9 Monitoring the Send Process

Using the teleradiology tooltab you can see at a glance if and how many studies are waiting to be sent.

For a more detailed view, press Send Queue on the teleradiology tooltab. The Send Queue box gives you information on the active jobs and on those that are waiting to be sent out.

- Details on a particular job [1].
- Remove a job from the queue [2]
- Stop a job currently in progress [3].
- Suspend a job [4].
- Resubmit a job [5].
- Set job priorities: Increase [6], Decrease [7]

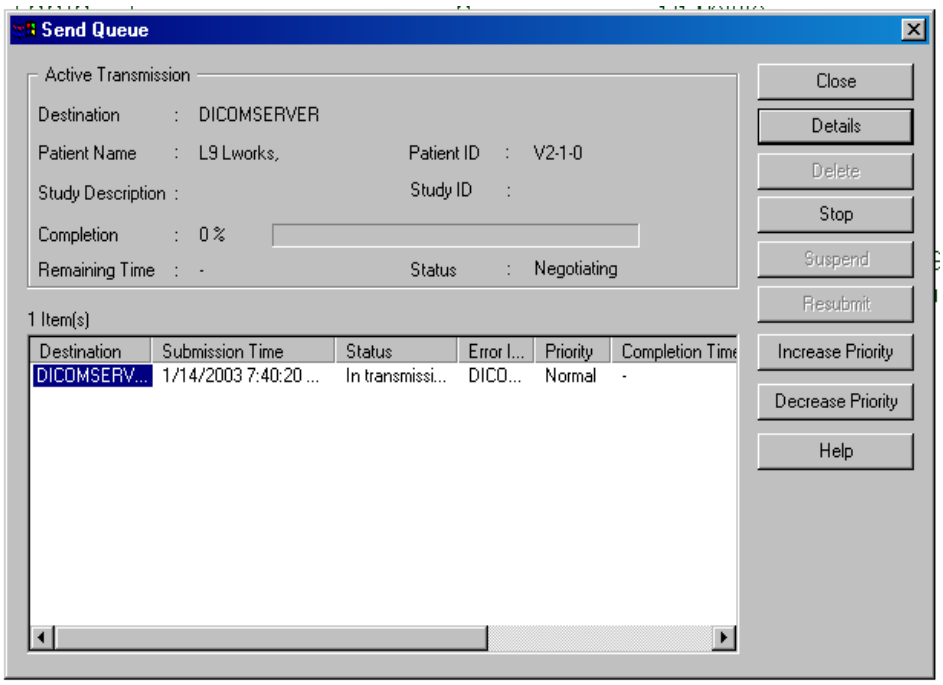


Figure 4-15 Send Queue

4-3-3-9 Monitoring the Send Process (cont'd)

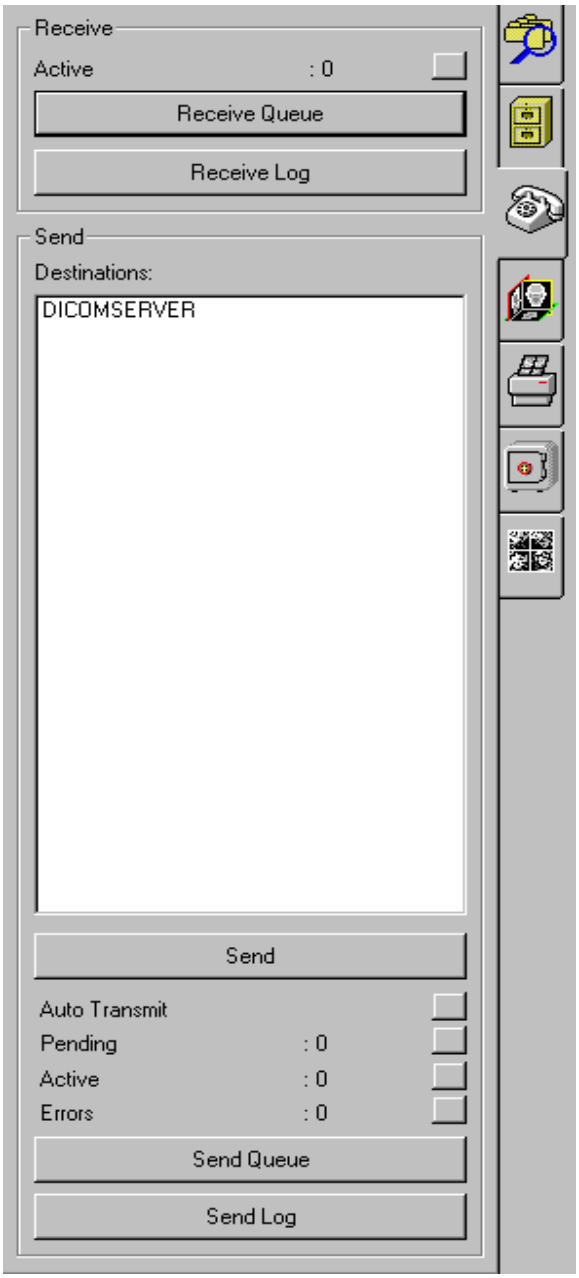


Figure 4-16 Send Queue

4-3-3-10 Remote View

The filing tooltab lets you select which remote views will appear in the center of your screen.

1.) Select the filing tooltab.
2.) Check the box at the top of the section called Remote Views.
3.) In the area immediately below, you see a number of remote views which have been configured for your system.

4-3-3-10 Remote View (cont'd)

4.) In the center of your screen you have your local view at the top [4a] and beneath is a second window showing one of your remote views [4b]. If you have multiple remote views, you see tabs at the bottom of this window.

5.) A green indicator light at the left upper edge shows that the connection has been properly established.

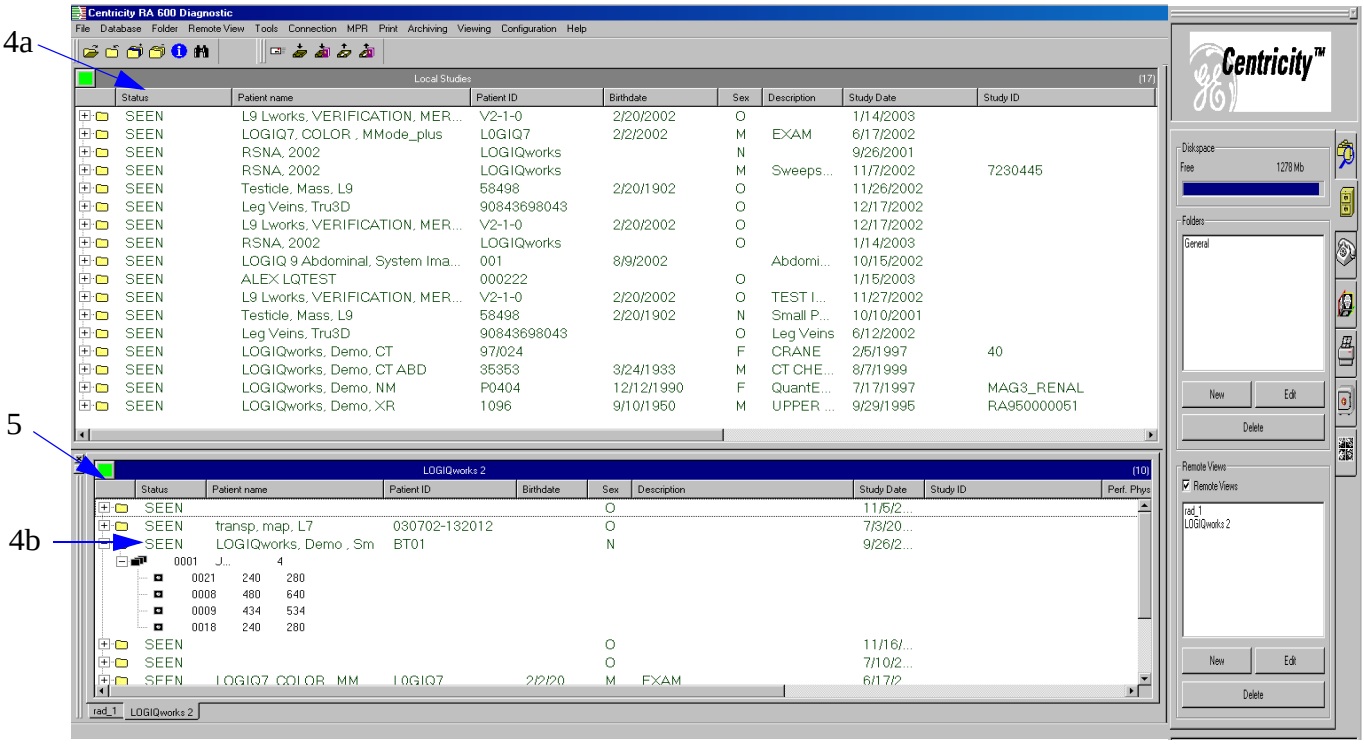


Figure 4-17 Remote View

4-3-3-11 Configuring the scanner

1.) On the scanner choose "Utility" > "Connectivity"

2.) Choose the "TCP/IP" tab. Do not change the Computer Name.

   1.) Enter the "IP-Address" and the "Subnet Mask" values.

3.) Choose the "Device" tab.

   1.) Enter the "Name" and the "IP Address".

4.) Choose the "Service" tab.

   1.) Choose in the "Destination Device" field the "LOGIQworks" entry from the pull-down menu.

   2.) Choose the "Dicom Image Storage" from the text field below.

4-3-3-11 Configuring the scanner (cont'd)

3.) Enter the "AE Title" and the "Port Number" in the "Properties" section.

NOTE *For LOGIQ 7 the AE Title has always to begin with "AE_" otherwise the images can not be transferred.*

4.) Choose the "Dicom Query/Retrieve" entry from the text field above.
5.) Enter the "AE Title" and the "Port Number" in the "Properties" section.
6.) Choose the "Dicom Storage Commitment" entry from the text field above.
7.) Enter the "AE Title" and the "Port Number" in the "Properties" section

5.) Choose the "Dataflow" tab.

1.) Choose a dataflow from the list.
2.) Enter the "Name" in the "Properties" section.
3.) Choose a entry in the "Default Dataflow" field.
4.) Choose a "Dataflow View" from the list and add with <<.

6.) Choose the "Button" tab.
7.) Do as described below:

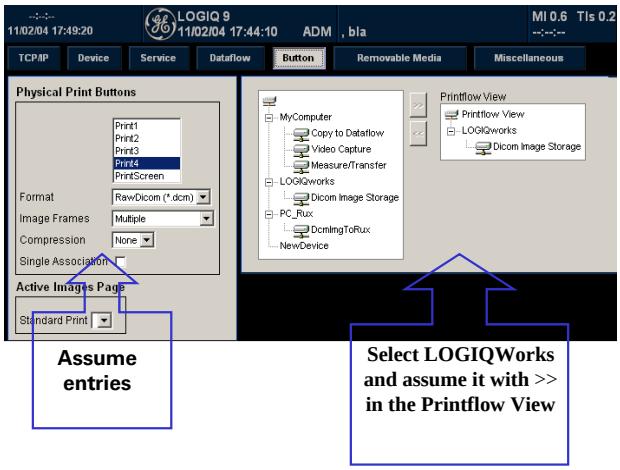


Figure 4-18 Configuring the scanner

4-3-4 Verification of the installation

To verify the correct installation of the TRUAccess Plug-In 2.0.2 or 3.0 do this:

1.) Start RA 600 and import an image from the database.
2.) Open an image.
3.) Start the TRUAccess Plug-In for the image from the context menu.
4.) Choose the Plug-In tool panel.
5.) Click on "Settings".
6.) Click on "Utility".
7.) Open the "About" tab. If "Version 2.0.2" or "Version 3.0" is displayed in the "Software version" field the Plug-In is successfully installed.

4-3-5 Service Platform Check for LOGIQworks up to Revision 2.0

4-3-5-1 Checking Global Service Platform connections

1.) Click on the Wrench icon on the desktop or in the Quick Launch bar.

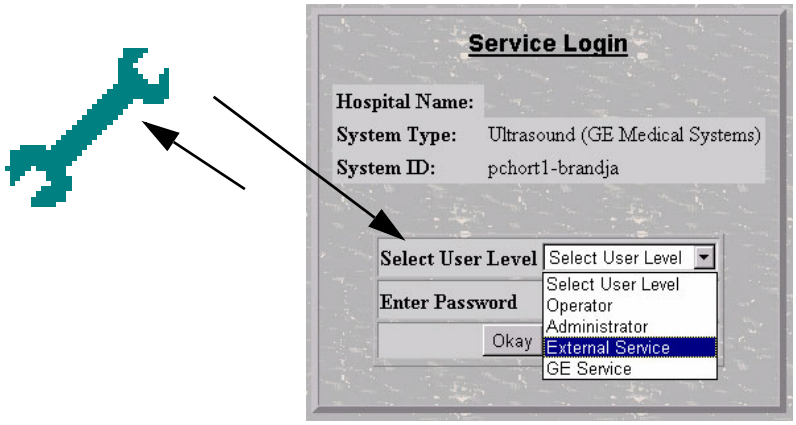


Figure 4-19 Service selection and Logon

2.) Select the logon level and enter the password for it to connect as shown below.

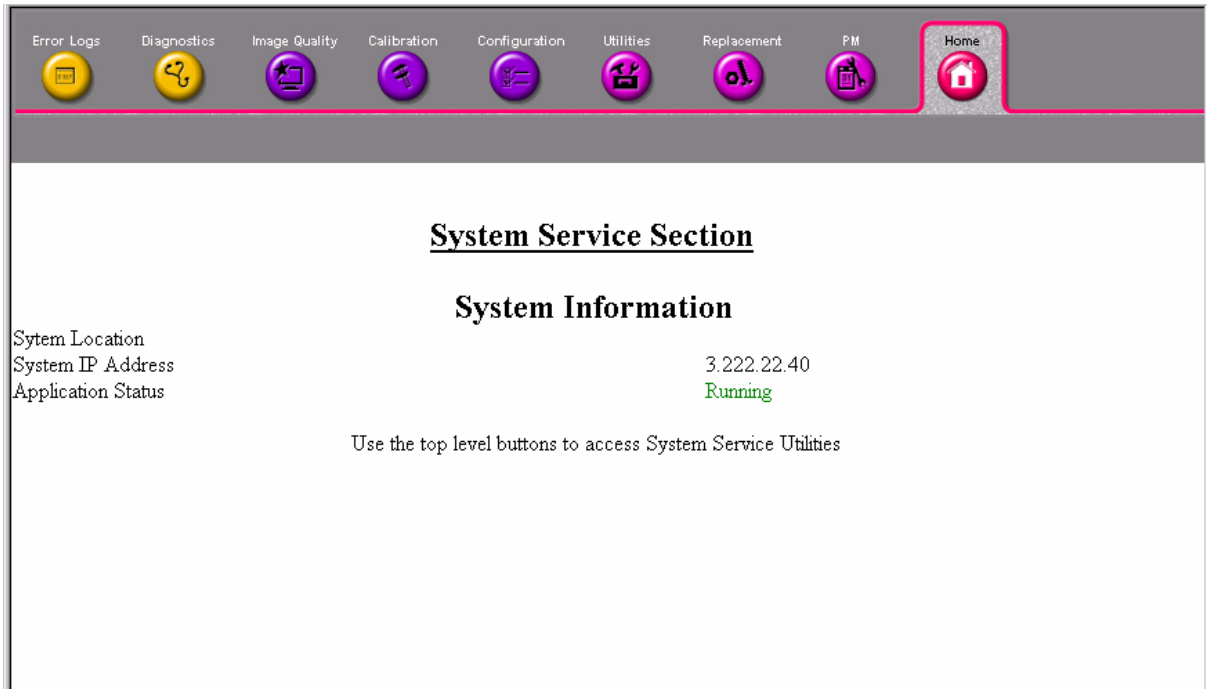


Figure 4-20 In site home page for External Service Logon

4-3-5-2 Checking iLinq Connection

1.) Click On the iLinq button on the Desktop. Wait until the system is connected to GE to check for new messages. You will see the update screen.

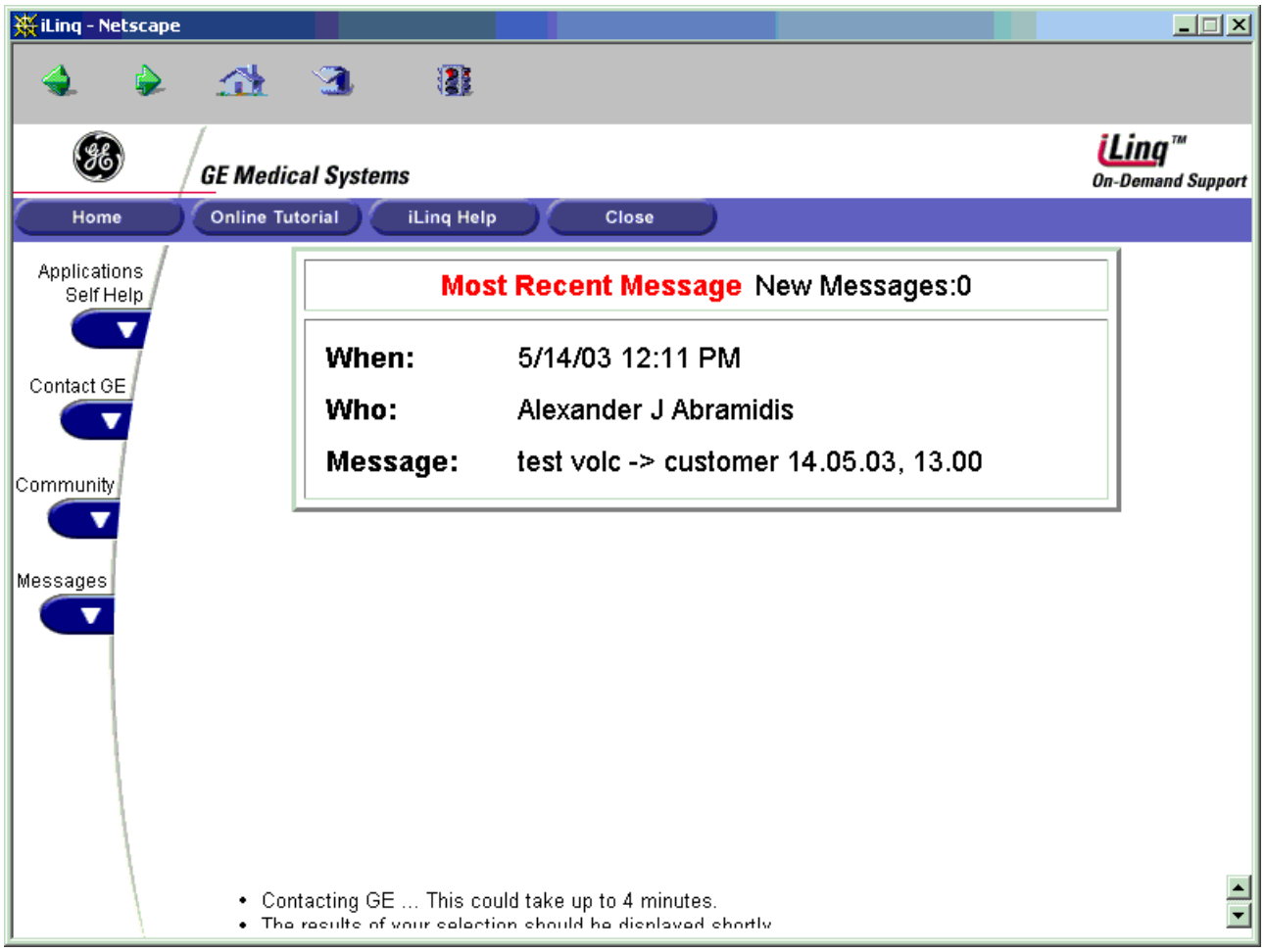


Figure 4-21 iLinq Home screen

4-3-6 Modem Check (For LOGIQworks 3.0 optional)

Figure 4-22 Modem front

4-3-6-1 Power-On

1.) Test the modem by turning it on (a power on/off switch is located on the right side). When you apply power, the modem performs a diagnostic self-test, indicated by several indicators flashing for a second or two, after which the 56 indicator should light.

2.) If this does not happen, check that the power switch is on, the power supply is solidly connected, and the AC outlet is live.

4-3-6-2 Modem Ready

Whenever the system is rebooted, the modem does not go through power cycle. Sometimes it might become necessary to restart the modem.

Check the following before restarting the modem:

- Check if there are 2 led lit on the modem. TR (Terminal Ready) and any of the 56,33,14 (indicate the maximum data speed of the modem 56kbps, 33kbps or 14kbps).
- Call the modem phone number from a regular phone. Make sure when the modem answers the OH (off hook) led is lit, and you hear the modem handshake.

These steps will make sure that the modem phone line is working correctly.

If the in site checkout or connection still fails,

4-3-6-3 Modem Self-Test

Click on **Start**->**Settings**->**Control panel**->double click phone and modem options->select modems tab->

Make sure MultiTech MT5634ZBA is listed.

Select the Modem ->Click on properties-> select Diagnostics tab->click on Query Modem.

Make sure operating system displays a message ‘Communicating with the modem’ and displays certain results after some time. Not all the commands are supported by the modem. So some of the diagnostics might fail. These unsupported commands are not known to cause any problems.

4-3-7 DVD Writer Check

4-3-7-1 Check reading from DVD

Figure 4-23 DVD-Drive Front

Table 4-4 Using DVD Disk Drive

Step	Task	Expected Result(s)
1.	Press the Eject Button on the DVD drive front to eject the disk tray for media input.	The DVD drive tray is open.
2.	Insert the DVD into the DVD Drive with the label facing up and push the tray carefully to close.	Check that there is activity in the Busy LED.
3.	Open the Windows explorer and check which drive letter is representing the DVD drive.	Verify that the drive letter F: is assigned to the DVD drive.
4.	Read a DICOM Volume from DVD, please refer to Section 3-5-11-1 on page 3-193 for more details on how to create a CD, DVD or other work list views and how to add a view to the data selector.	All studies available on the DICOM media shall be visible in the data selector.
5.	To eject a disk from the DVD Drive press the Eject Button on the DVD front.	The DVD drive tray opens and the disk is ready to be removed.

4-3-7-2 Check writing to DVD

Table 4-5 Using DVD Disk Drive

Step	Task	Expected Result(s)
1.	Press the Eject Button on the DVD drive front to eject the disk tray for media input.	The DVD drive tray is open.
2.	Insert the DVD into the DVD drive with the label facing up and push the tray carefully to close.	Check that there is activity in the Busy LED.
3.	Write a DICOM Volume to DVD, please refer to Section 3-5-11-2 on page 3-199 for more details on how to prepare the system for using SME option and to Section 4-3-8 on page 4-23 for detailed steps of how to write data to DVD using the SME option.	
4.	Writing to DVD is complete.	The tray opens automatically and the DVD is ready to be removed.

4-3-8 Archiving data with the Single Media Exchange Software Option

To test the SME functionality first select some studies in the Data Selector for writing to the SME.

1.) Either

a.) select the studies by highlighting them in the Data Selector and then selecting Select for Archiving on the Archiving menu.

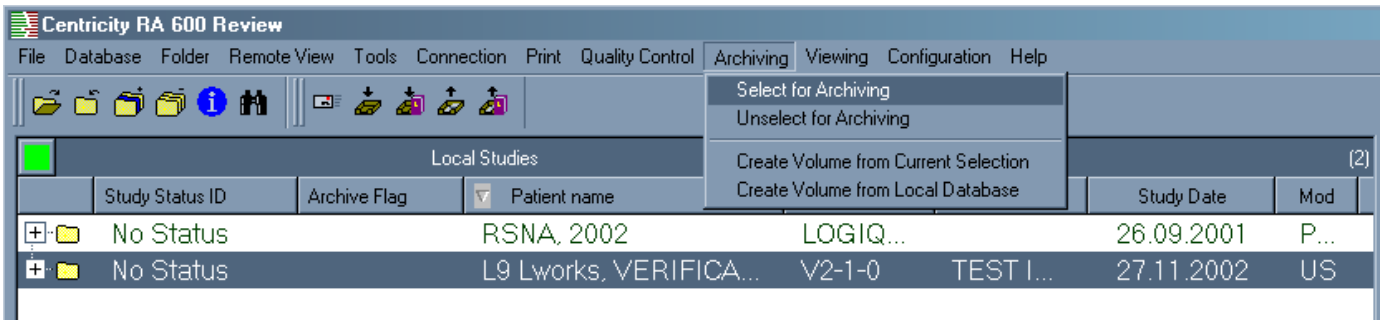


Figure 4-24 Select for Archiving (using the Data Selector menu)

or

b.) Right click on the desired study and select **Archiving** > **Select for Archiving** on the popup menu.
Note that the selected studies become marked with Archive in the Selected for Archiving column of the Data Selector.

4-3-8 Archiving data with the Single Media Exchange Software Option (cont'd)

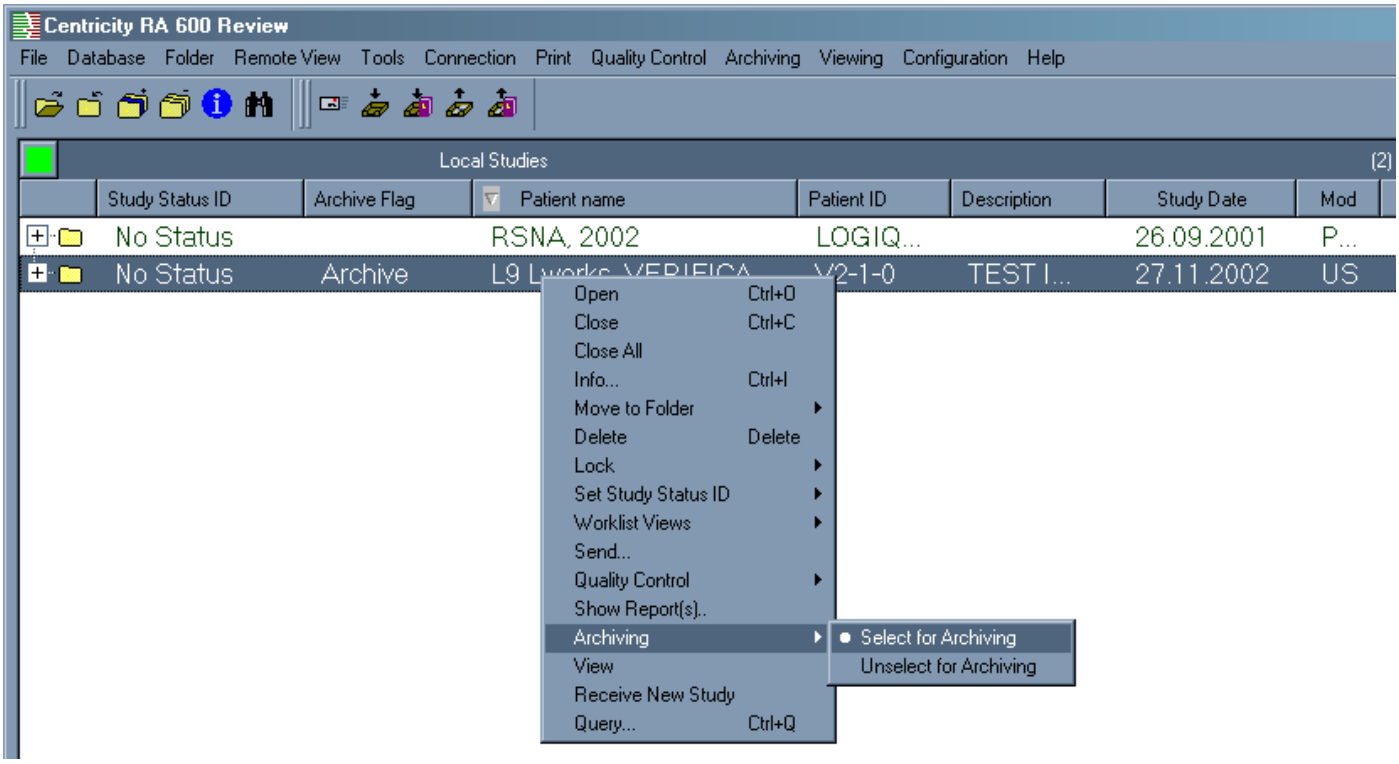


Figure 4-25 Select for Archiving (using the Right Click menu)

2.) When all the desired studies have been selected for archiving, first ensure a writable CD or DVD is in the drive. The approximate number of disks required to store the selected studies is shown in the Est. number of disks field on the Archive tab to the right of the Data Selector. Refer to the RadWorks 6.0 User's Guide, page 272 for information on using the Archive Index Tool.

4-3-8 Archiving data with the Single Media Exchange Software Option (cont'd)

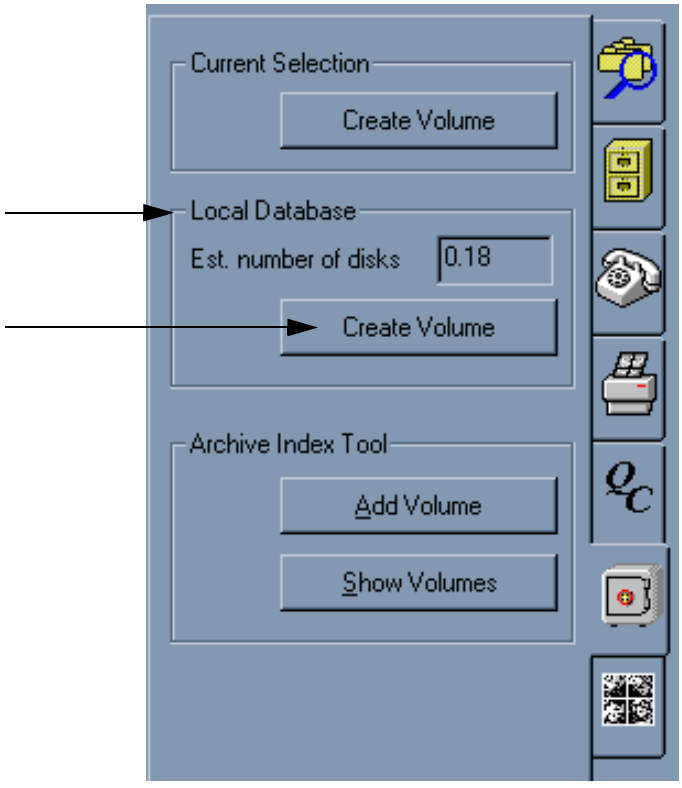


Figure 4-26 Create Volume (Tool tab)

3.) Start the write operation either

a.) by clicking the **Local Database** > **Create Volume** button on the Archive tab to the right of the Data Selector (See Figure 4-26)

or

b.) by selecting the **Archiving** > **Create Volume from current selection** from the menu bar.

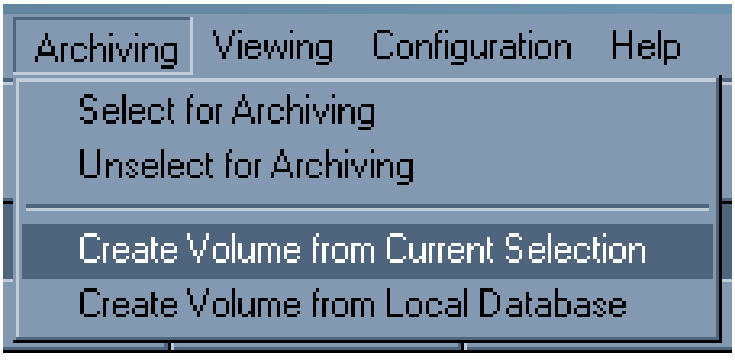


Figure 4-27 Create Volume (Data Selector Menu)

4.) Once the write process starts, popup windows keep you informed about the archiving process.

Section 4-4
Healthpage

4-4-1 Healthpage for LOGIQworks up to Rev. 1.3

The Healthpage tool indicates some details around LOGIQworks.The user can view the license, the running services and log files.

NOTE *All log files are also available under 'Service Browser'.*

1.) To start 'Healthpage', click on the desktop icon:

Figure 4-28 Healthpage Icon

2.) The main window of 'Healthpage' appears.

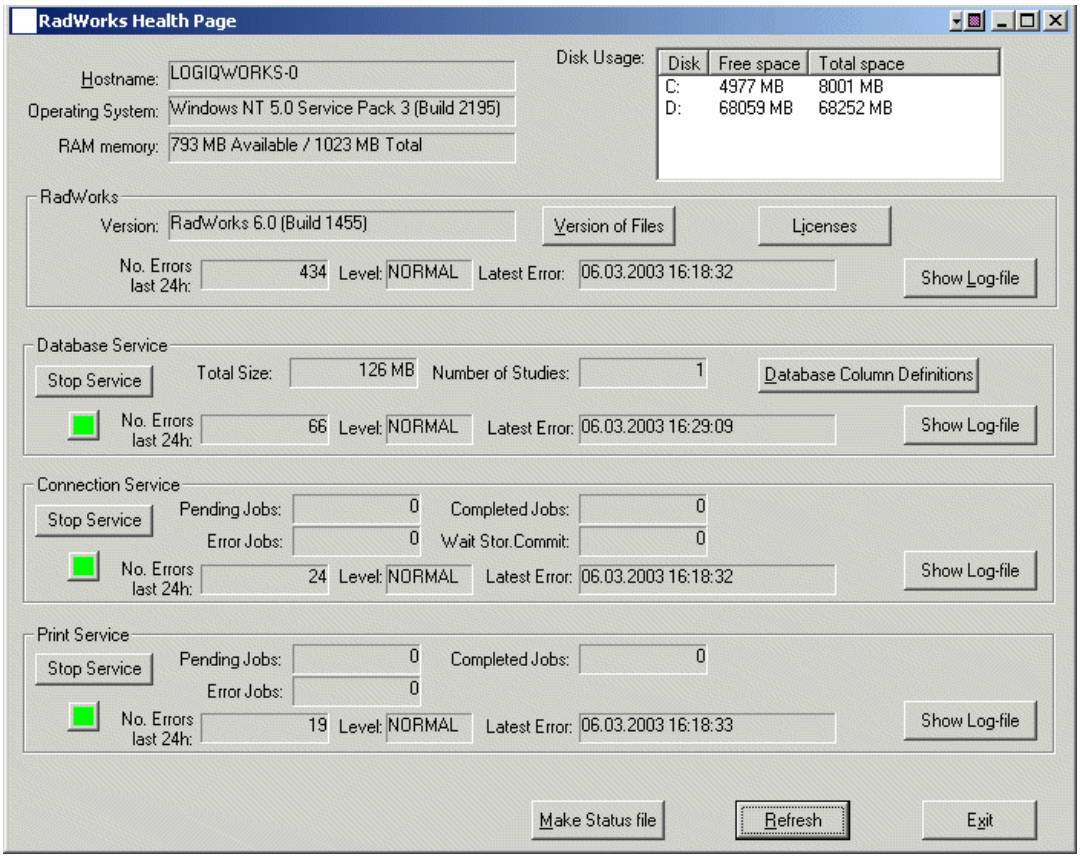


Figure 4-29 Healthpage Window

3.) Start or stop a service
4.) The green light for each service shows that the service is running.
5.) Clicking the 'Stop service' or 'Start Service' button toggles that service is on or off.

4-4-1 Healthpage for LOGIQworks up to Rev. 1.3 (cont'd)

Normally all services are running. In cases of updating the system or changing the license file, a manual start of all services could be necessary. If the license file is valid, all services start up automatically after reboot.

4-4-2 Healthpage for LOGIQworks up to Rev. 2.0 and 3.0

The Healthpage tool indicates some details around LOGIQworks.The user can view the license, the running services and log files.

NOTE *All log files are also available under 'Service Browser'.*

1.) To start 'Healthpage', click on the desktop icon:

Figure 4-30 Healthpage Icon

4-4-1 Healthpage for LOGIQworks up to Rev. 1.3 (cont'd)

2.) The main window of 'Healthpage' appears.

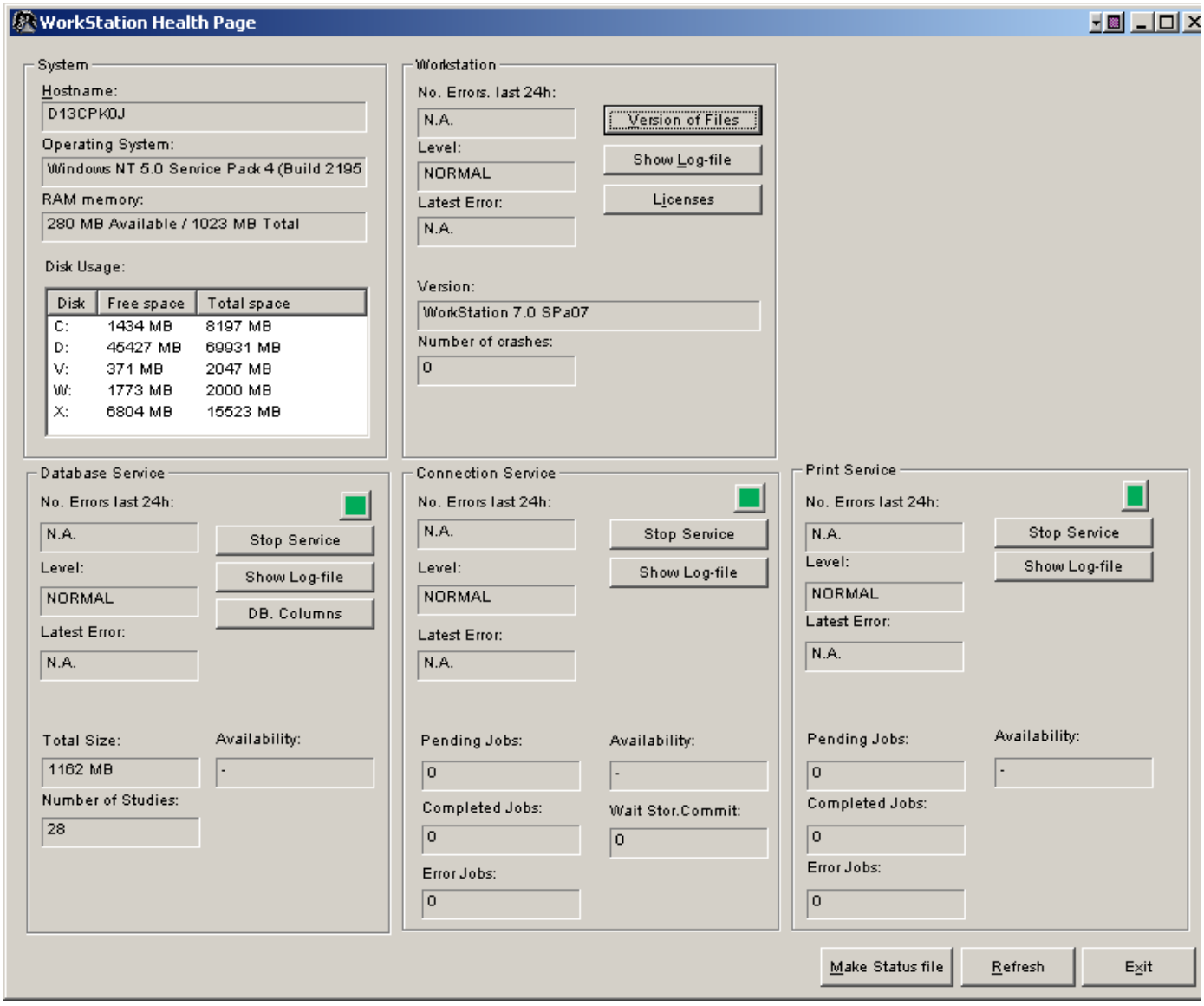


Figure 4-31 Healthpage Window

3.) Start or stop a service

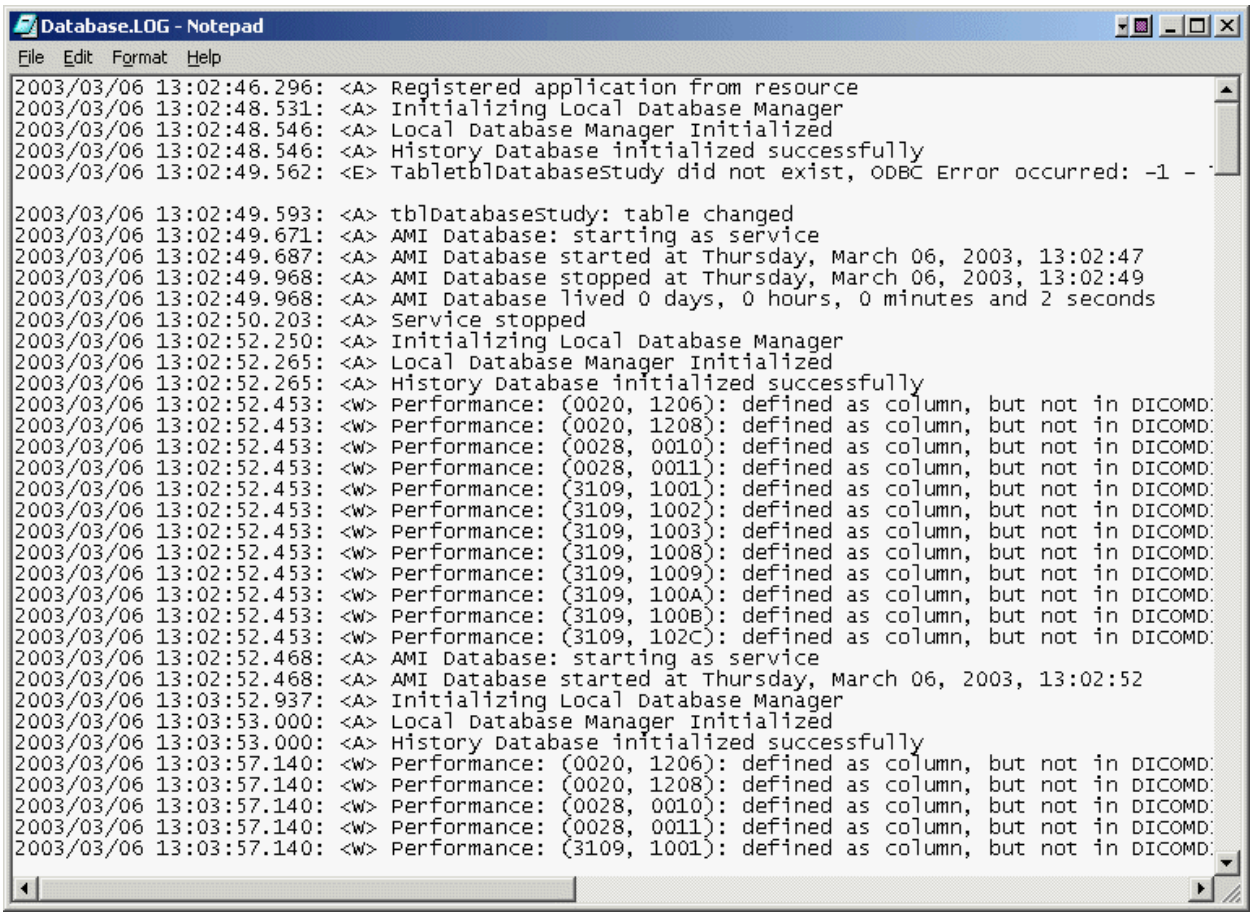
4.) The green light for each service shows that the service is running.

5.) Clicking the 'Stop service' or 'Start Service' button toggles that service is on or off.

Normally all services are running. In cases of updating the system or changing the license file, a manual start of all services could be necessary. If the license file is valid, all services start up automatically after reboot.

4-4-3 Logfiles

You can view the overall Logfile for RadWorks or the logfile for a single service.



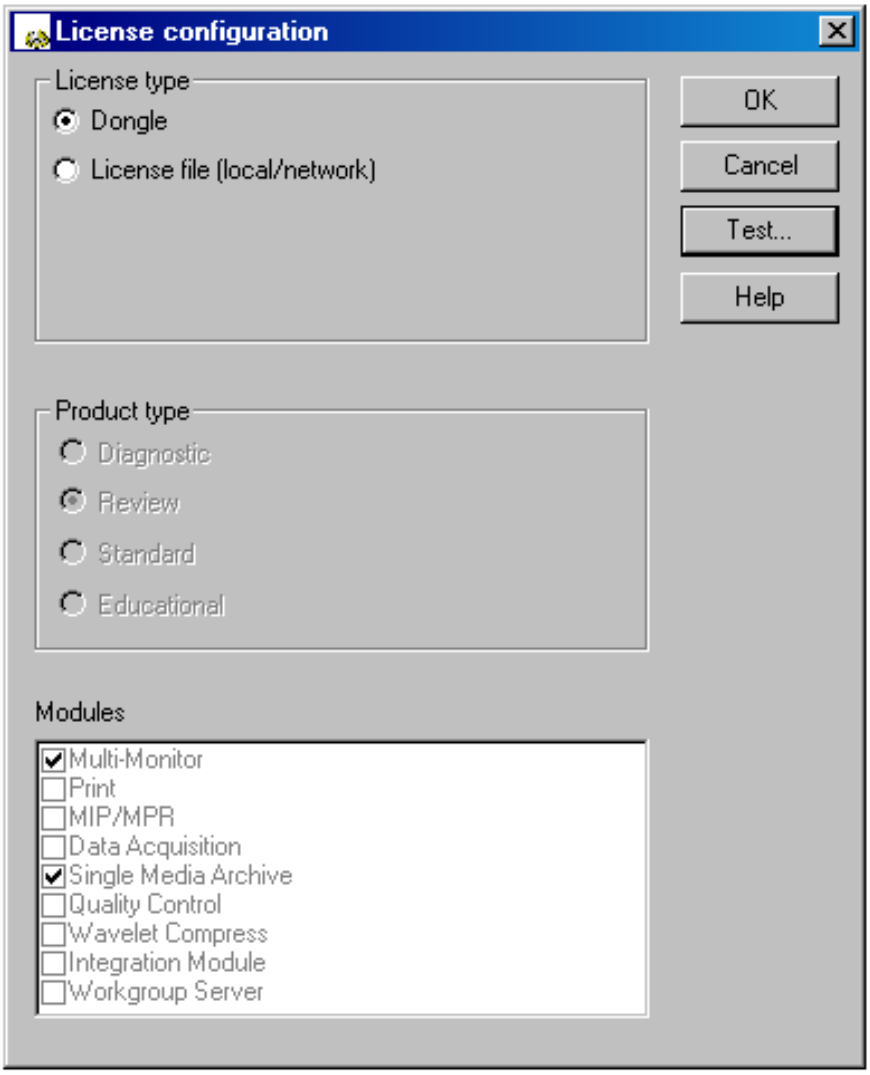
```
Database.LOG - Notepad
File  Edit  Format  Help
2003/03/06 13:02:46.296: <A> Registered application from resource
2003/03/06 13:02:48.531: <A> Initializing Local Database Manager
2003/03/06 13:02:48.546: <A> Local Database Manager Initialized
2003/03/06 13:02:48.546: <A> History Database initialized successfully
2003/03/06 13:02:49.562: <E> TabletblDatabaseStudy did not exist, ODBC Error occurred: -1 -

2003/03/06 13:02:49.593: <A> tblDatabaseStudy: table changed
2003/03/06 13:02:49.671: <A> AMI Database: starting as service
2003/03/06 13:02:49.687: <A> AMI Database started at Thursday, March 06, 2003, 13:02:47
2003/03/06 13:02:49.968: <A> AMI Database stopped at Thursday, March 06, 2003, 13:02:49
2003/03/06 13:02:49.968: <A> AMI Database lived 0 days, 0 hours, 0 minutes and 2 seconds
2003/03/06 13:02:50.203: <A> Service stopped
2003/03/06 13:02:52.250: <A> Initializing Local Database Manager
2003/03/06 13:02:52.265: <A> Local Database Manager Initialized
2003/03/06 13:02:52.265: <A> History Database initialized successfully
2003/03/06 13:02:52.453: <W> Performance: (0020, 1206): defined as column, but not in DICOMD
2003/03/06 13:02:52.453: <W> Performance: (0020, 1208): defined as column, but not in DICOMD
2003/03/06 13:02:52.453: <W> Performance: (0028, 0010): defined as column, but not in DICOMD
2003/03/06 13:02:52.453: <W> Performance: (0028, 0011): defined as column, but not in DICOMD
2003/03/06 13:02:52.453: <W> Performance: (3109, 1001): defined as column, but not in DICOMD
2003/03/06 13:02:52.453: <W> Performance: (3109, 1002): defined as column, but not in DICOMD
2003/03/06 13:02:52.453: <W> Performance: (3109, 1003): defined as column, but not in DICOMD
2003/03/06 13:02:52.453: <W> Performance: (3109, 1008): defined as column, but not in DICOMD
2003/03/06 13:02:52.453: <W> Performance: (3109, 1009): defined as column, but not in DICOMD
2003/03/06 13:02:52.453: <W> Performance: (3109, 100A): defined as column, but not in DICOMD
2003/03/06 13:02:52.453: <W> Performance: (3109, 100B): defined as column, but not in DICOMD
2003/03/06 13:02:52.453: <W> Performance: (3109, 102C): defined as column, but not in DICOMD
2003/03/06 13:02:52.468: <A> AMI Database: starting as service
2003/03/06 13:02:52.468: <A> AMI Database started at Thursday, March 06, 2003, 13:02:52
2003/03/06 13:03:52.937: <A> Initializing Local Database Manager
2003/03/06 13:03:53.000: <A> Local Database Manager Initialized
2003/03/06 13:03:53.000: <A> History Database initialized successfully
2003/03/06 13:03:57.140: <W> Performance: (0020, 1206): defined as column, but not in DICOMD
2003/03/06 13:03:57.140: <W> Performance: (0020, 1208): defined as column, but not in DICOMD
2003/03/06 13:03:57.140: <W> Performance: (0028, 0010): defined as column, but not in DICOMD
2003/03/06 13:03:57.140: <W> Performance: (0028, 0011): defined as column, but not in DICOMD
2003/03/06 13:03:57.140: <W> Performance: (3109, 1001): defined as column, but not in DICOMD
```

Figure 4-32 RadWorks Overall Logfile

4-4-4 License Configuration

1.) Click 'Licenses', if you want to see what options are included in your license.



NOTE: This is an example! Your output may differ

Figure 4-33 Licence Options

You have the possibility to select a license file, to show the license options or to switch to a license dongle.

You should not change anything except you want to change the license to another one.

4-4-5 License Test

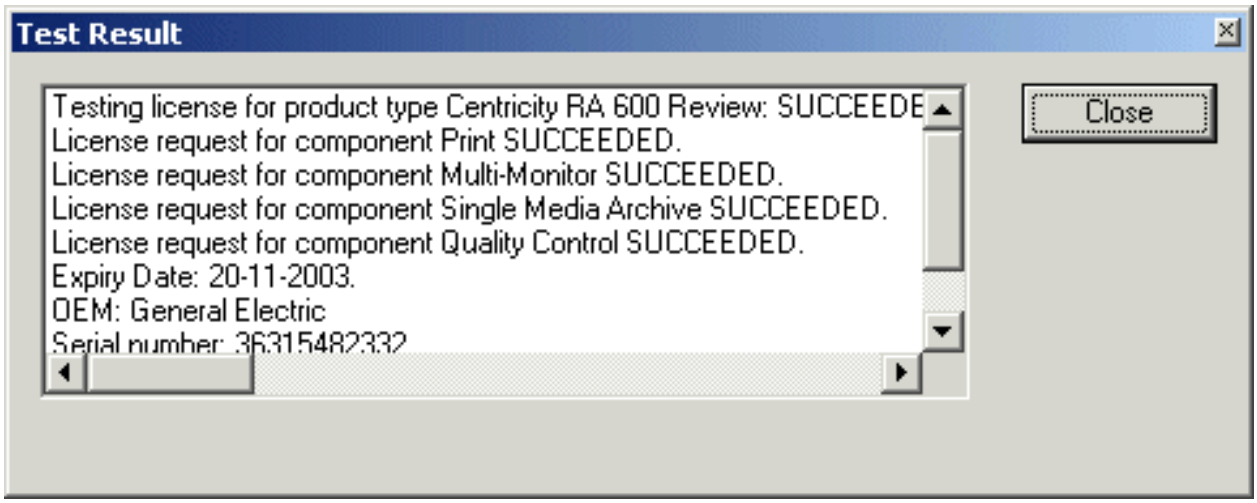


Figure 4-34 Licence Test

Section 4-5
Site Log

Date	Service person	Problem	Comments

Table 4-6 Site Log

Chapter 5
Components and Functions (Theory)

Section 5-1
Overview

5-1-1 Purpose of Chapter 5

This chapter explains LOGIQworks PC's system concepts, component arrangement, and subsystem function.

Table 5-1 Contents in Chapter 5

Section 5-2
Major Components

LOGIQworks Work Station is a commercially available Dell PC which has Ethernet for communication with the local network or the hospital network. It has a modem for internet communications with on-line service. It has external read and write media for locally handled scan data.

5-2-1 List of Major Components

- Monitors (LCD or CRT)
- Dell PC
- Keyboard & Mouse
- Modem (Option)
- USB Hard drive

Section 5-3
Block Diagrams and Theory

5-3-1 Work Station Overview

5-3-1-1 Technical Specifications of System based on Dell Precision 340

* Dell Precision 340
* Main Processor - Pentium IV 2.4 GHz
* 1024 MB RAM
* Hard Disk Capacity = 80GB
* Internal Archive space:70 GB
* CD RW – 40x, for S/W Upgrade
* 10/100 Mbit Ethernet
* 3 1/2 “Floppy Disk, 1.44MB, for download data
* Dual Head Graphic Adapter
* IEEE 1394, Fire wire Controller
* Modem 56 Kbit
* 21" Monitor 1280 x 1023 resolution with maximum 170 Hz refresh rate
* 18.1" LCD Screen
* USB Hard Disk (64MB)

5-3-1-2 Theoretical Description of System based on Dell Precision 340

LOGIQworks runs on a conventional off the shelf PC with either 18.1” LCD monitor or 21” CRT monitor, an extended keyboard and a mouse.

It communicates with Insight and iLinq via a modem interface which has dedicated power and phone line delivery.

It runs on a local network or on a hospital network.

This is an overview of the LOGIQworks Work Station interconnections. Each of the main elements will be covered on the following pages.

5-3-1-3 Technical Specifications of System based on Dell Precision 360

* Dell Precision 360
* Main Processor - Pentium IV 2.6 GHz
* 1024 MB RAM
* Hard Disk Capacity = 250GB
* Internal Archive space: 230GB
* CD/DVD RW
* 10/100/1000 Mbit Ethernet
* 3 1/2 “Floppy Disk, 1.44MB, for download data
* Dual Head Graphic Adapter
* 19" LCD Screen Europe, 20” LCD Screen US/Asia
* USB Hard Disk (64MB)

5-3-1-4 Technical Specifications of System based on Dell Precision 370

* Dell Precision 370
* Main Processor - Pentium IV 2.8 GHz

5-3-1-4 Technical Specifications of System based on Dell Precision 370 (cont'd)

* 1024 MB RAM
* Hard Disk Capacity = 250GB
* Internal Archive space: 230GB
* CD/DVD RW
* 10/100/1000 Mbit Ethernet
* 3 1/2 "Floppy Disk, 1.44MB, for download data
* Dual Head Graphic Adapter
* 19" LCD Screen Europe, 20" LCD Screen US/Asia
* USB Hard Disk (64MB)

5-3-1-5 Technical Specifications of System based on Dell Precision 380

* Dell Precision 380
* Main Processor - Pentium IV 3.0GHz
* 1024 MB RAM
* Hard Disk Capacity = 250GB
* Internal Archive space: 230GB
* CD/DVD RW
* 10/100/1000 Mbit Ethernet
* 3 1/2 "Floppy Disk, 1.44MB, for download data
* Dual Head Graphic Adapter
* 19" LCD Screen Europe, 20" LCD Screen US/Asia

5-3-1-6 Technical Specifications of System based on Dell Precision 390

* Dell Precision 390
* Main Processor - Single-Core Intel® Pentium® 4 631 (3,0 GHz, 800 FSB, 2 MB L2-Cache) or Dual-Core Intel® Core 2 Duo E6400 (2,13 GHz, 1066 FSB, 2 MB L2-Cache)
* 1GB RAM
* Hard Disk Capacity = 250GB
* Internal Archive space: 230GB
* CD/DVD RW
* 10/100/1000 Mbit Ethernet
* 3 1/2 "Floppy Disk, 1.44MB, for download data
* Dual Head Graphic Adapter
* 19" LCD Screen Europe, 20" LCD Screen US/Asia

5-3-1-7 Theoretical Description of System based on Dell Precision 360, Dell Precision 370, Dell Precision 380 and Dell Precision 390

LOGIQworks runs on a conventional off the shelf PC with either 19" LCD monitor or 20" LCD monitor, an extended keyboard and a mouse.

It communicates with Insight and iLinq via either a modem (which has it's own dedicate power and phone line), or a (GE approved) VPN connection.

It runs on a local network or on a hospital network.

This is an overview of the LOGIQworks Work Station interconnections. Each of the main elements will be covered on the following pages.

5-3-1-8 Description of Drives and Partition

Table 5-2 Description of Drives and Partition of System based on Dell Precision 340

Drive	Partition
Drive A	3.5” Floppy Disc
Drive B	N/A
Drive C	7 GB partition contains Windows 2000 and the LOGIQworks application software
Drive D	67 GB partition contains DICOM Data
Drive E	USB HDD contains user and software settings
Drive F	N/A
Drive G	CD-RW Drive used with the SMA option to store DICOM data

Table 5-3 Description of Drives and Partition of System based on Dell Precision 360

Drive	Partition
Drive A	3.5” Floppy Disc
Drive B	N/A
Drive C	7 GB partition contains Windows 2000 and the LOGIQworks application software
Drive D	230 GB partition contains DICOM Data
Drive E	Temporary drive for SME Option
Drive F	USB HDD contains user and software settings
Drive G	CD/DVD RW Drive used with the SME option to store DICOM data

Table 5-4 Description of Drives and Partition of System based on Dell Precision 370, Dell Precision 380 and Dell Precision 390

Drive	Partition
Drive A	3.5” Floppy Disc
Drive B	N/A
Drive C	7 GB partition contains Windows XP and the LOGIQworks application software
Drive D	230 GB partition contains DICOM Data
Drive E	Temporary drive for SME Option
Drive F	CD/DVD RW Drive used with the SME option to store DICOM data
Drive G	USB HDD contains user and software settings

5-3-1 Work Station Overview (cont'd)

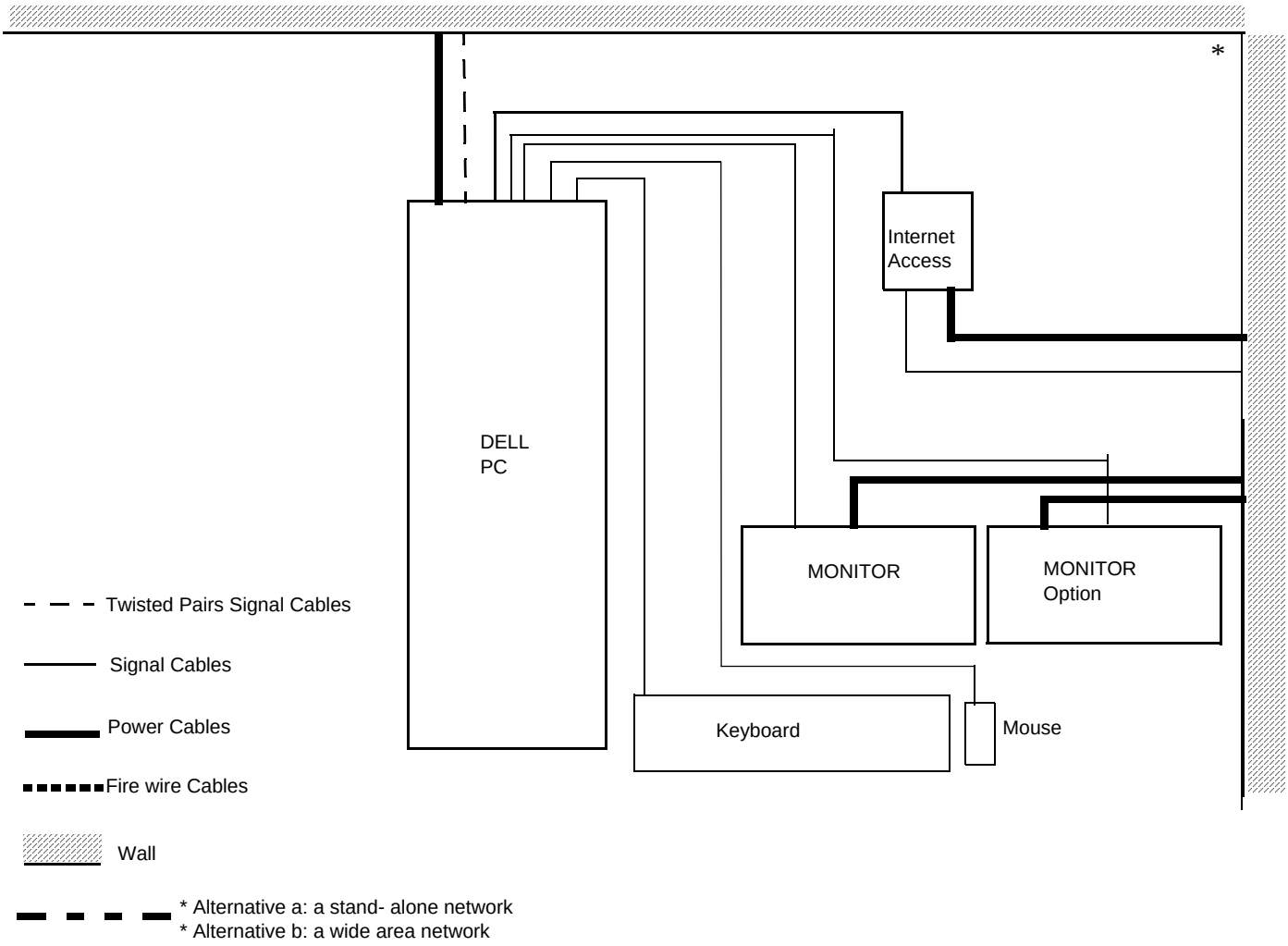


Figure 5-1 Work Station Power and Signal cable Overview

5-3-2 Monitors

5-3-2-1 Technical Specifications, CRT Monitor

- Manufacturer & Model Name: Sony, GDM-F520.
- 21" screen, (19,8" viewable image size)
- maximum resolution 2048 x 1536.
- Aperture Grille pitch 0.22 mm
- Refresh Rate: 48 to 170 Hz
- Horizontal Scan Range: 30kHz to 137kHz
- Visual Area 404 (H) x 302 (V) mm
- Size (WxHxD): 19.6” x 19.6” x 19.2”/ 497 x 499 x 487 mm.
- Weight: 67.4 lbs/ 30.5 kg
- Power: Operation < 145watts, active off< 3 watts

5-3-2-2 Technical Specifications, LCD Monitor

- Manufacturer & Model Name: NEC LCD 1880SX-BK
- 18.1" screen, 0.297x 0297 mm pixel pitch
- Visual Area 359 (H) x 287 (V) mm
- 16,7 million colors
- native recommended resolution: 1280 x 1024 @ 60Hz
- Refresh rate: 50 to 85 Hz
- Horizontal Scan Range: 31kHz to 82kHz
- Viewing Angle: Horizontal: 85°, (left, right, up, down)
- Active Display Size359(h) x 302(v) mm
- Size (WxHxD): 15.2” x 15.5-19,9” x 7.1” / 387 x 394.3-504.3x179.6 mm
- Weight: 18.11 lbs/ 8.2 kg
- Power: Operation 50 watts, active off < 1-1.8 watts

5-3-2-3 Technical Specifications, LCD Monitor

- Manufacturer & Model Name: DELL LCD 1901/2001
- 19" screen, 0.297x 0297 mm pixel pitch
- 16,7 million colors
- native recommended resolution: 1280 x 1024 @ 60Hz/1600x1200 @ 60Hz
- Refresh rate: 56 to 76 Hz
- Horizontal Scan Range: 30kHz to 80kHz
- Viewing Angle: Horizontal: 85°, (left, right, up, down)
- Active Display Size359(h) x 302(v) mm
- Size (WxHxD): 15.2” x 15.5-19,9” x 7.1” / 387 x 394.3-504.3x179.6 mm
- Weight: 16.19 lbs/ 7.35 kg
- Power: Operation 50 watts, active off < 1-1.8 watts

5-3-2-4 Theoretical Description of System based on Dell Precision 340

The Monitors receive a video signal from the PC.

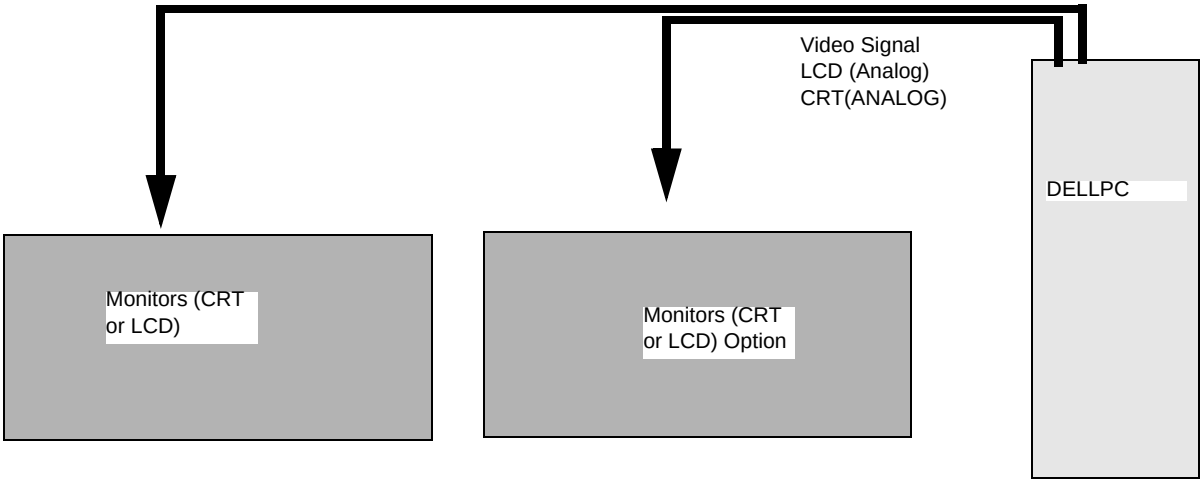


Figure 5-2 Monitors Power and Signal cabling information

5-3-2-5 Theoretical Description of System based on Dell Precision 360, 370, 380, 390

The Monitors receive a video signal from the PC.

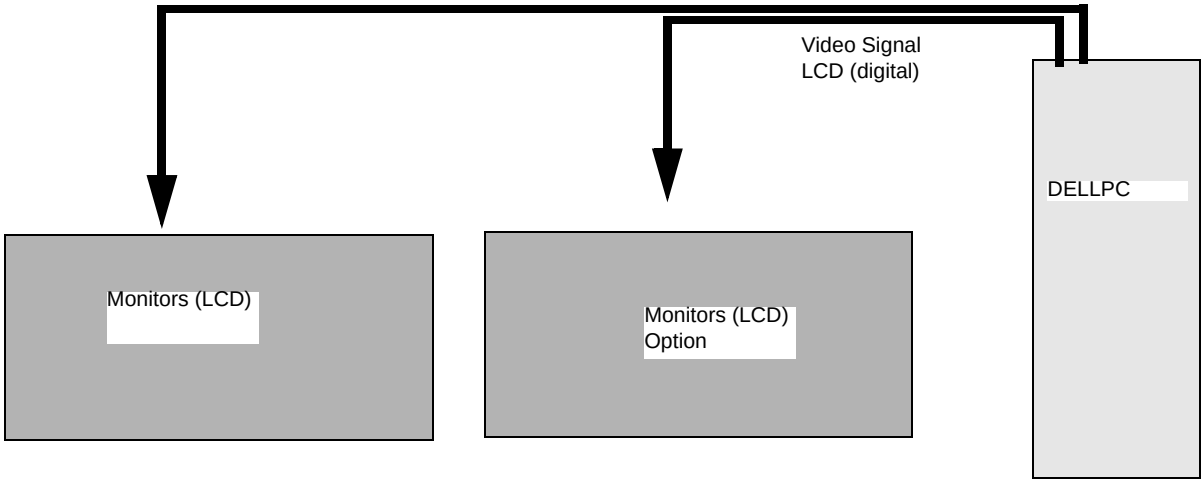


Figure 5-3 Monitors Power and Signal cabling information.

5-3-3 Dell PC

5-3-3-1 Technical Specifications, Dell Precision Workstation

- Main Processor - Pentium IV, 2.6 GHz
- Hard Disk Capacity 120 GB or 250GB
- DVD +R/RW, for S/W Upgrade
- 1024 MB RAM
- 3 1/2 “Floppy Disk, 1.44MB, for download data
- Size (WxHxD): 4.1” x 7.7” x 17.5”/ 106x181x447 mm
- Weight: Approximately 18 lbs/40 kg to 157 lbs/71 kg

5-3-3-2 Theoretical Description

The PC receives input power from wall outlet. It has TCP/IP communications via a local ethernet network. It has online TCP/IP communications via a Modem. It is Fire wire (IEEE1394) interfaced with an external DVD Writer It delivers Digital Output to a LCD monitor.

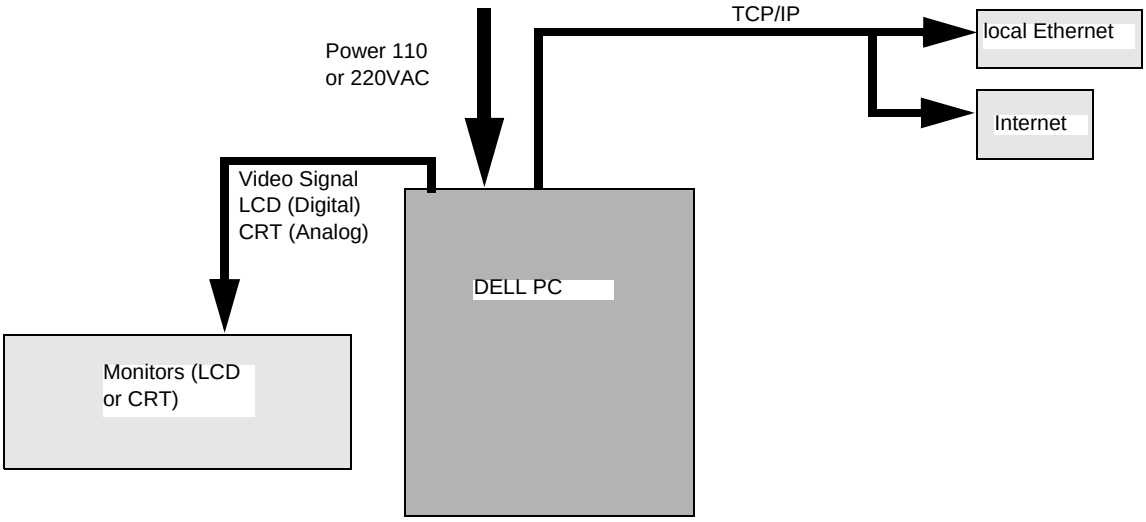


Figure 5-4 Dell PC Power and Signal cabling information

5-3-4 Keyboard & Mouse

5-3-4-1 Theoretical Description

With the keyboard and mouse controls, functions and text are entered and sent to the PC. There they are interpreted and translated into digital or analog signal and presented on the monitor.

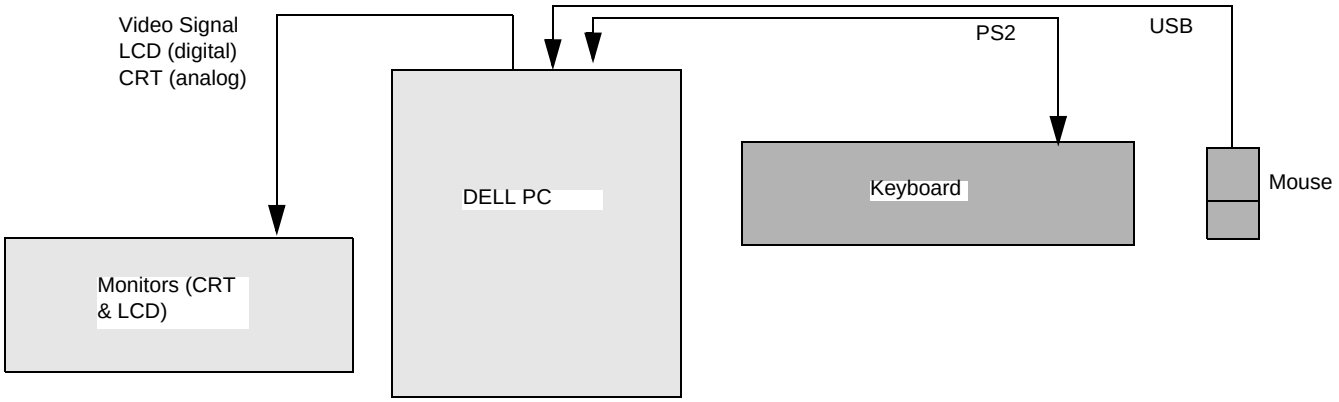


Figure 5-5 Keyboard & Mouse Signal cabling information

5-3-5 Modem (optional)

5-3-5-1 Technical Specifications, Modem Unit

- Manufacturer & Model Name: MultiTech Systems, Multi Modem ZBA
- 56k Modem
- Data Format: serial, binary, asynchronous
- Flow control XON/XOFF (software), RTS/CTS (hardware)
- Size (WxHxD): 4.3” x 1.2” x 5.8” / 10.8 x 2.9 x 14.8 cm
- Weight: 0.5 lbs/ 0.22 kg

5-3-5-2 Theoretical Description

The Modem Receives power via a dedicated wall outlet. It is the telephonic link between the work station and the GE online centre. It communicates with the PC over an RS232 interface.

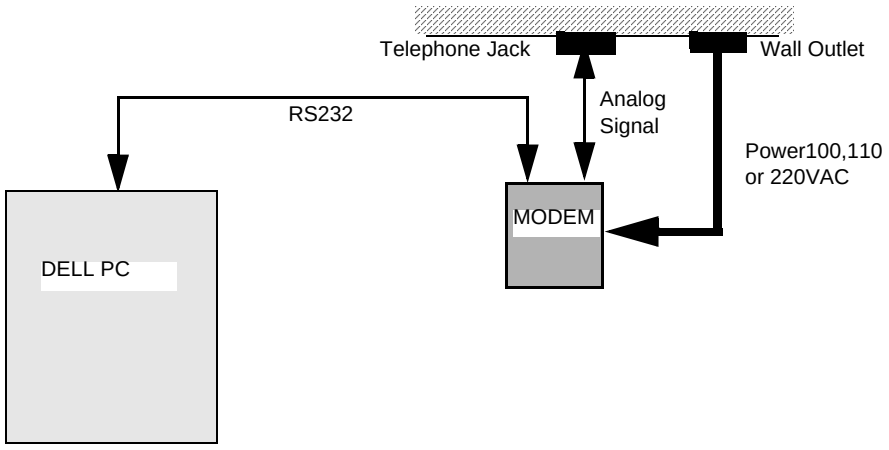


Figure 5-6 Modem Power and Signal cabling information

5-3-5-2 Theoretical Description (cont'd)

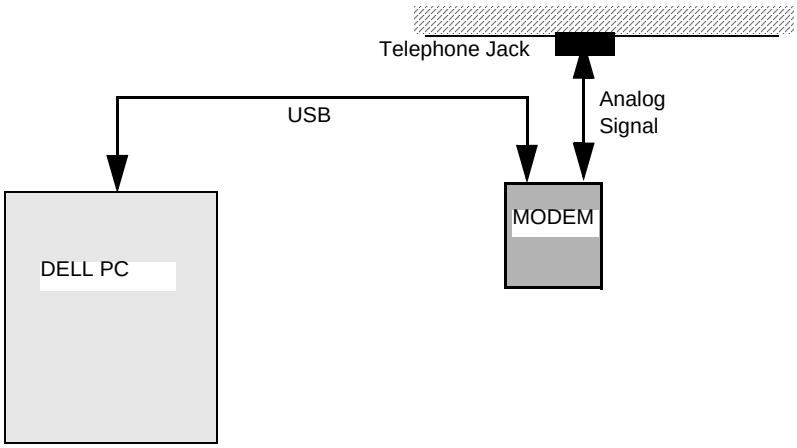


Figure 5-7 Modem Signal cabling information of the USB Modem

5-3-6 USB HDD

5-3-6-1 Technical Specifications USB

- Manufacturer: DELL
- Interface: USB
- Capacity: 64MB

5-3-6-2 Theoretical descriptions

The USB HDD receives power from the USB interface. It has read/write communications with the PC over a USB interface.

.

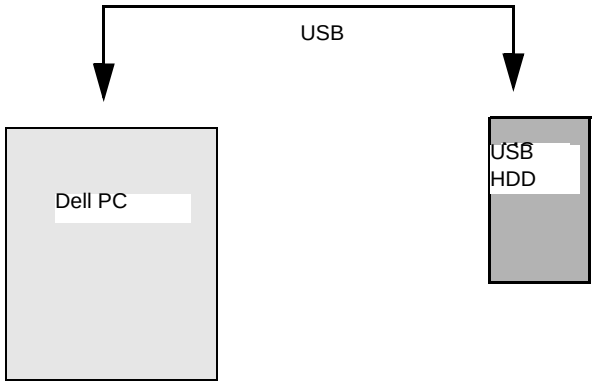


Figure 5-8 USB HDD Signal cabling information

Section 5-4
Software Theory

5-4-1 Software Theoretics

LOGIQworks is a standard PC application. It runs on the same operating system that is globally chosen by GE for all its cardiac and radiology products. LOGIQworks is a combination of the proven RadWorks (Centricity RA600 review workstation) multi-modality platform and GE's TruAccess technology. In other words it contains a TruAccess raw data processing software plugin based on the same application that is installed and runs on the PC back end within GE Radiology Ultrasound Scanners such as LOGIQ 9 and LOGIQ 7.

Transferred studies, images and cine loops in DICOM and Raw data formats will appear in the Data Selector, the "home base" when using LOGIQworks. The Data Selector lets you manage your images and patient studies and load them from local and remote DICOM 3.0 compliant storage devices.

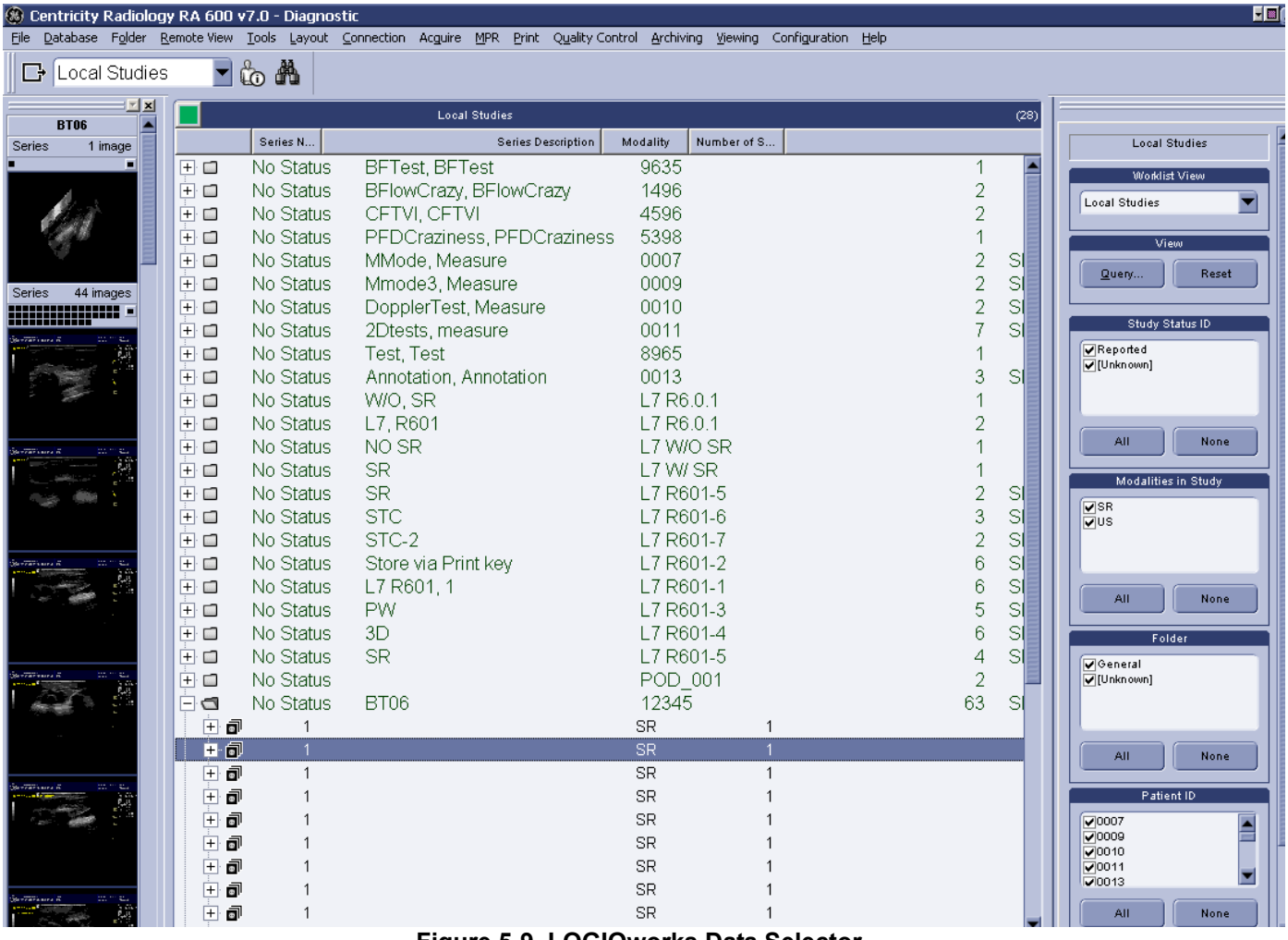


Figure 5-9 LOGIQworks Data Selector

5-4-1 Software Theoretics (cont'd)

The application handles DICOM 3.0 compliant data for all modalities. Also it is able to store, transfer and re-send DICOM 3.0 compliant data that includes GE Ultrasound Raw data in private DICOM data elements.

To open a study for viewing, you can select all the series within a study, a particular series or even an individual image. Or you select multiple patients, studies, series or images which are all to be opened for viewing.

Double click on the selected study, series or images or right click on the selection and press View from the right-click-menu.

When the data is opened for viewing you get to the viewing section of LOGIQworks. At this time you are still working in the RadWorks part of LOGIQworks, where only the DICOM standard image data is displayed.

5-4-1 Software Theoretics (cont'd)

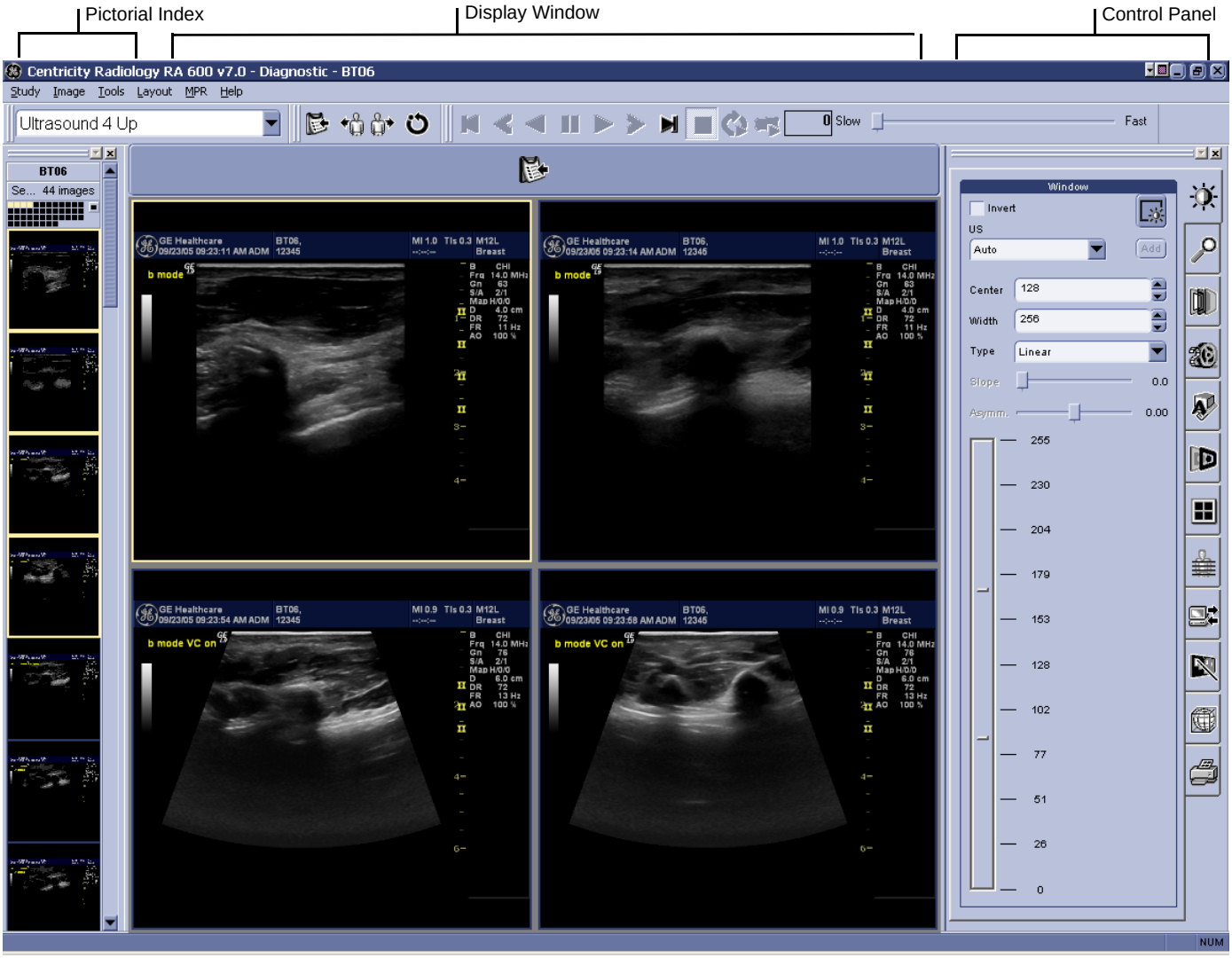


Figure 5-10 LOGIQworks Viewing Section

When in this Viewing Section of LOGIQworks, there are many possible layouts or hanging protocols that can be used to show your information.

5-4-1 Software Theoretics (cont'd)

One of them is the TruAccess hanging protocol:

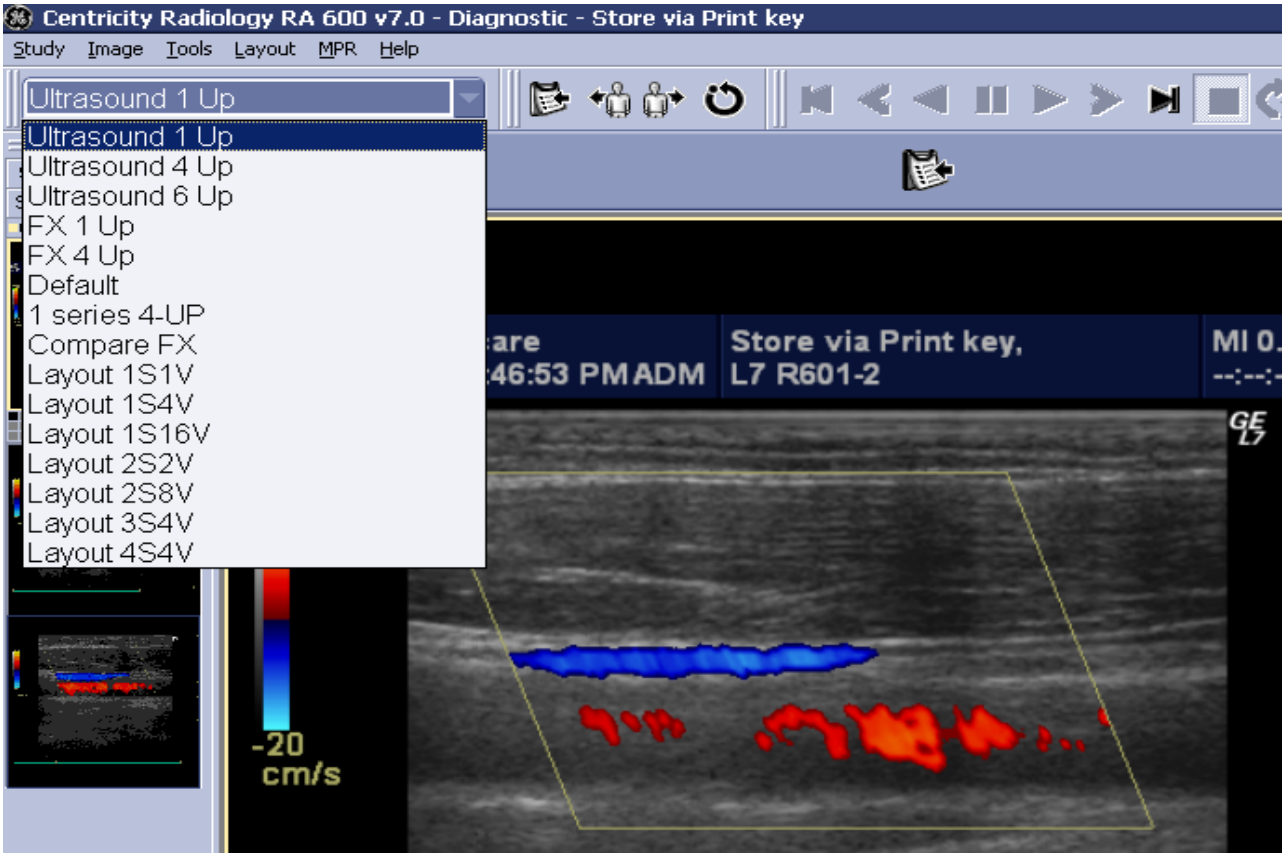


Figure 5-11 TruAccess Hanging Protocol

When you are viewing images from GE's LOGIQ 7 and LOGIQ 9 ultrasound scanners that contain GE's TruAccess Raw Data you can select this TruAccess hanging protocol to activate the TruAccess Raw Data Processing Plugin. When the plugin is started the Ultrasound Raw Data information is read from the private DICOM elements of the selected DICOM image and you have access to the same image manipulation functionality as on the ultrasound scanners.

5-4-1 Software Theoretics (cont'd)

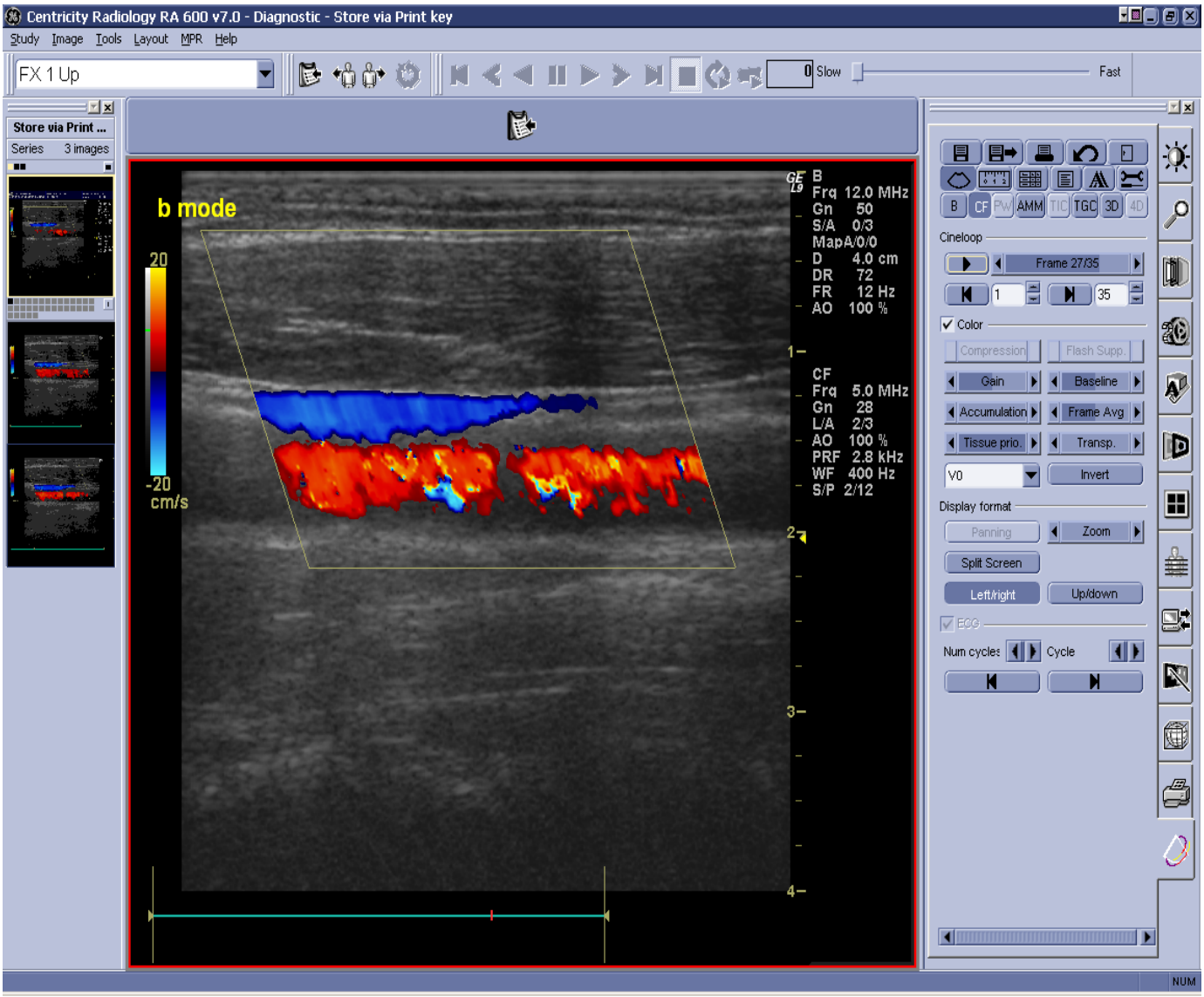


Figure 5-12 TruAccess Plugin

From the LOGIQworks TruAccess plugin images can be saved back to the local database in DICOM Secondary Capture format. They will be stored in a new series to the same study. As an alternative they can be also explicitly saved to disk either as AVI, JPEG, RawDICOM or DICOM.

5-4-1 Software Theoretics (cont'd)

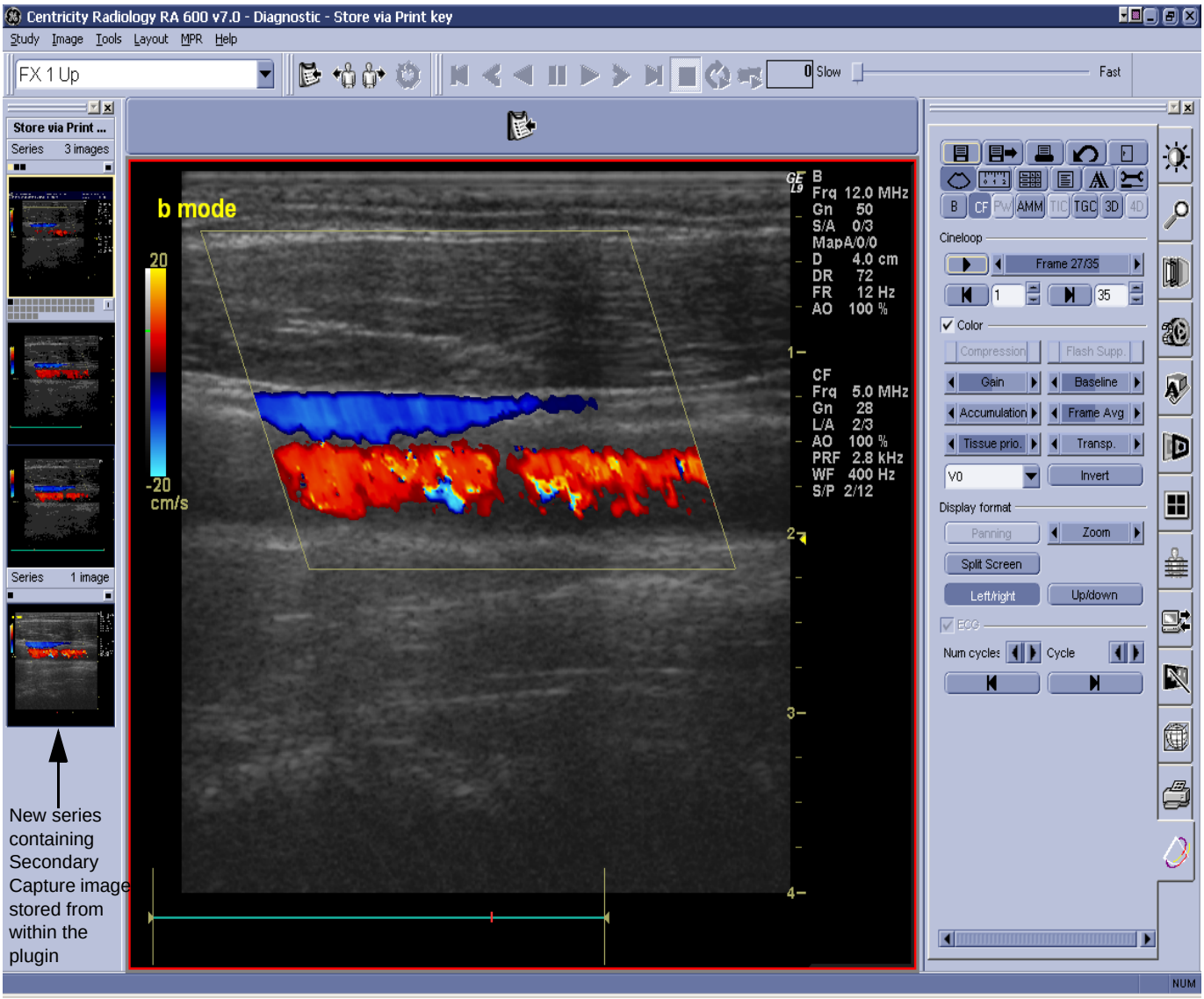


Figure 5-13 Pictorial Index after Storing an image from the TruAccess plugin

5-4-1 Software Theoretics (cont'd)

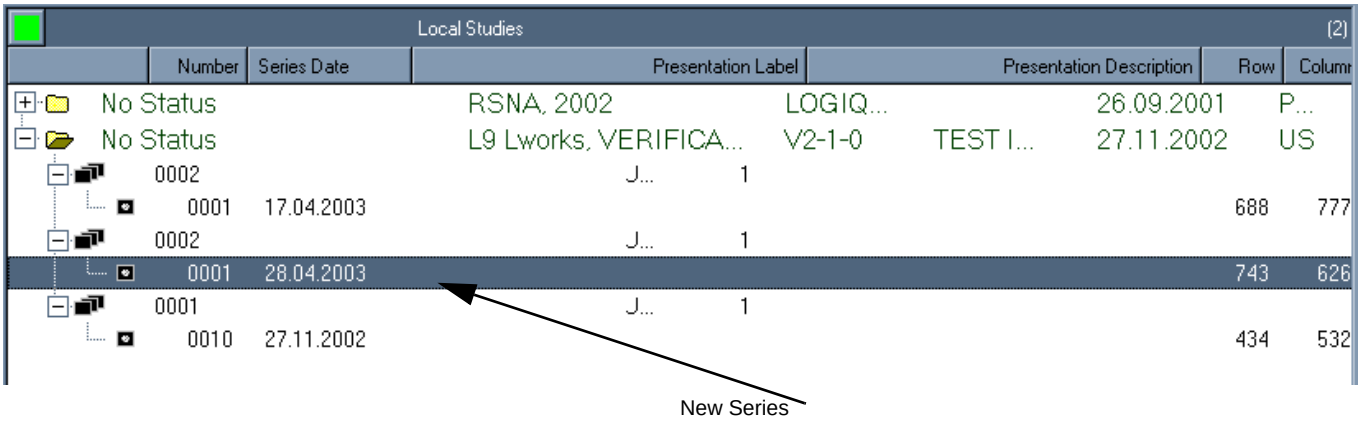


Figure 5-14 Data Selector with new series

As an alternative they can also be explicitly saved to disk either as AVI, JPEG, RawDICOM or DICOM.

5-4-2 Services

The DICOM services consist of 3 different services: front end application, the connection service and the print service. All three are implemented as separate Windows services that run as background processes. All 3 services have dedicated user accounts they will use to log on.

Table 5-5 LOGIQworks Services

Services	User Account
AMI Database	DB-Service
AMI Connection	CN-Service
AMI Print	PR-Service

All 3 users are belonging to the RW-Service Group.

NOTE *Please make sure that the properties of these users are never changed! Never remove one of these users from the user manager. They are essential for the proper functioning of the LOGIQworks system.*

They are all started automatically during system start-up and will remain active until shutdown. That means, that requests for e.g. image storage can be accepted at all times when the system is up and running, regardless of whether the LOGIQworks application is active or not.

The connection service is responsible for image reception and transmission in addition to accepting requests for database queries and retrieves. It maintains logs of all studies that entered and left the system. It can perform scheduled image transfers to remote Application Entities at all times. The LOGIQworks front-end application issues queries to remote DICOM databases and initiates import requests. Please note that the destination of imports is the LOGIQworks Connection Service.

The LOGIQworks Print Service is responsible for managing print job queues for one or more printers or laser imagers. It supports several protocols of which the DICOM standard is one. Please note that the print service is an optional component of the LOGIQworks installation.

5-4-2 Services (cont'd)

The Database and Connection Services are integral parts of a LOGIQworks installation.

In addition to the Storage SOP Class support for networking, LOGIQworks also supports the Media Storage Service Class for the Interchange of images as a File Set Reader (FSR) and File Set Creator (FSC). FSR is a standard feature and FSC is an optional feature.

5-4-3 Functional Definitions of Application Entities

The Application Entity of the LOGIQworks Connection Service acts as an SCU for the verification, storage, and storage commitment SOP classes and as an SCP for verification, storage, query, retrieve, and storage commitment SOP classes.

The Application Entity of the LOGIQworks front-end application acts as an SCU for the query and retrieve SOP classes.

The Application Entity of the LOGIQworks Print Service acts as an SCU for the basic gray scale and color print management meta SOP classes, and optionally the Print Job and Basic Annotation Box SOP classes.

5-4-4 Number of associations

The LOGIQworks Connection Service supports multiple associations both as an SCU and SCP. By default the maximum number of simultaneous associations that the Connection Service will support as an SCP is 4.

Please refer to RadWorks 6.0 Installation Guide, page 54, Configuring teleradiology section, Setting up the Connection Service.

When receiving images or processing query and retrieve requests as an SCP the Connection Service will start a new thread for each association that is being handled. As an SCU the Connection Service also supports multiple associations, for instance to verify a remote destination and simultaneously send images to a storage SCP.

The LOGIQworks front-end application supports multiple associations as an SCU for query and retrieve to different SCPs. Multiple queries and/or retrieves to the same SCP will be performed sequentially.

The LOGIQworks Print Service will queue multiple print jobs such that it only establishes one association as an SCU at a time when it manages multiple laser imagers via DICOM.

The LOGIQworks DICOM services do not support asynchronous operations and will not perform asynchronous window negotiation.

5-4-5 Auto-routing

LOGIQworks allows image transfers to be scheduled for specific times and has mechanisms for retrying a transfer in case that a transfer failed at an earlier time. After a configured number of unsuccessful attempts LOGIQworks will mark the transfer as failed. The LOGIQworks system keeps a log of transfers that is viewable by the user. The log indicates the status of transfers.

LOGIQworks provides full (level 2) conformance as SCP of the Storage SOP class. This means that upon sending an image received via DICOM on to another DICOM compliant system it will send out all attributes that it received (this includes private attributes from other vendors).

Please refer to RadWorks 6.0 Installation Guide, page 54, Configuring teleradiology section, Setting up auto-routing.

5-4-6 Query a remote database and retrieve from a remote system

The user of the LOGIQworks system wants to have a view on a remote DICOM database and either views the complete contents of the remote database or fills out a query dialog box with fields for Patient Name, Patient ID, Study date, etc. Wild cards can be used instead of fully specified information to allow flexible queries. The contents of this dialog box and the requested columns in the Remote view can be fully configured, hence the contents of the Query data is dependent on the configuration.

After a view on a remote DICOM database has been obtained the user makes a selection of one or more studies, series or images and subsequently presses the Import button. This will initiate the transfer of images from the remote system to the local database of LOGIQworks.

Please refer to RadWorks 6.0 User's Guide, page 55.

Note that the LOGIQworks front-end application performs the C-MOVE operation while the destination of the resulting C-STORE operation is the LOGIQworks Connection Service

5-4-7 Print management

The LOGIQworks user selects a study in the local database and submits it to the Print Service as a job for the desired laser imager. The user can choose several parameters such as the layout of the film and number of copies. Or the LOGIQworks user creates a Virtual Film Sheet print job from the studies available in the Viewing module and submits it as a job for the desired laser imager. On a per-image or per-sheet basis several parameters can be altered. When submitting the job the user can choose a few parameters, such as the number of copies.

The LOGIQworks Print Service is able to send the appropriate data to printers that support True Size printing, both for gray scale printers and color printers. The LOGIQworks Print Service will send the pixel data in its native size and additionally sends the Requested Image Size, which is considered to be a request to the Print SCP to Print at that size.

Please note that there is no formal way in DICOM to verify whether a DICOM Print SCP actually supports True Size printing, and that some Print SCPs do not report a failure when the Requested Image Size was requested by the SCU but not supported by the SCP.

As a result LOGIQworks Print Service can be configured in a way that it seems that images will be printed True Size, while they are just printed at a different size. It is up to the system integrator to verify from the printer's DICOM conformance Statement whether that printer supports True Size printing, before setting the True Size option in the configuration for that particular printer.

Please refer to RadWorks 6.0 Installation Guide, page 140, Configuring Printing.

5-4-8 Overview of supported DICOM services

For an exhaustive overview of the supported DICOM services please refer to the LOGIQworks DICOM Conformance Statement for DICOM V3.0 Direction 2361950-100.(DCS LOGIQworks Rev0.pdf)

5-4-9 TruAccess Raw data processing

The LOGIQworks workstation offers extended image manipulation capabilities on GE Ultrasound Raw DICOM images. While in the viewing section screen, the user gets access to these functions by selecting the TruAccess Raw data processing plug in definition. Plug in access is only available when configured in the plug in definition screen;

Please refer to Section 3-5-2-1 "TruAccess Plugin Definition" on page 3-79 for plugin definition and to Section 4-3-2 "Application Level Check" on page 4-8 for application specific.

5-4-10 Keyboard Shortcuts

Table 5-6 Overview of LOGIQworks Shortcut checks

Step	Check	Expected Result
1	Press the CTRL + Q key when in Data Selector.	Perform a query. Query Parameters dialog box pops up.
2	Press the CTRL + I key when in Data Selector.	View information
3	Press the CTRL + O key when in Data Selector.	Open folder in study or patient view.
4	Press the CTRL + C key when in Data Selector.	Close folder in study or patient view.
5	Press ALT + L, T when in Quality Control or viewing.	Hide/Show tool tabs.
6	Press ALT + L, P when in Quality Control or viewing.	Hide/Show Pictorial Index.
7	Press ALT + L, R when in viewing.	Hide/Show Reports window.
8	Press ALT + L, D when in Quality Control or viewing.	Hide/Show local database window.
8	Press ALT + Q, R when in Quality Control.	Reset images to original state.
9	Press ALT + Q, B when in Quality Control.	Go back to Data Selector.
‘10	Press ALT + Q, E when in Quality Control.	Edit demographics.
11	Press ALT + Q, M when in Quality Control.	Match
12	Press ALT + Q, H when in Quality Control.	Study status history.
13	Press ALT + Q, D when in Quality Control.	Show Data Selector.
14	Press ALT + Q, W when in Quality Control.	Show work list.
15	Press ALT + M, D when in Quality Control.	Remove (delete) series.
16	Press ALT + M, I when in Quality Control.	Insert as series.
17	Press ALT + M, N when in Quality Control.	Insert as images.
18	Press ALT + M, P when in Quality Control.	Set patient orientation.
19	Press ALT + Q, S when in Quality Control.	Save changes to study.
20	Press ALT + L, T when in viewing.	Hide/Show tool tabs.
21	Press ALT + S, S, V when in viewing.	Set Scope to Viewport.
22	Press ALT + S, S, O when in viewing.	Set Scope to one series.
23	Press ALT + S, S, S when in viewing.	Set Scope to study.
24	Press ALT + S, S, A when in viewing.	Set Scope to all.
25	Press ALT + S, R when in viewing.	Reset images to original state.

Table 5-6 Overview of LOGIQworks Shortcut checks

Step	Check	Expected Result
26	Press ALT + S, L when in viewing.	Load selected study for viewing (and replace current loaded study)
27	Press ALT + S, A when in viewing.	Add study (load selected study to compare with currently loaded study):
28	Press ALT + I, C, U when in viewing.	Select up direction for cine.
29	Press ALT + I, C, D when in viewing.	Select down direction for cine.
30	Press ALT + I, C, B when in viewing.	Select bounce for cine.
31	Press ALT + I, F, H when in viewing.	Flip image horizontally.
32	Press ALT + I, F, V when in viewing.	Flip image vertically.
33	Press ALT + I, F, L when in viewing.	Rotate 90° to left.
34	Press ALT + I, F, R when in viewing.	Rotate 90° to right.
35	Press ALT + I, A, C, M when in viewing.	Create marker.
36	Press ALT + I, A, C, T when in viewing.	Create annotation text.
37	Press ALT + I, A, C, D when in viewing.	Create distance indicator.
38	Press ALT + I, A, O when in viewing.	Show image annotation (if previously created).
39	Press ALT + I, Q, L when in viewing.	Select linear interpolation for zoom.
40	Press ALT + I, W, I when in viewing.	Invert image.
41	Press ALT + I, W, R when in viewing.	Create ROI for windowing.
42	Press ALT + I, W, T, L when in viewing.	Select linear windowing function.
43	Press ALT + I, W, T, E when in viewing.	Select exponential windowing function.
44	Press ALT + I, W, T, O when in viewing.	Select logarithmic windowing function.
45	Press ALT + I, W, T, when in viewing.	Select sigmoid windowing function.
46	Press ALT + I, F, Right Arrow then Down Arrow plus [Enter] when in viewing.	Select image filter option.
47	Press ALT + I, C, C, Right Arrow when in viewing.	Select cutlines option.
48	Press ALT + S, P when in viewing.	Load previous study in selection.
49	Press ALT + S, N when in viewing.	Load next study in selection.
50	Press ALT + S, B when in viewing.	Go back to Data Selector.
51	Press ALT + I, Z, 1 thru 4 followed by [Enter] when in viewing.	Select zoom factor of 1 to 4
52	Press ALT + I, Z, T when in viewing.	Show images at true size
53	Press ALT + I, Z, M when in viewing.	Create magnifying glass.

Table 5-6 Overview of LOGIQworks Shortcut checks

Step	Check	Expected Result
54	Press ALT + I, C, O when in viewing.	Start cine.
55	Press ALT + I, C, M when in viewing.	Create manual cine
56	Press ALT + I, C, F when in viewing.	Stop cine.
57	Press ALT + I, A, C, R when in viewing.	Create profile.
58	Press ALT + I, A, C, B when in viewing.	Create box ROI.
59	Press ALT + I, A, C, E when in viewing.	Create elliptical ROI
60	Press ALT + I, A, C, R when in viewing.	Create freehand ROI
61	Press ALT + I, A, C, O when in viewing.	Create polygon ROI
62	Press ALT + I, A, C, A when in viewing.	Create angle.
63	Press ALT + I, A, F when in viewing.	Display full annotation.
64	Press ALT + I, A, B when in viewing.	Display basic annotation.
65	Press ALT + I, A, N when in viewing.	Display no annotation.
66	Press ALT + I, K, K or CTRL + Left mouse button when in viewing.	Mark as key image.
67	Press ALT + I, K, O when in viewing.	Show key images only.
68	Press ALT + I, I when in viewing.	Show DICOM info
69	Press ALT + I, C, C, C when in viewing.	Copy image in viewport to windows clipboard.
70	Press ALT + I, T when in viewing.	Export image in viewport as TIFF.
71	Press ALT + T when in TruAccess Plugin - Measure Mode	Toggle between Measure Menu and TruAccess Control tab.
72	Press ESC key in all TruAcces menus and dialogs	Get out of the menu/dialog
73	Press ESC key when in TruAccess Worksheet	Exit and go to Review Screen

5-4-11 Workstation Directory Tree of LOGIQworks up to Revision 1.3

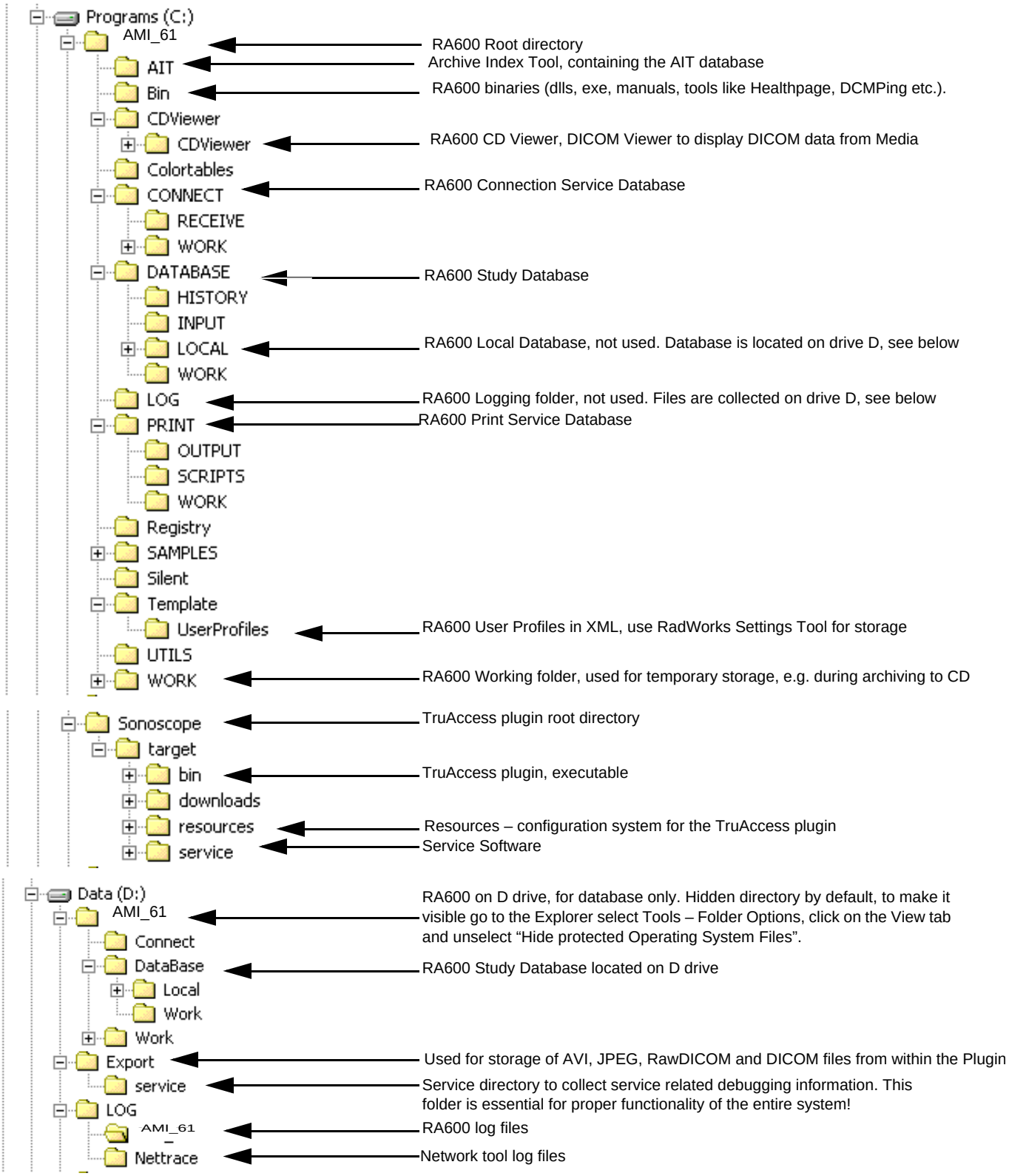


Figure 5-15 Workstation Directory Tree

5-4-12 Workstation Directory Tree of LOGIQworks 2.0 and 3.0

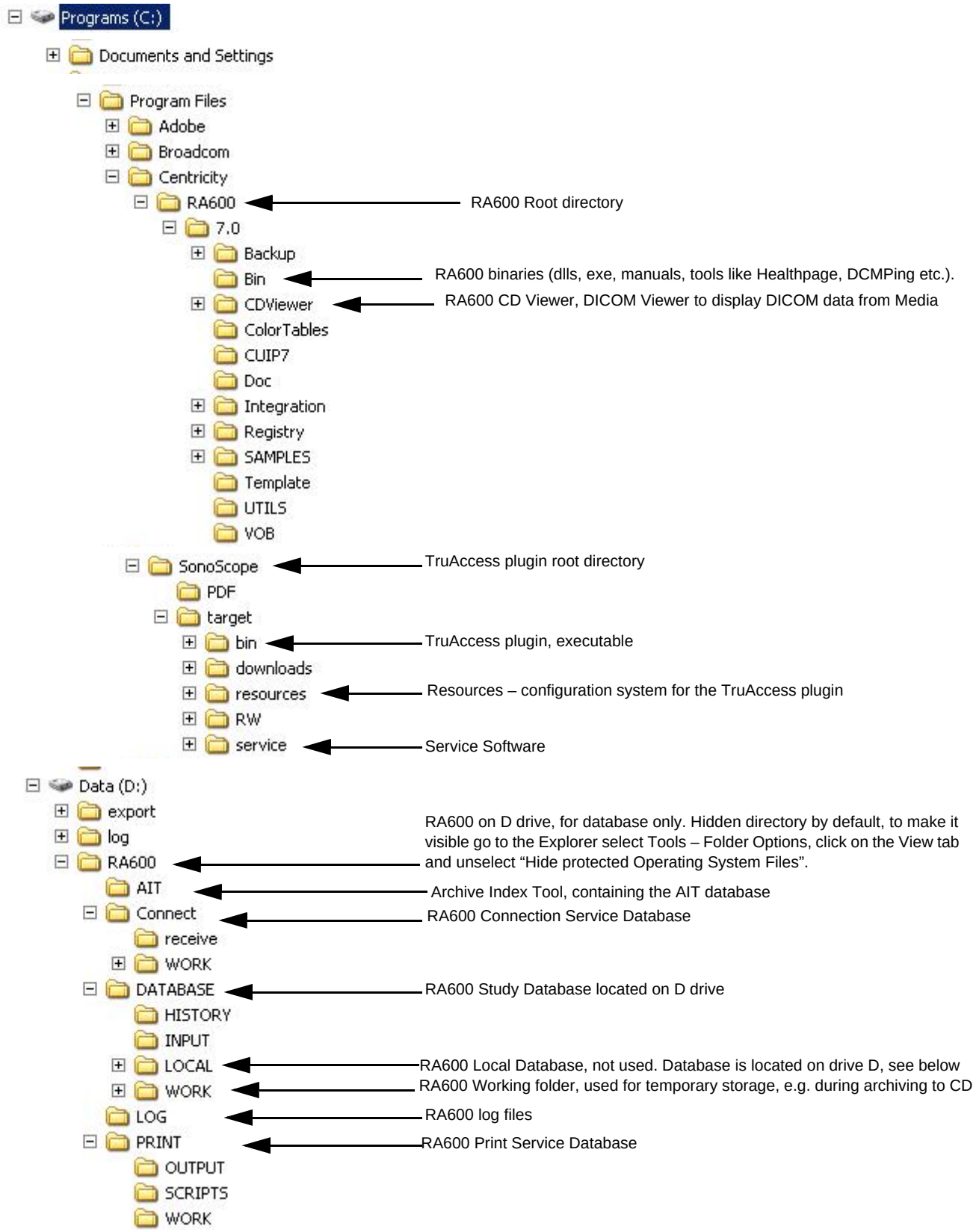


Figure 5-16 Workstation Directory Tree

Section 5-5
Common Service Interface

5-5-1 Introduction

The Service Platform contains a set of software modules that are common to all ultrasound and cardiology systems containing a PC back end. This web-enabled technology provides linkage to e-Services, e-Commerce, and the iCenter, making GE's scanners more e-enabled than ever. The Service Platform will increase service productivity and reduce training and service costs.

5-5-2 *iLinq* Interactive Platform Features

Many of the services of the Common Service Platform come from its integration with *iLinq*. The following sections contain a brief introduction of *iLinq's* features.

5-5-2-1 Web Server/Browser

The Service platform and other Service software use the *iLinq* web server and Netscape browser.

5-5-2-2 Connectivity*

This feature provides basic connectivity between the scanner and the OnLine Center (OLC).

5-5-2-3 Configuration

This feature provides for the interfaces to configure various *iLinq* parameters.

5-5-2-4 Contact GE

Allows for an on-screen one-touch button used to contact the OnLine Center and describe problems with their scanner in an easy and convenient way.

5-5-2-5 Interactive Application

The main application is displayed in the form of HTML pages whenever the Netscape browser starts. This is the entry point for any user to start any *iLinq* application.

NOTE **These features that allow the customer to contact the GE OnLine Center are available for Warranty and Contract customers only.*

5-5-3 Global Service User Interface (GSUI)

5-5-3-1 Internationalization

The user interface provided by the service platform is designed for GE personnel and as such is in English only. There is no multi-lingual capability built into the Service Interface.

5-5-3-2 Service Login

Select the wrench icon in the Windows task bar at the bottom of the screen.

This icon links the user or the Field Engineer (FE) to the service login screen.

Figure 5-17 Login Screen for Global Service User Interface

5-5-3-3 Access / Security

The service interface has different access and security user levels. Each user is only granted access to the tools that are authorized for their use.

NOTE *OnLine Center access to the workstation requires the password and they must have **"Disruptive"** permission and customer input to run diagnostics.*

Table 5-7 Service Login User Levels

User Level	Access Authorization	Password
Operator Administrator External Service	Authorized access to specified diagnostics, error logs and utilities. Same acquisition diagnostic tests as GE Service.	uls uls gogems

NOTE *For a GE Field Engineer, the password changes at specific intervals. Access with the password is tied to the service key.*

5-5-3-3 Access / Security (cont'd)

Every access request, whether successful or not, will be logged into a service access log that is viewable to authorized users.

5-5-4 Service Home Page

When the Service Interface is started, the Service Home Page appears. The Home Page contains the software revision along with the hardware inventory and the results of the latest System Health Information. The navigation bar at the top of the screen allows the user to select from several tools and utilities.

5-5-4 Service Home Page (cont'd)

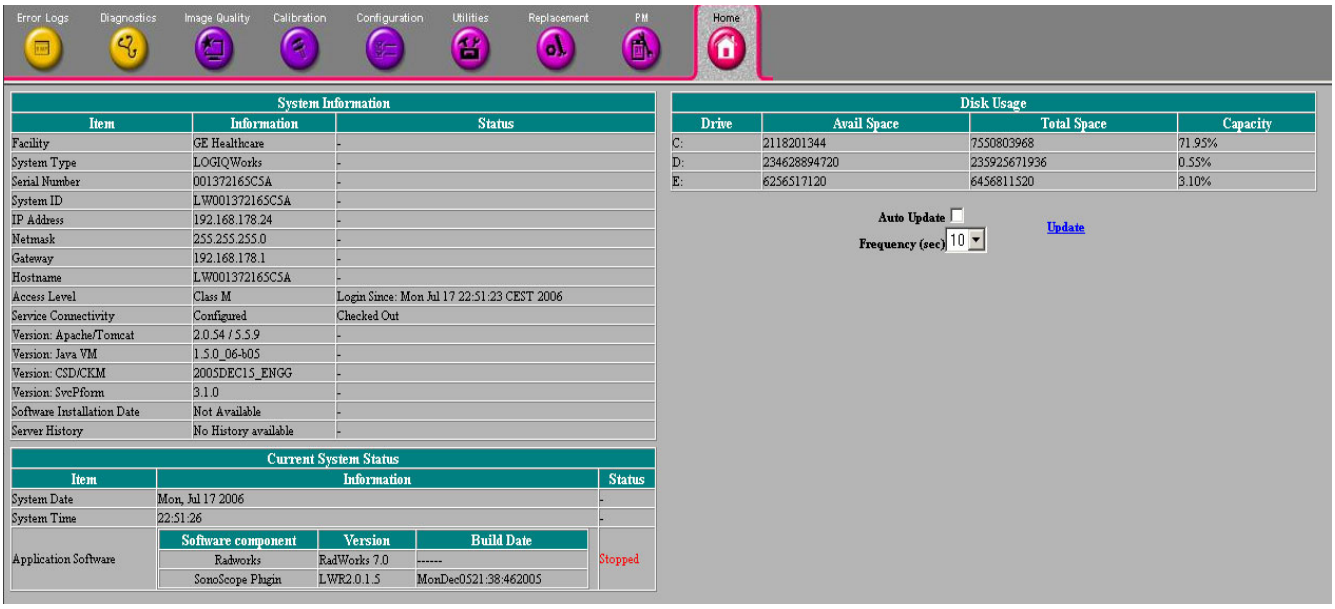


Figure 5-18 Customer Service Home Page

5-5-5 Error Logs Page

In the Error Logs page there are 2 types of Error Logs:

- Error Logs for Centricity
- Error Logs for TruAccess Plugin.

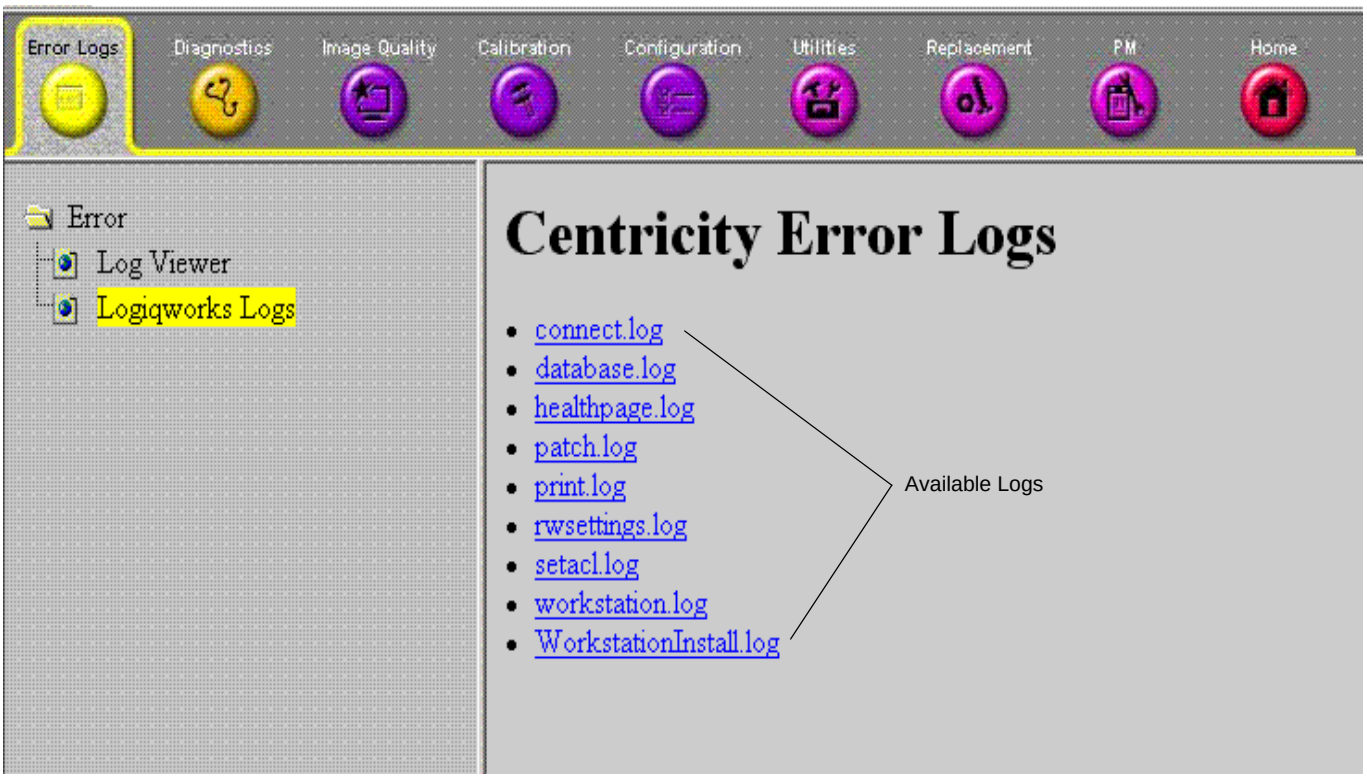


Figure 5-19 Error Logs for Centricity

5-5-5-1 Error Logs for Centricity

Select one of the proposed categories in the list above. There are at least 4 different logs available:

- Connection.LOG
- Database.LOG
- Print.LOG
- RadWorks.LOG

All logs have the same structure and are written in text format. The structure is: date and time followed by a descriptive text. The text is self-explanatory.

Dependent on the settings in LOGIQworks additional logs can be listed.

5-5-5-2 Error Logs for TruAccess

From the Error Logs tab the Log Viewer displays four categories with pull-down sub-menus and an Exit selection. The Service Interface allows scanner logs to be viewed by all service users.

The Filter Error log is keyed to GE Service login access permissions and is not available to customer level analysis.

The log entries are color-coded to identify the error level severity at a glance.

5-5-5-2 Error Logs for TruAccess (cont'd)

Table 5-8 Log Entry Key

Severity	Error Level	Color Code
1	Information	Green
2	Warning	Blue
3	Error	Red

The Service Interface supports the transfer of these logs to local destinations such as the MOD and CD-ROM drive.

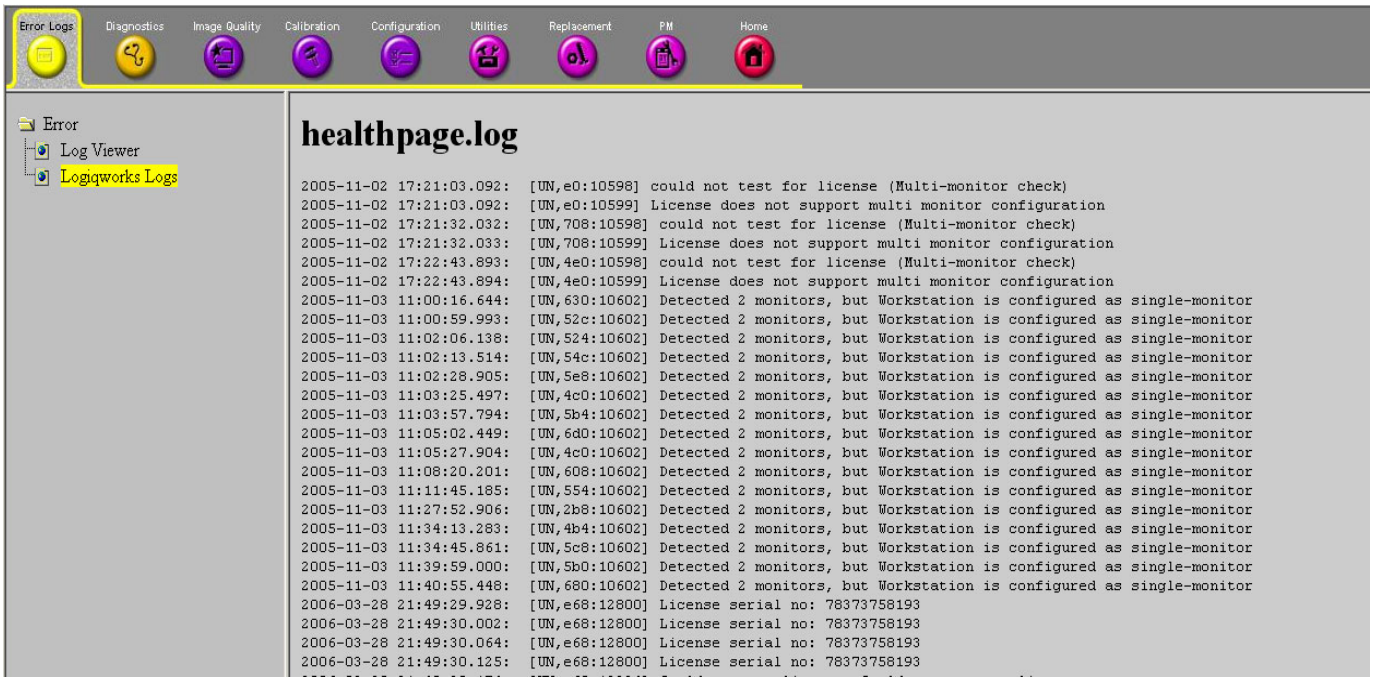


Figure 5-20 Error Logs

5-5-5-2-1 Logs

The seven sub-menus of the Logs category are System, Power, Informatics, Temperature, Probe, Board and DICOM.

NOTE *Figure 5-20 provides a graphical example of the log entries for the **System Logs**.*

Log table headings for the different logs are as follows:

- **System**
  Log entry headings include TimeStamp; Error Level; Package and Error Message.
- **Power**
  Log entry headings include Time Stamp; Error Level; Package and Error Message

5-5-5-2 Error Logs for TruAccess (cont'd)

- **Informatics**

  Log entry headings include TimeStamp; Revision; PtID; PtDOB; PtSex; PtWeight; PtHeight; ExamID; Exam Category; ExamCurDate and ExamStartTime.

- **Temperature**

  Log entry headings include TimeStamp: Error Level; Package; Upper FEC Sensor and Lower FEC Sensor.

- **Probe**

  Log entry headings include TimeStamp; Error Level; Package; Error Message; Severity; Revision and three (3) new labels that have not yet been named.

- **Board**

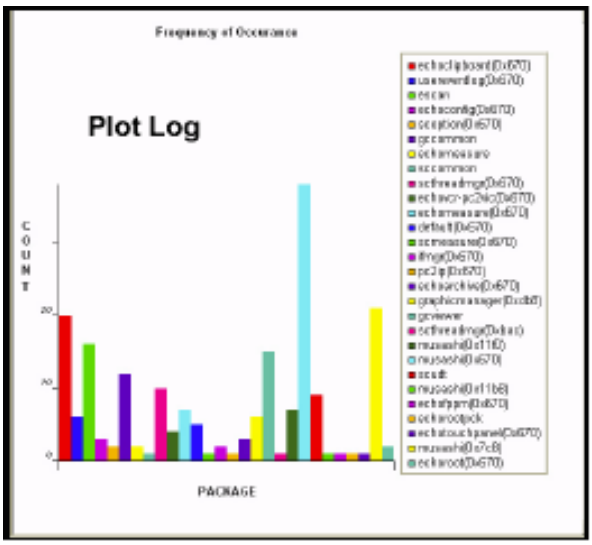
  Log entry headings include TimeStamp; Error Level; Package; Board; Severity and two (2) new labels that have yet been named.

- **DICOM**

  Log entry headings include TimeStamp; Error Level; Package and Error Message.

5-5-5-2-2 Utilities

The two sub-menus of the **Utilities** category are Plot Log and Plot Page.



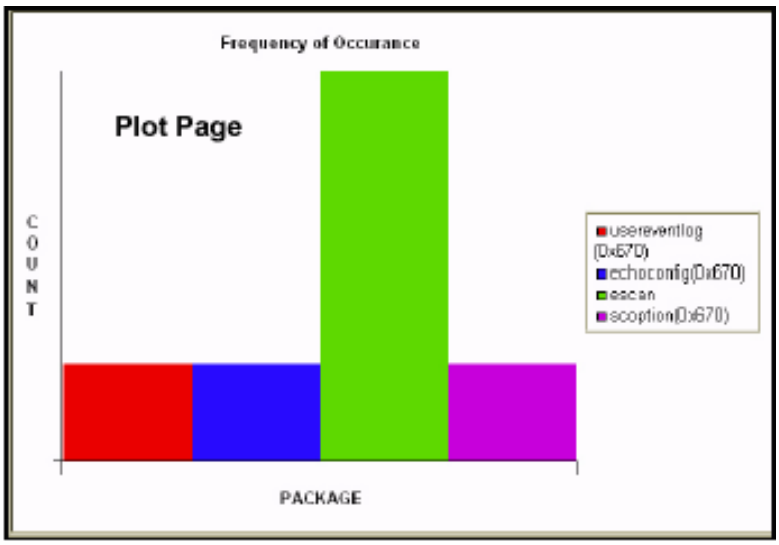


Figure 5-21 Utilities Sub-Menus

- **Plot Log**

  Allows for the color coded plot of all Log contents with the package on the "X" axis and incident count on the "Y" axis.

- **Plot Page**

  Allows for the color coded plot of all Page contents with the package on the "X" axis and incident counts on the "Y" axis.

5-5-5-2 Error Logs for TruAccess (cont'd)

5-5-5-2-3 Exit

The sub-menu, **Exit Log Viewer**, returns the user to the Service Desktop home page.

5-5-5-2 Error Logs for TruAccess (cont'd)

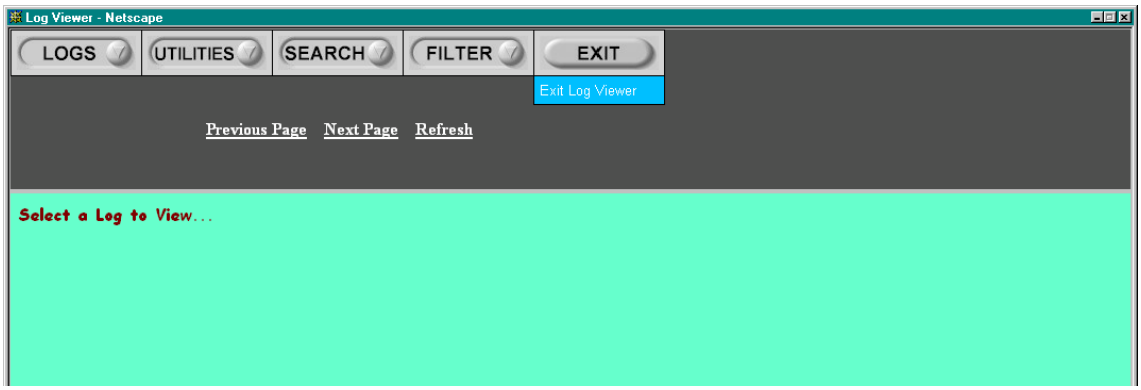


Figure 5-22 Exit Log Sub-Menu

5-5-6 Diagnostics

Detailed **Diagnostic** information is found in Section "Diagnostics/Troubleshooting" on page 7-1

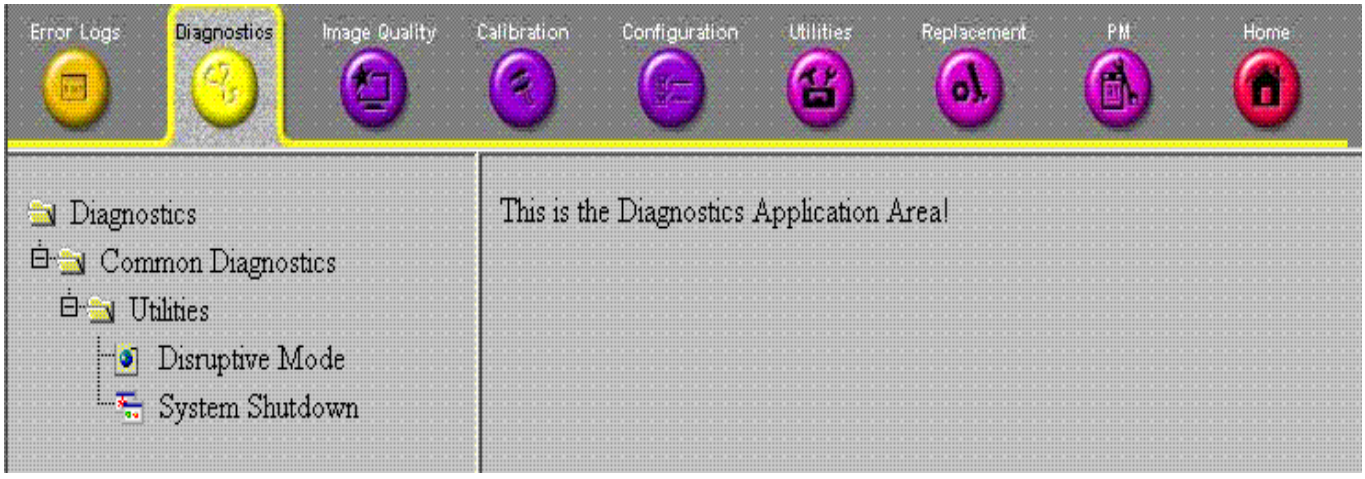


Figure 5-23 GE Service Diagnostic Page

5-5-6-1 Diagnostics Execution

Diagnostic tests are executable by both local and remote users. The Service Platform provides top-level diagnostic selection based on the user's level and login access permissions. Remote access will require disruptive diagnostic permissions to run Acquisition diagnostics.

5-5-6-2 Diagnostic Reports

Diagnostic tests return a report to the Service Platform. The platform retains the report and allows for future viewing of the diagnostic logs.

5-5-6-3 Proactive Diagnostics

A system of self-monitoring is largely supported with the integration of *iLinq*. The scheduler, executive, user interfaces and some of the proactive diagnostic functions are provided by *iLinq*. Other tasks should be provided by the product team.

5-5-7 Image Quality

The Image Quality page is intended to contain tools for troubleshooting image quality issues.

Figure 5-24 Image Quality Page

5-5-8 Calibration

The Calibration page is intended to contain tools used to calibrate the system.

Figure 5-25 Calibration Page

5-5-9 Configuration

The Configuration page is intended to be used to setup various configuration files on the system.

The Service Platform is the access and authorization control for remote access to the configuration subsystem.

The enable/disable of software options can be done from this Configuration page.

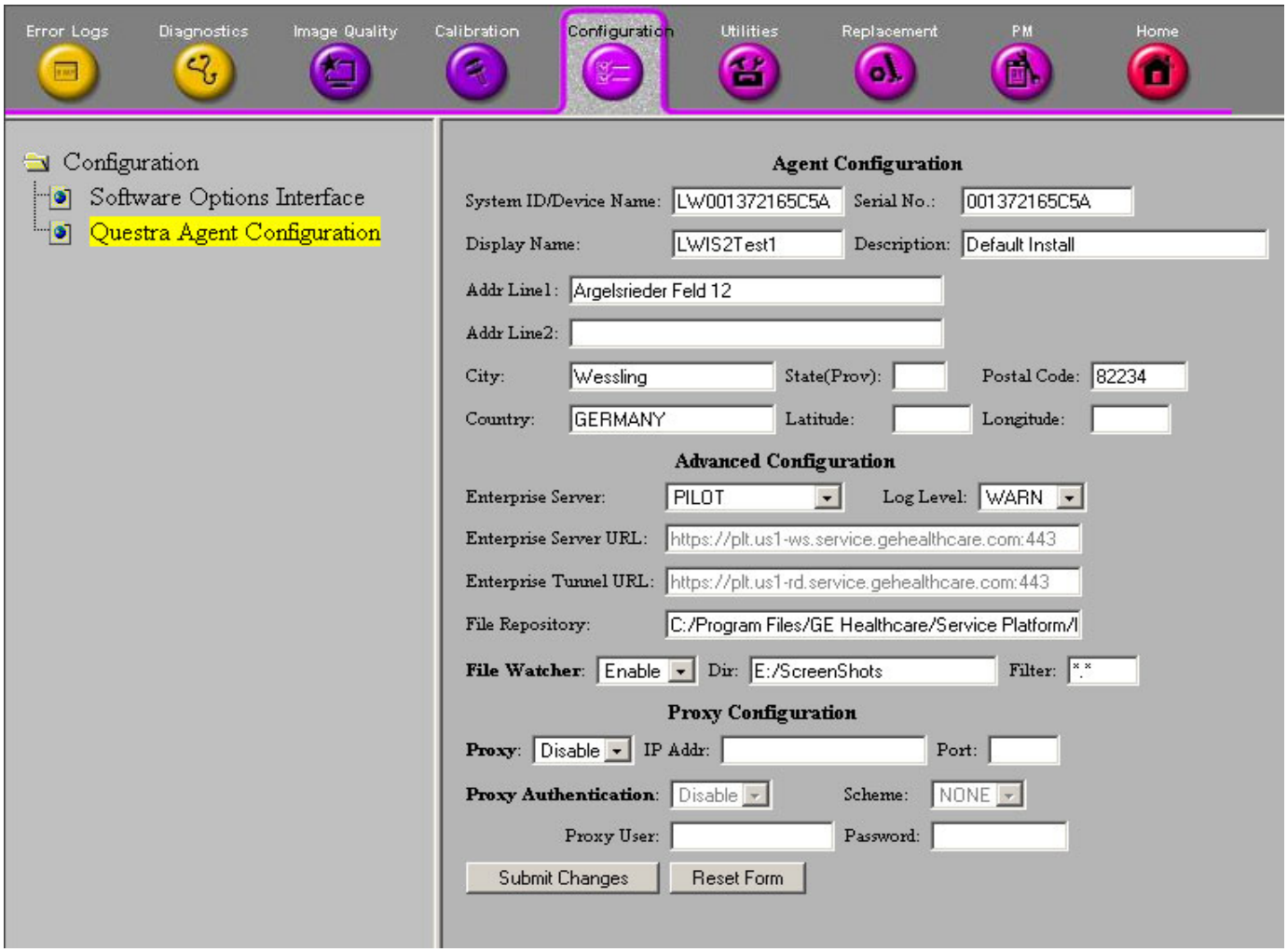


Figure 5-26 Configuration Page

5-5-10 Utilities

The Utilities page contains several miscellaneous tools.

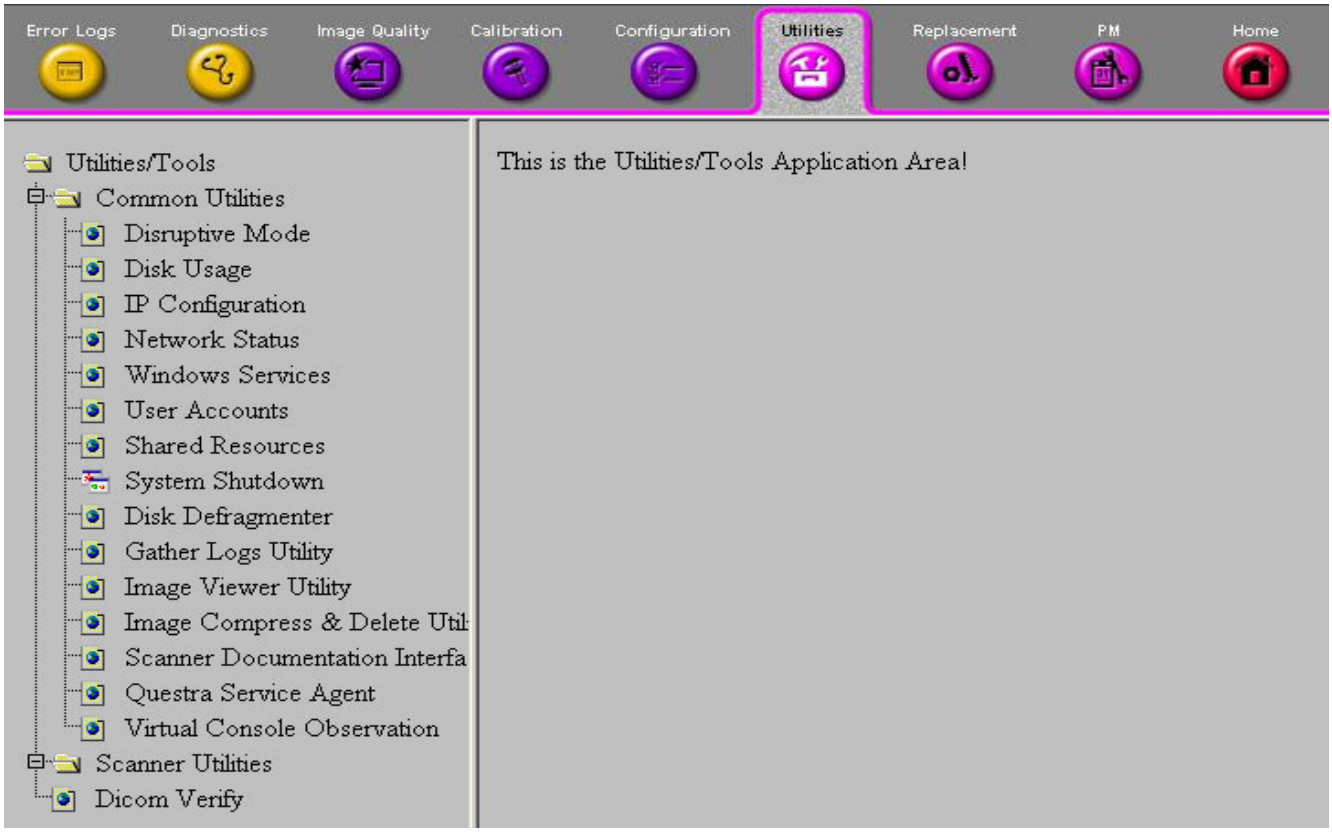


Figure 5-27 Utilities/Tools Page

These tools are available:

- Windows utilities
  - Disk usage: shows available and used disk space
  - IP Configuration: shows several network and TCP/IP parameters
  - Network status: lists the usage of network protocols, addresses and ports
  - Windows services: lists all running background services
  - User accounts: lists all applied users (including system users)
  - Shared Resources: shows remote accessible drives and folders
  - System Shutdown: possibility to remotely shutdown or restart computer
- System utilities
  -
  - Resource File Utilities: enables the viewing of special files
  - Image Viewer Utility: shows the folder where files intended for the export are stored
  -
- DICOM
  - tools: reserved for future use

5-5-11 Replacement

Not available for this product.

5-5-12 PM

Not available for this product.

Chapter 6
Service Adjustments

Section 6-1
Overview

6-1-1 Purpose of Chapter 6

This chapter explains how to do Monitor adjustments.

Table 6-1 Chapter 6 Contents

WARNING **Danger of False Diagnosis!**

An incorrect monitor or incorrect monitor configuration can lead to false diagnosis.

Adjust the monitor to display the images in adequate quality according to the manufacturer's instructions for use. If in doubt, please contact your service representative.

Section 6-2
Monitor Adjustment

6-2-1 NEC 1880, 18,1" LCD

The Quick Start Guide is delivered with the LCD Monitor. It is also available on the Internet at this location:

http://www.plasmasync.com.

WARNING *Allow the monitor to warm up at least 20 minutes before making adjustment.*

6-2-1-1 Screen Manager

See MultiSync LCD 1880 Sx Quick Start Guide.

6-2-1-2 Screen Adjustment

1.) See MultiSync LCD 1880 Sx Quick Start Guide.
2.) To calibrate the monitor so that it is capable for diagnostic medical usage set the Contrast value to 50 and the Brightness to a value from 90-100.

6-2-1-3 Displaying a Low Resolution

See MultiSync LCD 1880 Sx Quick Start Guide.

6-2-1-4 Color Adjustment

1.) See MultiSync LCD 1880 Sx Quick Start Guide.
2.) To calibrate the monitor so that it is capable for diagnostic medical usage set the Color temperature to Native.

6-2-1-5 Power-save Setup

See MultiSync LCD 1880 Sx Quick Start Guide.

6-2-2 Dell LCD 1901/2001

The Quick Start Guide is delivered with the LCD Monitor. It is also available on the Internet at this location:

http://www.dell.com.

WARNING *Allow the monitor to warm up at least 20 minutes before making adjustment.*

6-2-2-1 Screen Manager

See Dell LCD 1901/2001 Manual.

6-2-2-2 Screen Adjustment

1.) See Dell LCD 1901/2001 Manual.
2.) To calibrate the monitor so that it is capable for diagnostic medical usage set the Contrast value to 50 and the Brightness to a value from 90-100.

6-2-2-3 Displaying a Low Resolution

See Dell LCD 1901/2001 Manual.

6-2-2-4 Color Adjustment

1.) See Dell LCD 1901/2001 Manual.

2.) To calibrate the monitor so that it is capable for diagnostic medical usage set the Color temperature to Native.

6-2-2-5 Power-save Setup

See Dell LCD 1901/2001 Manual.

6-2-3 Sony Triniton, GDM-F520, 21" CRT

The Sony Monitor Operating Instruction are delivered with the Monitor.

WARNING *Allow the monitor to warm up at least 20 minutes before making adjustment.*

6-2-3-1 Monitor On-screen Menu Language

See Sony Monitor Operation Instructions.

6-2-3-2 On-screen Menu

See section "*Customizing Your Monitor*" in the Sony Monitor Operating Instruction on how to make numerous adjustments to the monitor, by using the on-screen menu.

6-2-3-3 Brightness and Contrast

1.) See step "*Adjusting the brightness and contrast*" section "*Customizing Your Monitor*" in the Sony Monitor Operating Instruction.

2.) To calibrate the monitor so that it is capable for diagnostic medical usage set the Contrast value to 85 and the Brightness to a value from 50-80.

6-2-3-4 Centering of the Picture

See step "*Adjusting the centering of the picture (CENT)*" section "*Customizing Your Monitor*" in the Sony Monitor Operating Instruction.

6-2-3-5 Picture Size

See step "*Adjusting the size of the picture (SIZE)*" section "*Customizing Your Monitor*" in the Sony Monitor Operating Instruction.

6-2-3-6 Picture Zoom

See step "*Enlarging or reducing the picture (ZOOM)*" section "*Customizing Your Monitor*" in the Sony Monitor Operating Instruction.

6-2-3-7 Shape of Picture

See step "*Adjusting the shape of the picture (GEOM)*" section "*Customizing Your Monitor*" in the Sony Monitor Operating Instruction.

6-2-3-8 Color

1.) See step *"Adjusting the color of the picture (COLOR)"* section *"Customizing Your Monitor"* in the Sony Monitor Operating Instruction.

2.) To calibrate the monitor so that it is capable for diagnostic medical usage set the Color temperature to 9300 K.

6-2-3-9 Convergence

See step *"Adjusting the convergence (CONV)"* section *"Customizing Your Monitor"* in the Sony Monitor Operating Instruction.

6-2-3-10 Additional settings

See step *"Additional settings (OPTION)"* section *"Customizing Your Monitor"* in the Sony Monitor Operating Instruction.

6-2-4 Calibrate CRT Monitor

Before you will be able to view images at their true size, your monitor or monitors will have to be calibrated. Also, the picture on all display monitors will gradually change over time, so the image may become slightly smaller or larger. Most of the time this will hardly matter, but for true size display it means that it is important to periodically re calibrate your monitor or monitors to ensure optimum accuracy.

To calibrate a monitor for true size display

1.) Select **Viewing** -> **Calibrate Monitors...** from the menu bar in the Data Selector.

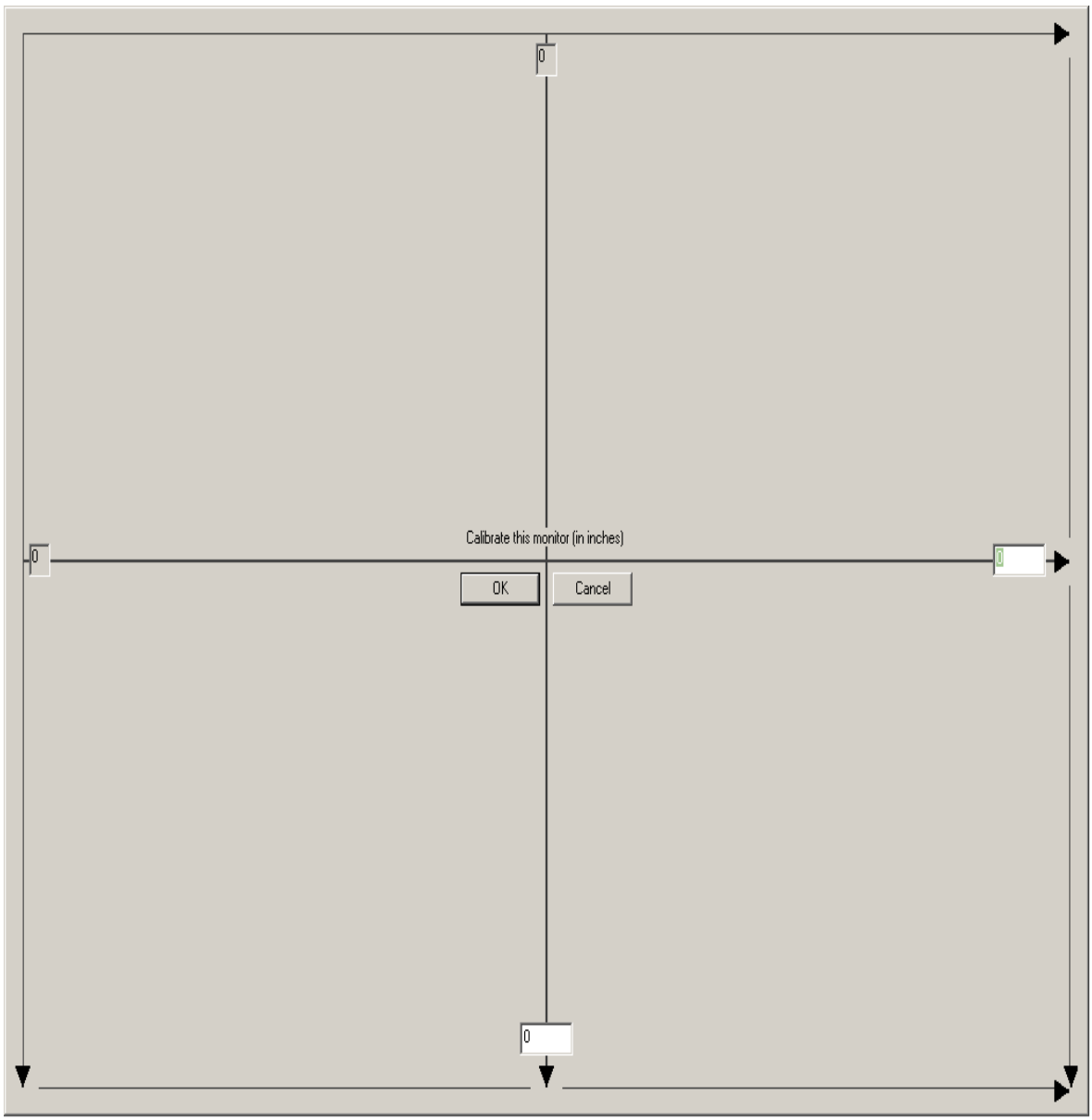


Figure 6-1 Monitor Calibration

6-2-4 Calibrate CRT Monitor (cont'd)

2.) Using a ruler and the monitor's controls, make the three horizontal lines on the monitor calibration screen the same length. Type this length in millimeters in the box in the center right of the screen.

3.) Read the vertical length (in millimeters) automatically inserted by LOGIQworks in the other box in the center at the bottom of the screen and use the monitor's controls to set the lengths of the vertical lines equal to each other and to the value given by LOGIQworks.

4.) For a multi-monitor system, repeat the process for the other monitors in the system.

If you are calibrating a multi-monitor system, the monitor calibration screen will first appear on your top left monitor and then on each of the remaining monitors in turn.

Please refer to the RadWorks 6.0User's Guide, page 190 for further information.

To calibrate brightness and contrast

go to the desktop and click on the 

icon to open the following Bitmap:

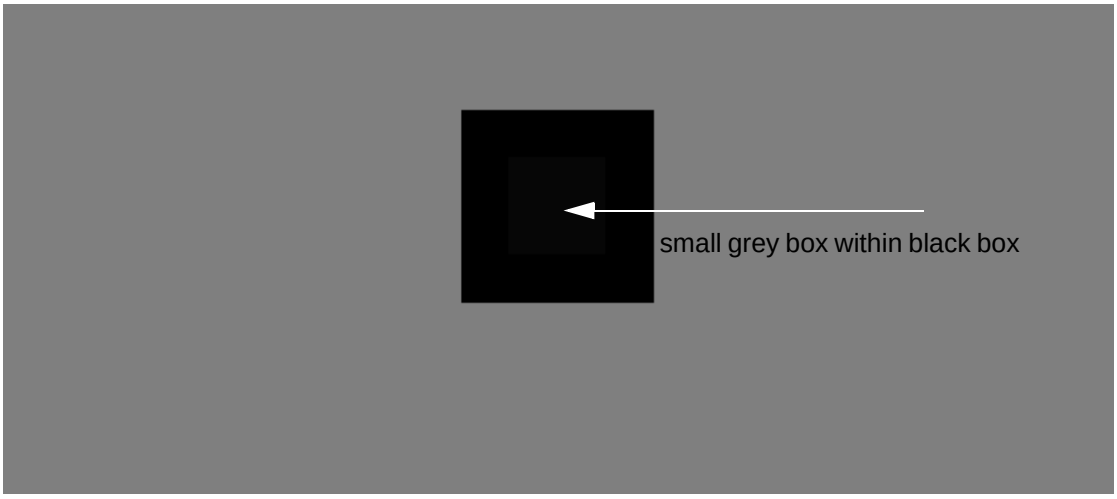


Figure 6-2 Monitor Brightness/Contrast Calibration Test Pattern

Follow the following monitor calibration procedure:

1.) Perform calibration in dim room.

2.) Set Contrast = 50 and Brightness = 100 using monitor controls.

3.) Test pattern consists of small gray box within black boxes.

4.) Slowly decrease brightness just until inner box is no longer visible.

NOTE *Monitor response lags button push.*

The brightness setting should range between 35 and 50.

Final adjustment relies on customer approval.

Chapter 7 Diagnostics/Troubleshooting

Section 7-1 Overview

7-1-1 Purpose of Chapter 7

This section describes how to setup and run the tools and software that help maintain image quality and system operation. Very basic host, system and board level diagnostics are run whenever power is applied. Some Service Tools may be run at the application level.

Table 7-1 Contents in Chapter 7

Section 7-2
Collect Vital System Information

LOGIQworks has a common interface for the user to collect critical system data in the event of a failure. This mechanism can be invoked by the globally available hotkey <Ctrl-Alt-D>.

After entering the hotkey the default folder 'D:\Export' is suggested. To save the data on a different place enter a valid path without ending slash.

The procedure will store some system information in a compressed file with a name beginning with 'logfile' and the current time stamp in the name.

Press 'OK', wait until the next message comes up indicating the output file.

The file contains several types of information:

- - screen shot
- - version information
- - registry information
- - main TCP/IP settings
- - modem log files
- - tracing files with debug information
- - application events
- - system events
- - peer-to-peer logfile
- - iip logfile
- - http error logfile
- - http access logfile
- - proDiags logfile
- - application logfile
- - distinct net sniffer logfile

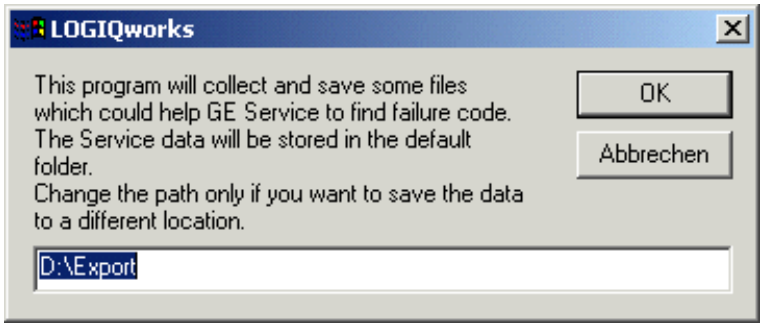


Figure 7-1 Entering the path

Section 7-2Collect Vital System Information (cont'd)

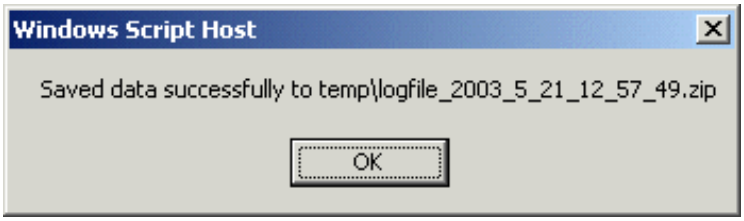


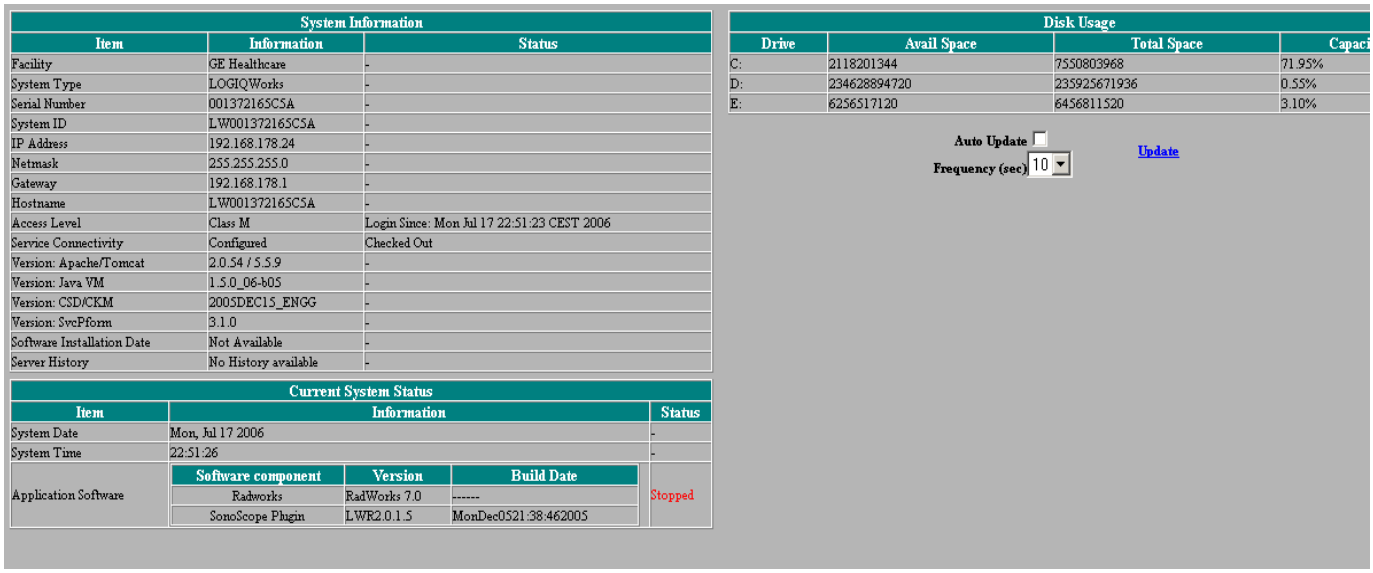
Figure 7-2 Save data

Section 7-3
Diagnostics

The Diagnostics are part of the Service Browser. To enter the Service Browser follow Section 5-5-3-2 "Service Login" on page 5-30.

7-3-1 Global Service User Interface (GSUI) Diagnostic

The Diagnostics are started from the Global Service User Interface Main Menu.



System Information

Item	Information	Status
Facility	GE Healthcare	-
System Type	LOGIQWorks	-
Serial Number	001372165C5A	-
System ID	LW001372165C5A	-
IP Address	192.168.178.24	-
Netmask	255.255.255.0	-
Gateway	192.168.178.1	-
Hostname	LW001372165C5A	-
Access Level	Class M	Login Since: Mon Jul 17 22:51:23 CEST 2006
Service Connectivity	Configured	Checked Out
Version: Apache/Tomcat	2.0.54 / 5.5.9	-
Version: Java VM	1.5.0_06-b05	-
Version: CSD/CKM	2005DEC15_ENGG	-
Version: SvcPform	3.1.0	-
Software Installation Date	Not Available	-
Server History	No History available	-

Current System Status

Item	Information			Status
System Date	Mon, Jul 17 2006			-
System Time	22:51:26			-
Application Software	Software component	Version	Build Date	Stopped
	Radworks	RadWorks 7.0	------	
	SonoScope Plugin	LWR2.0.1.5	MonDec0521:38:462005	

Disk Usage

Drive	Avail Space	Total Space	Capaci
C:	2118201344	7550803968	71.95%
D:	234628894720	235925671936	0.55%
E:	6256517120	6456811520	3.10%

Auto Update
Frequency (sec) 10
Update

Figure 7-3 GSUI main menu for External Service users

1.) Click on the DIAGNOSTICS Tool Button.

2.) Click on the **Common Diagnostic** folder to view contents.

The below menu will appear:

7-3-1 Global Service User Interface (GSUI) Diagnostic (cont'd)

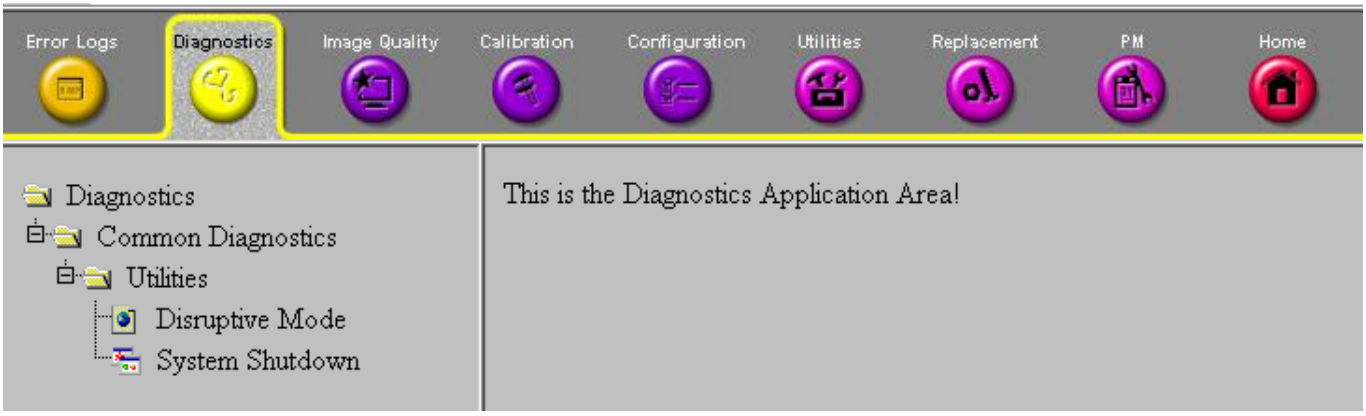


Figure 7-4 GSUI Diagnostic Menu

Section 7-4
Virtual Console Observation

7-4-1 General

This tool offers the possibility to view the entire customer's desktop and operation system.

Using the tool a remote service technician or the online center can access and modify all PC settings and programs on the customer's PC.

Before a GE Service FE can access the customer’s PC remotely, first the customer has to enable this feature by choosing "Disruptive Mode" and confirming "Yes".

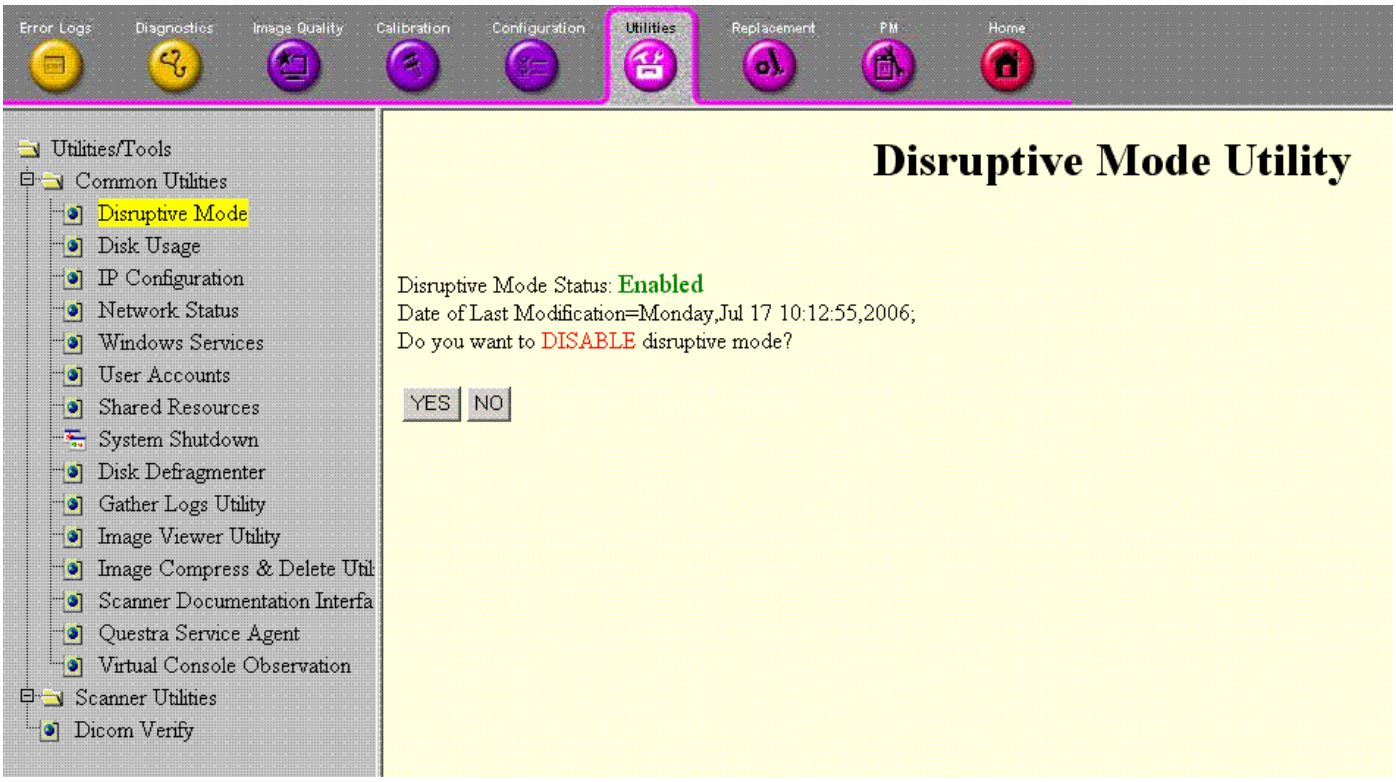
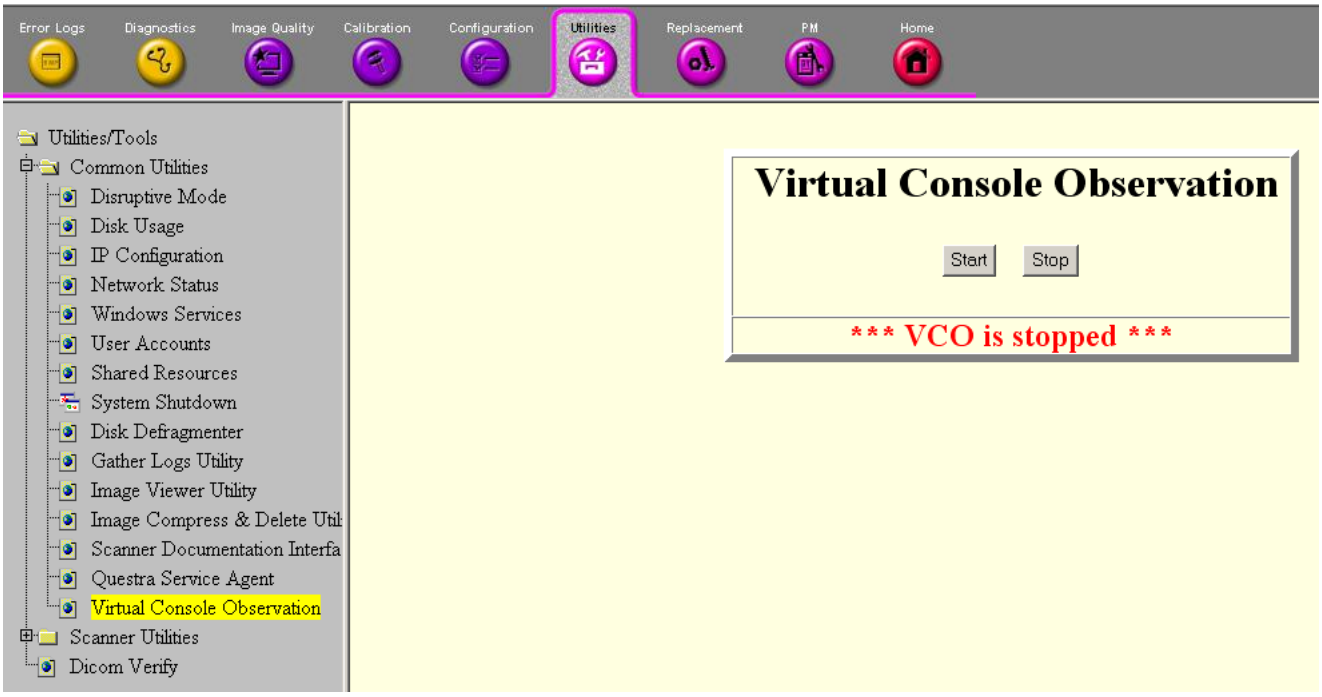


Figure 7-5 Disruptive Mode

7-4-1 General (cont'd)

Second the customer has to start the VCO:

- Open Utilities.
- Go to Common Utilities.
- Open the Virtual Console Observation.
- Press the 'Start'-botton.



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Chapter 8
Replacement Procedures

Section 8-1
Overview

8-1-1 Purpose of Chapter 8

This chapter contains replacement procedures for the following modules/subsystems:

WARNING No covers or panels should be removed from the system (high-voltage risk).
Service and repairs must only be performed by authorized personal.
Attempting do-it-yourself repairs invalidate warranty and are an infringement to regulations and are inadmissible acc. to IEC 60601-1.

Table 8-1 Chapter 8 Contents

Section 8-2
FRU Replacement Procedure

8-2-1 PC Replacement Procedure

8-2-1-1 Preparations

- Write down the Computer-ID of the PC.
- If possible save all system presets (see Section 10-6-4-1 "Backup")
- Boot from CD drive with Recovery CD and set PC to factory settings. See 8-3-1-1 "Complete reformatting of a System" on page 8-14.
- Shut Down the PC and all Peripherals as described in chapters 3 and 4.

8-2-1-2 PC Removal

1.) Disconnect the Power cable coming from the wall outlet.
2.) Disconnect all signal cabling from the rear of the PC.
3.) Remove the SW option dongle.
4.) Remove the USB Hard Disk.
5.) Remove the PC.

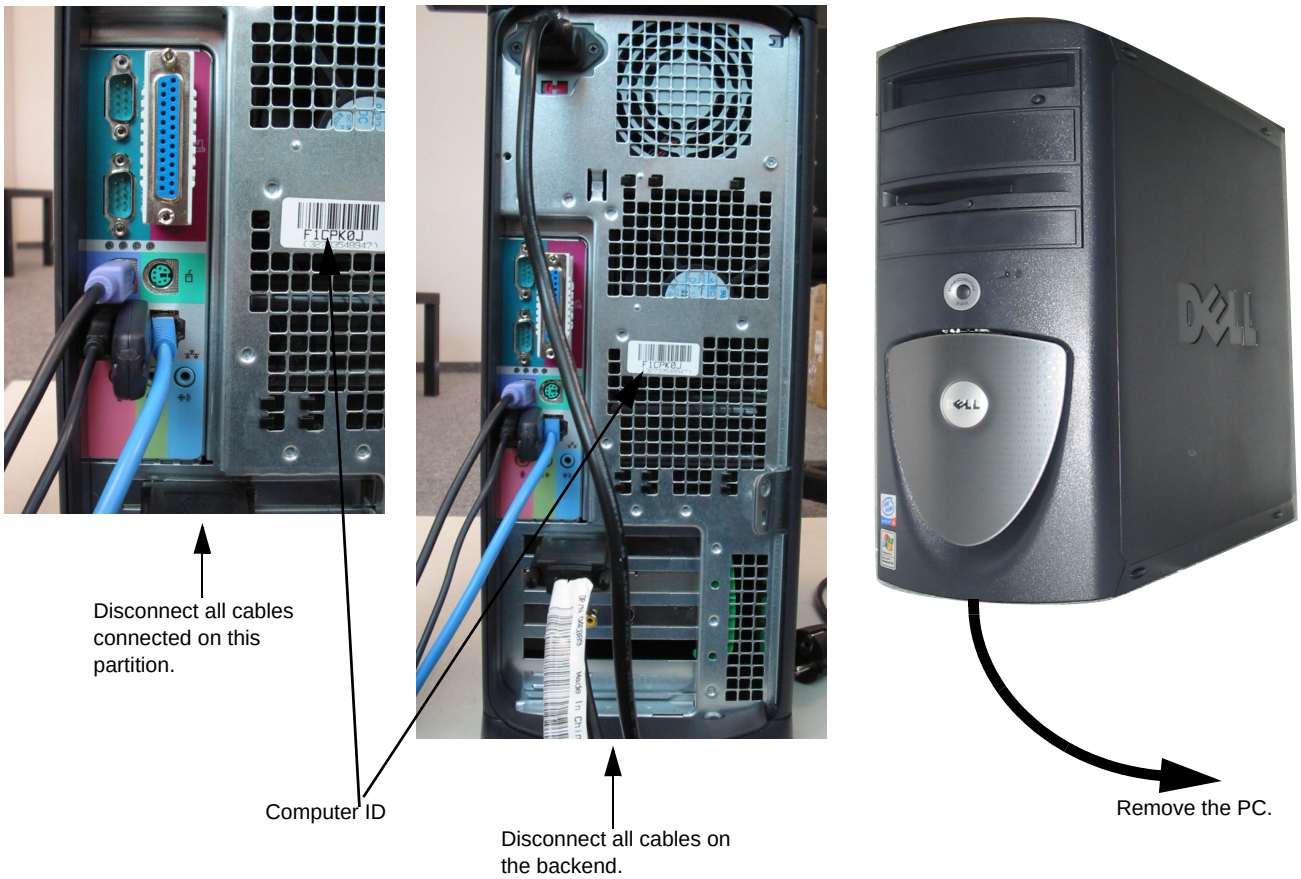

Figure 8-1 PC disconnections and removal System based on Dell Precision 340

8-2-1-2 PC Removal (cont'd)

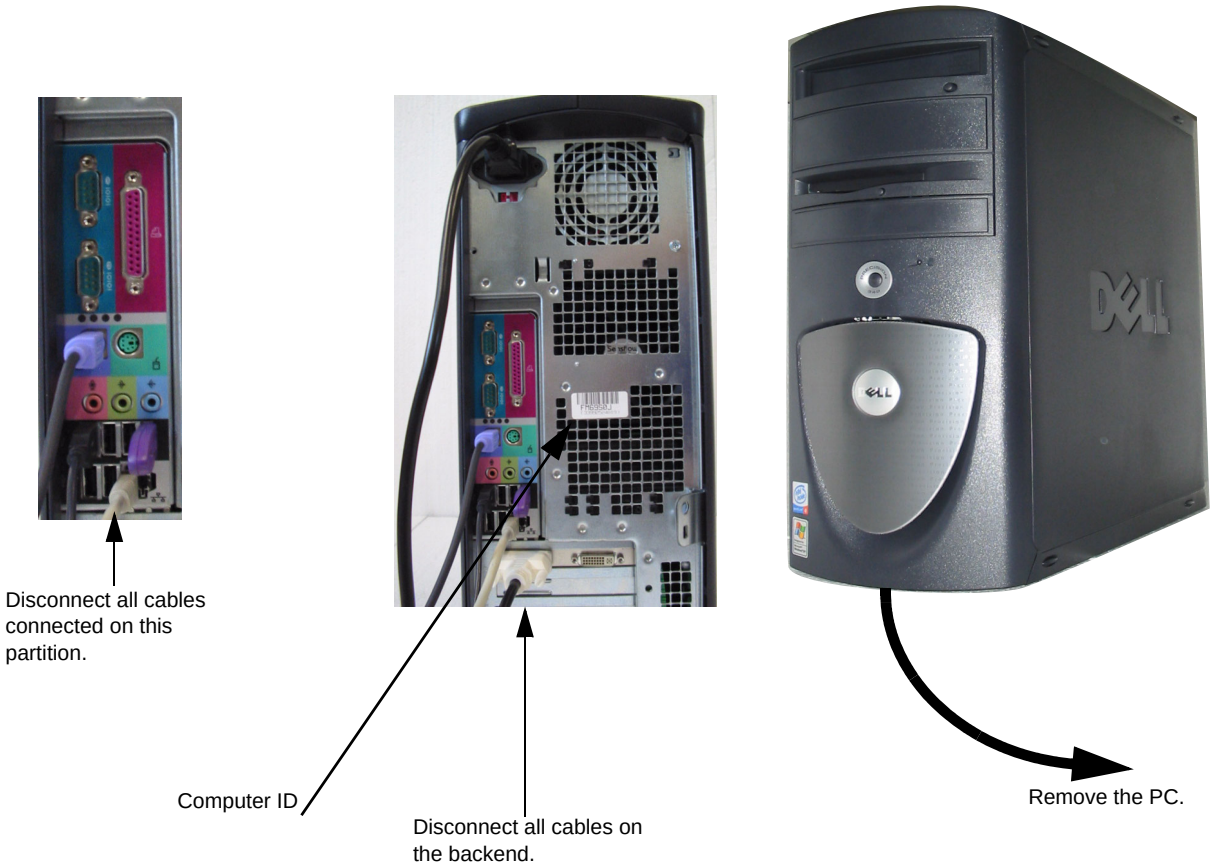

Figure 8-2 PC disconnections and removal System based on Dell Precision 360 or on Dell Precision 370

8-2-2 CRT Monitor Replacement Procedure

8-2-2-1 Preparations

- Shut Down and turn Off the PC as described in chapters 3 and 4.

8-2-2-2 Monitor Removal

1.) Switch OFF the Monitor.
2.) Disconnect the Monitor Power cable from wall outlet.
3.) Disconnect the Monitor Signal cables from the PC.

8-2-2-2 Monitor Removal (cont'd)

4.) Remove the Monitor

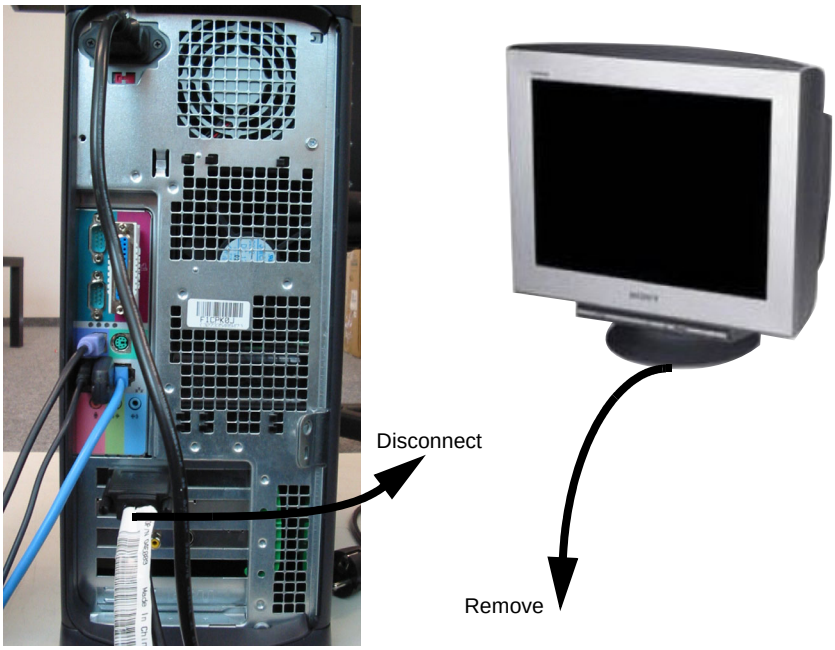

Figure 8-3 Monitor disconnection and removal

8-2-2-3 Monitor Installation

1.) Position new Monitor where old one was positioned.
2.) Connect the Power cable to the wall outlet.
3.) Connect the Signal cables to the PC.
4.) Switch ON the Monitor.
5.) Turn ON the PC.
6.) Calibrate the monitor as described in section 6-2-4.

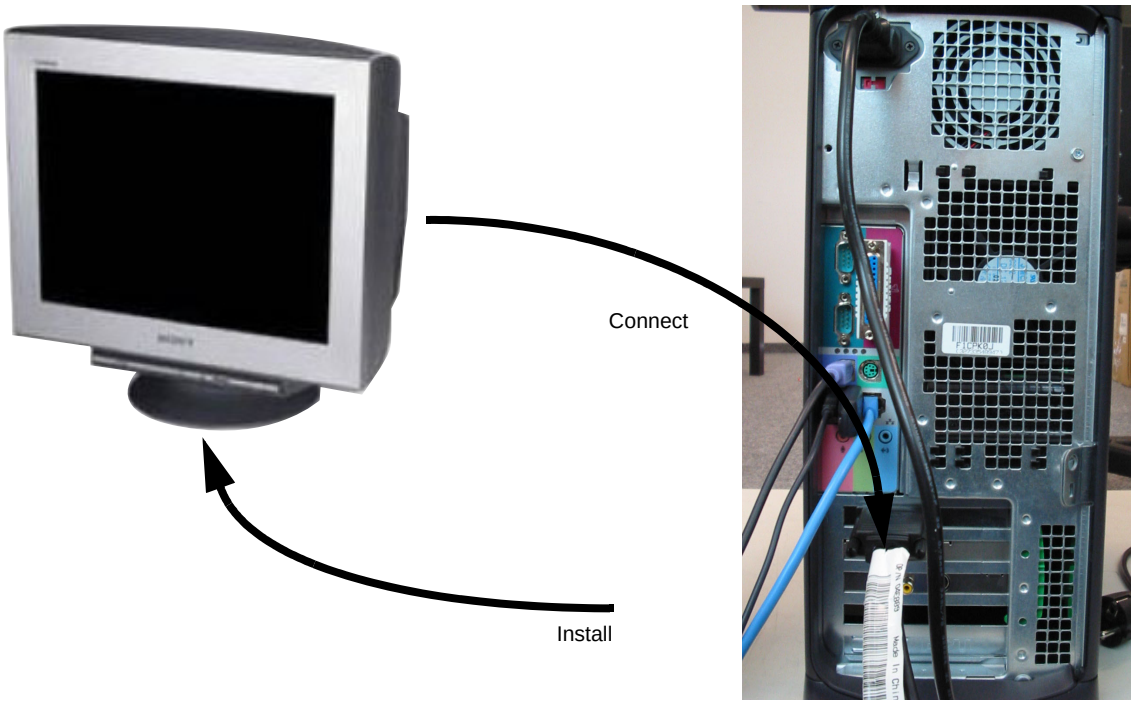

Figure 8-4 Monitor Connection and installation

8-2-3 LCD Monitor Replacement Procedure

8-2-3-1 Preparations

- Shut Down and turn Off the PC as described in chapters 3 and 4.

8-2-3-2 Monitor Removal

1.) Switch OFF the Monitor.
2.) Disconnect the Monitor Power cable from the wall outlet.
3.) Disconnect the Monitor Signal cables from the PC.
4.) Remove the Monitor.

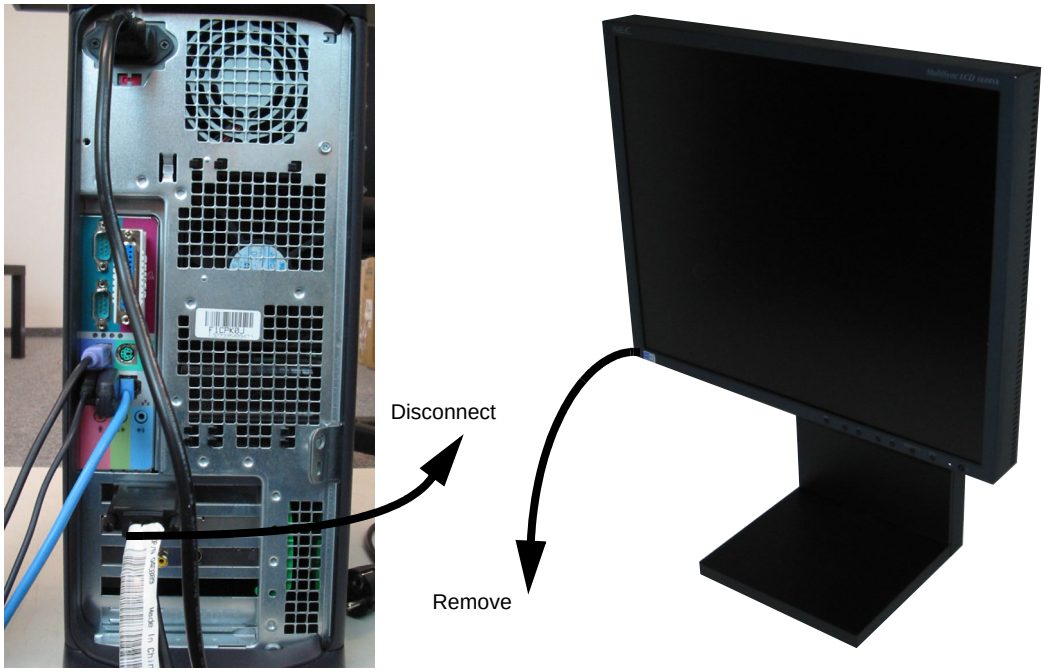

Figure 8-5 Monitor disconnection and removal

8-2-3-3 Monitor Installation

1.) Position new Monitor where old one was positioned.
2.) Connect the Power cable to the wall outlet.
3.) Connect the Signal cables to the PC.
4.) Switch ON the Monitor.
5.) Turn ON the PC.

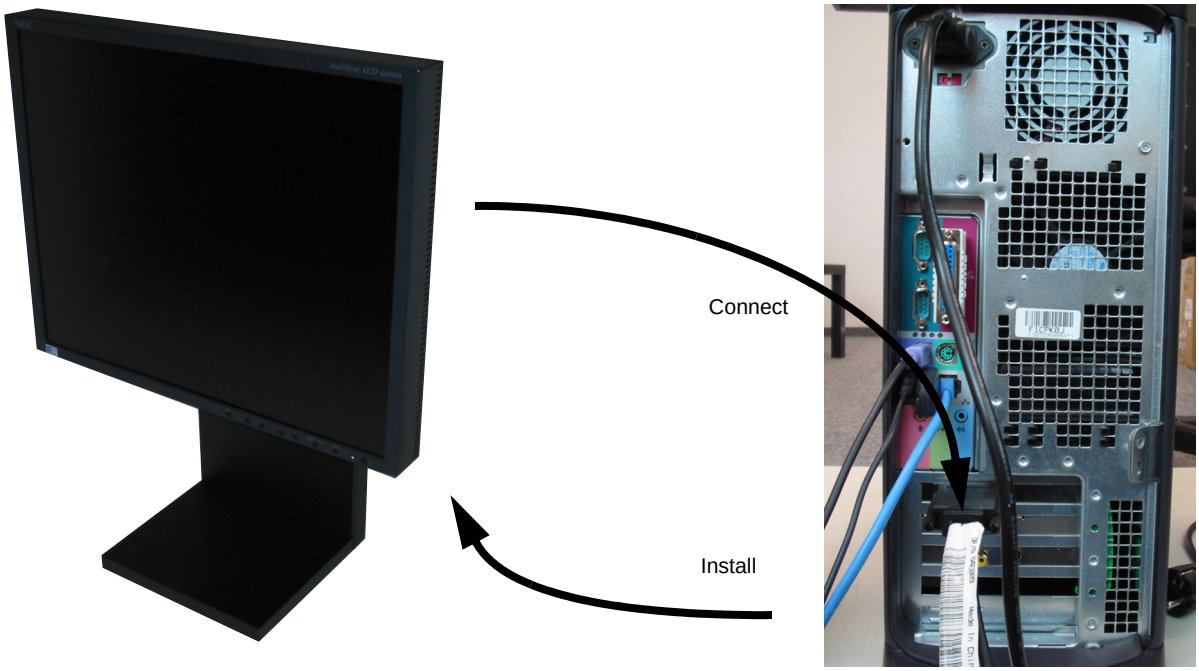

Figure 8-6 Monitor connection and installation

8-2-4 LCD Monitor Replacement Procedure

8-2-4-1 Preparations

- Shut Down and turn Off the PC as described in chapters 3 and 4.

8-2-4-2 Monitor Removal

1.) Switch OFF the Monitor.
2.) Disconnect the Monitor Power cable from the wall outlet.
3.) Disconnect the Monitor Signal cables from the PC.
4.) Remove the Monitor.

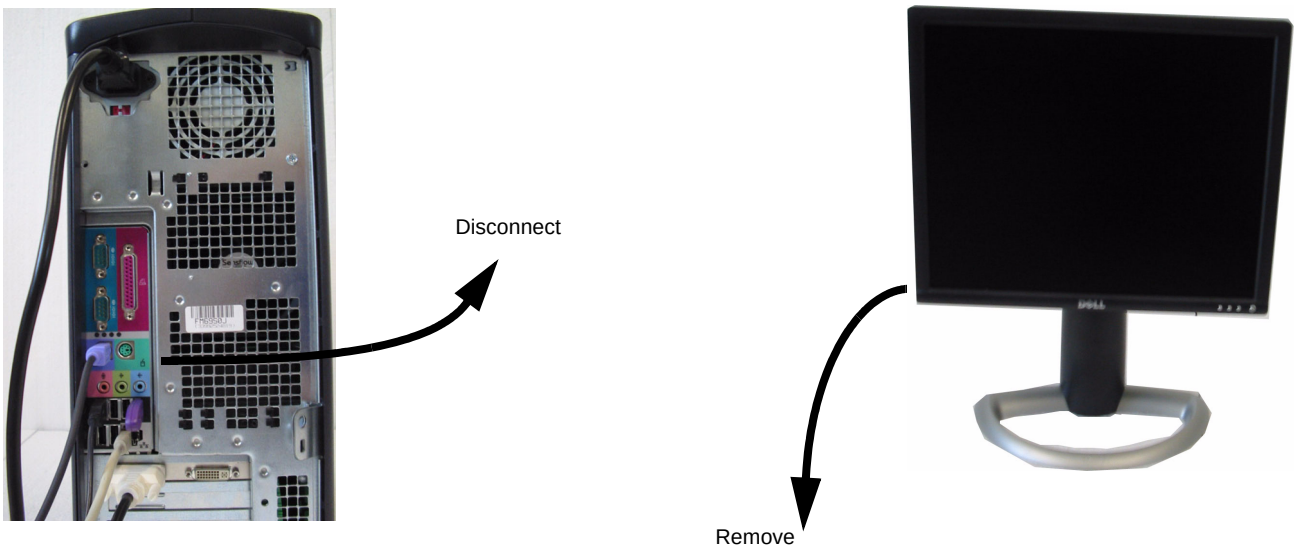

Figure 8-7 Monitor disconnection and removal

8-2-4-3 Monitor Installation

1.) Position new Monitor where old one was positioned.
2.) Connect the Power cable to the wall outlet.
3.) Connect the Signal cables to the PC.
4.) Switch ON the Monitor.
5.) Turn ON the PC.

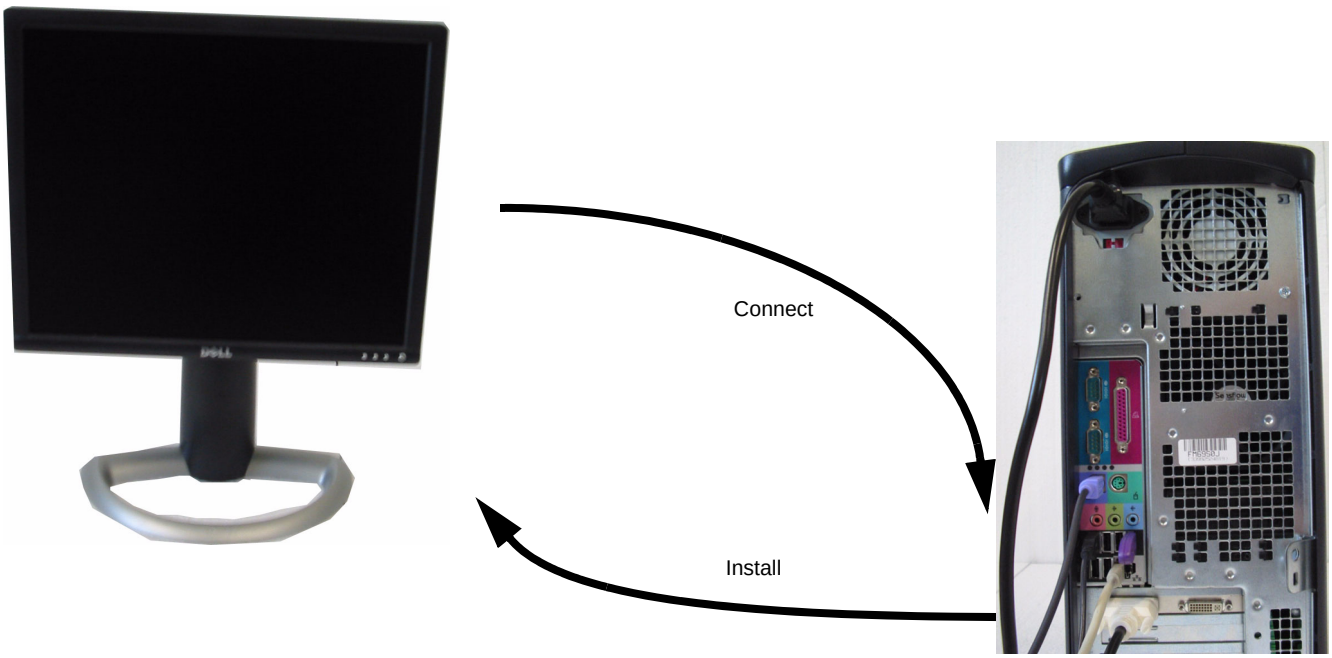

Figure 8-8 Monitor connection and installation

8-2-5 Modem Replacement Procedure

8-2-5-1 Modem of Dell 340 and Dell 360

8-2-5-1-1 Preparations

- Shut Down and turn Off the Workstation and all its parts as described.

8-2-5-1-2 Modem Removal

1.) Switch Off the Modem

Figure 8-9 Modem showing ON/OFF switch

2.) Disconnect the phone cable from the wall jack.
3.) Disconnect the DC Power cable.

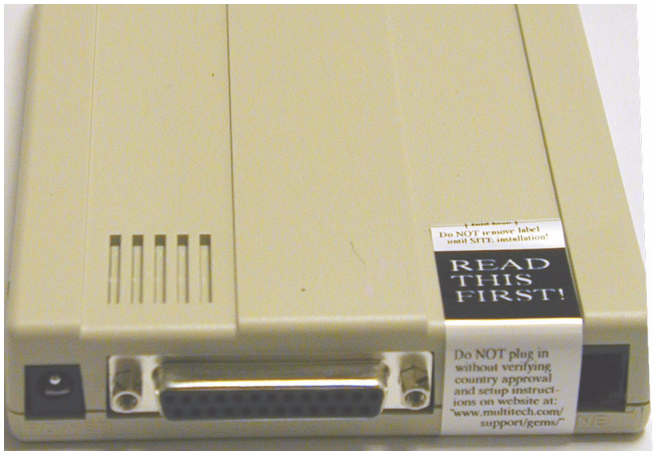

Figure 8-10 Modem Rear connections

4.) Disconnect the Signal cable to the PC.
5.) Remove the Modem.

8-2-5-2 Modem of Dell Precision 370

8-2-5-2-1 Preparations

- Shut Down and turn Off the Workstation and all its parts as described.

8-2-5-2-2 Modem Removal

1.) Disconnect the phone cable from the wall jack.
2.) Disconnect the DC Power cable.
3.) Disconnect the Signal cable to the PC.
4.) Remove the Modem

8-2-5-3 Modem Installation

1.) Place the New Modem where the old one was.
2.) Connect the signal cable to the PC.
3.) Connect the wall outlet.
4.) Connect the Phone cable to wall phone jack.
5.) Switch On the Modem.
6.) Turn ON the Workstation and all its parts as described on previous page.

8-2-5-4 Modem of Dell Precision 380 and Dell 390

8-2-5-4-1 Preparations

- Shut Down and turn Off the Workstation and all its parts as described.

8-2-5-4-2 Modem Removal

1.) Disconnect the phone cable from the wall jack.
2.) Disconnect the USB cable to the PC.
3.) Remove the Modem.

8-2-5-5 Modem Installation

1.) Place the New Modem where the old one was.
2.) Connect the USB cable to the PC.
3.) Connect the wall outlet.
4.) Connect the Phone cable to wall phone jack.
5.) Turn ON the Workstation and all its parts as described on previous page.

8-2-6 Cable Replacement Procedure

8-2-6-1 Preparations

- Shut Down and turn Off the Workstation and all its parts as described.

CAUTION *This procedure is a general cable replacement procedure, and should be valid for Power, Fire wire, Ethernet and RS-232 cables.*

8-2-6-2 Cable Removal

1.) Unplug the cable from the connecting devices.
2.) Remove the cable.

8-2-6-3 Cable Installation

1.) Plug the New Cable to the same devices as the old one was connected to.
2.) Turn on the workstation and the connected device.
   a.) Power Cable: Verify System is powered on.
   b.) Fire wire Cable: Insert a media into the DVD Drive. Connect to the Dataflow, and verify there is power on the DVD drive and that you are able to read from the disk.
   c.) Ethernet Cables: Verify a green link light present on the Ethernet Switch, or PC.
   d.) RS-232 Cable, modem: Verify iLinq connection.

Section 8-3
Recovery Procedure

8-3-1 Purpose of Software Recovery

8-3-1-1 Complete reformatting of a System

WARNING All data will be lost. Your system will be set to factory settings.Store user settings on USB HDD and DICOM data on network store devices or CD-RW/DVD-RW if possible.

1.) Insert Recovery CD into the CD drive. Use the Recovery CD which is shipped with the system. Only this CD restores the Specific User, Windows and Application Settings which are put on the system during manufacturing.

Figure 8-11 Factory Settings

2.) Enter the Boot Menu by pressing <F12>.
3.) Select the CD-Drive to boot from.

8-3-1-1 Complete reformatting of a System (cont'd)

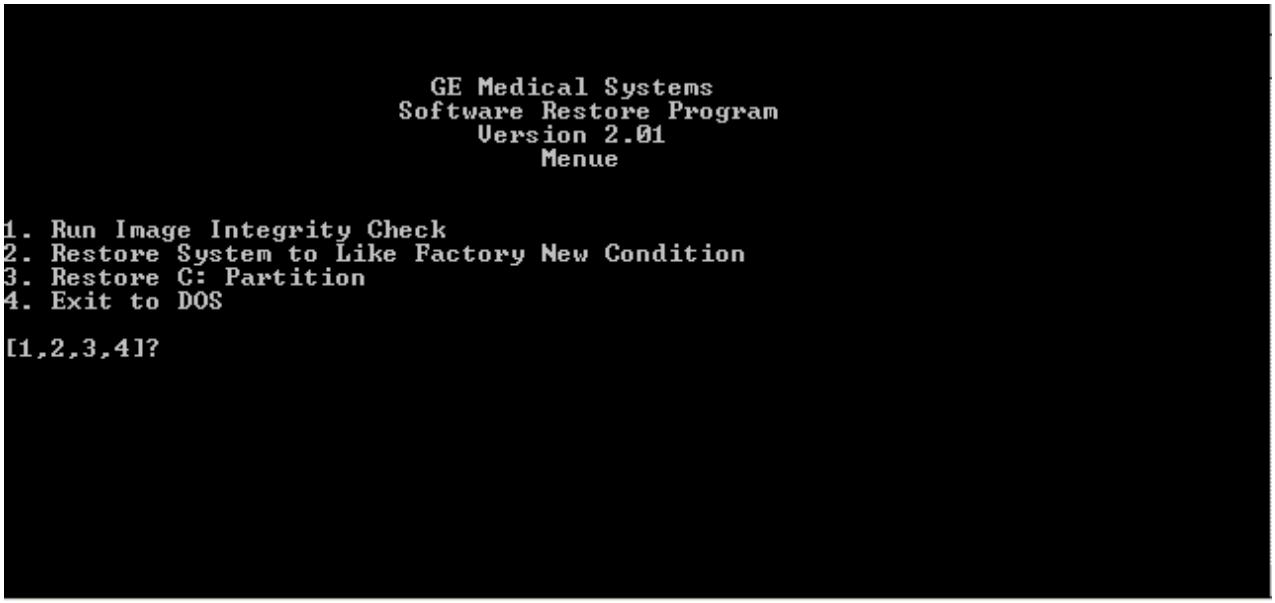

Figure 8-12 Restore Menu

4.) Press 2. for restoring the system like Factory new condition.

5.) If you don't want to proceed the Recovery Procedure, press 4. to exit DOS. Remove the Recovery CD and reboot your system

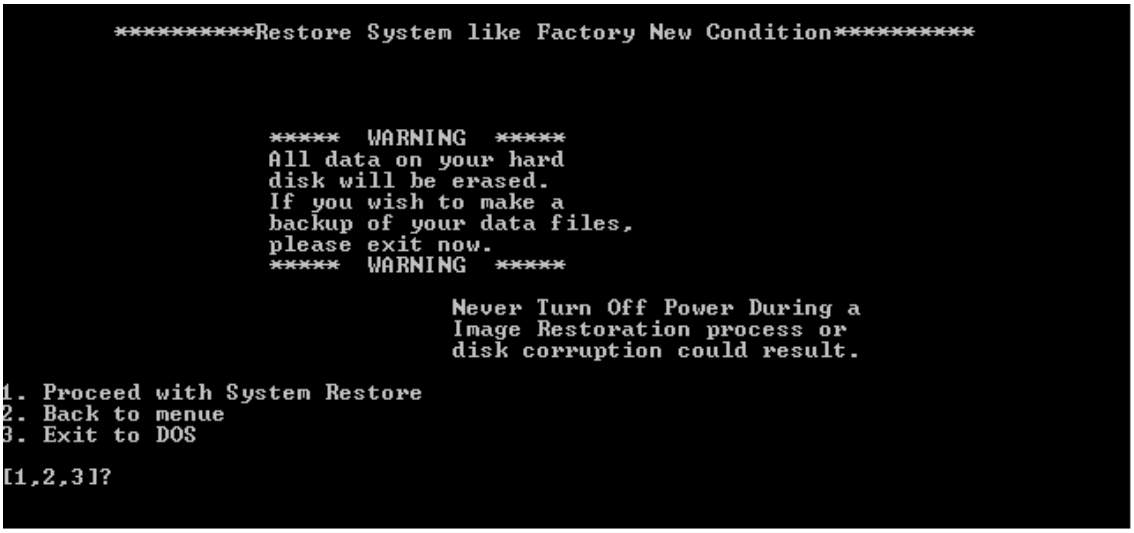

Figure 8-13 System Restore

6.) If you are sure that you want to proceed the System restore press 1. After choosing this point Ghost will restore your system like Factory new condition. Consider, that all data on your hard disk will be erased.

8-3-1-1 Complete reformatting of a System (cont'd)

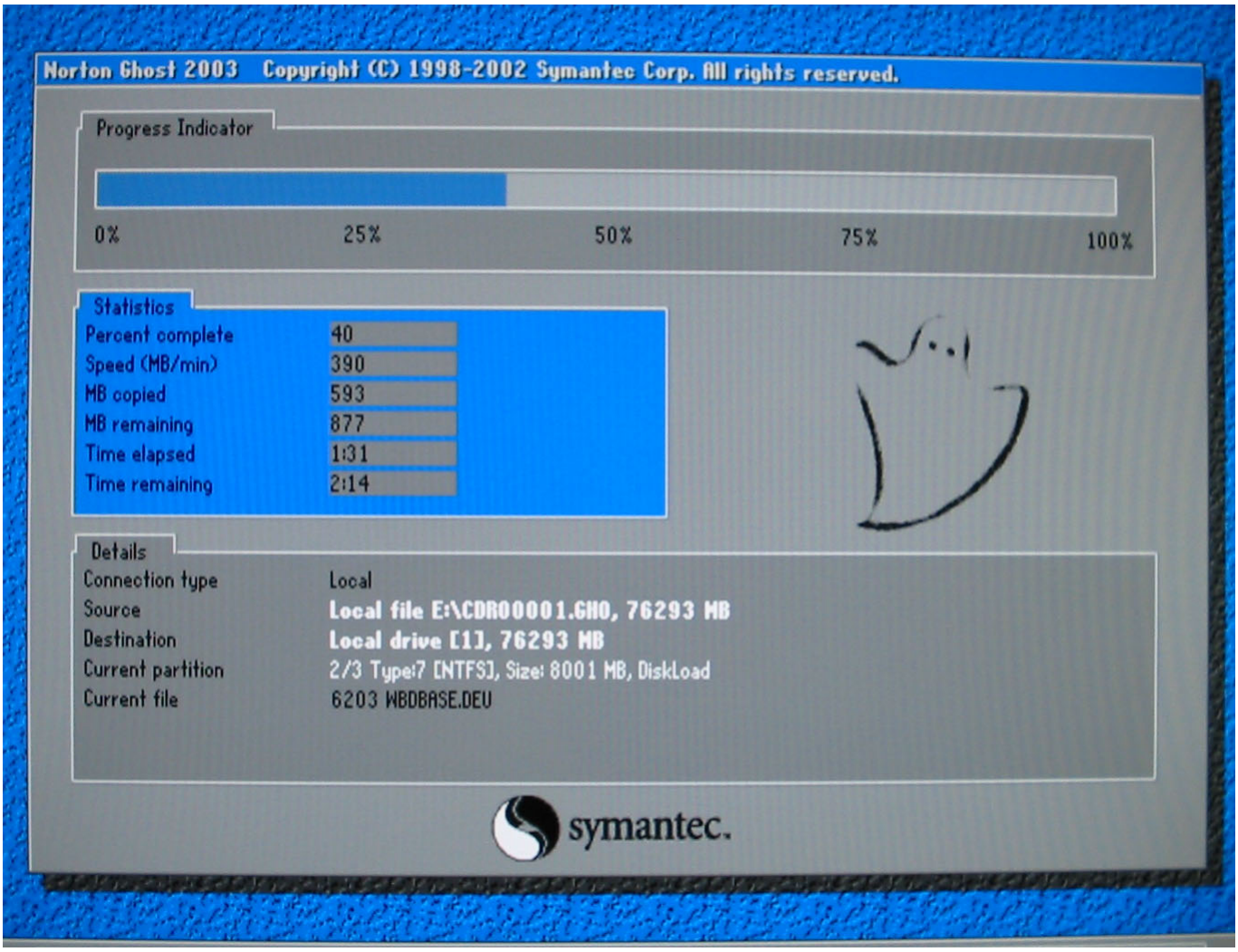

Figure 8-14 Ghost Surface

7.) While system restores the Ghost surface like on figure 8-15 is shown on the screen.

8-3-1-1 Complete reformatting of a System (cont'd)

Figure 8-15 Restore Complete

8.) After the restore has finished remove the CD from the CD drive and reboot the PC.

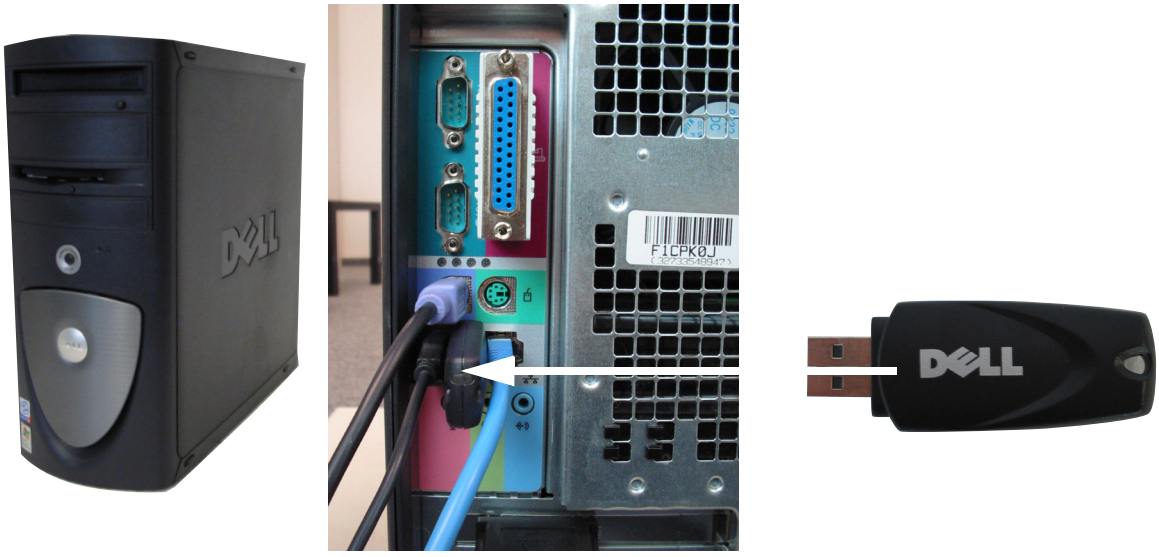

Figure 8-16 USB HDD check System based on Dell Precision 340

9.) Check the installation of the USB HDD

10.) Recover User settings from USB HDD (see 10-6-4)

8-3-1-2 PC is working but System is corrupted

WARNING All data will be lost. Your system will be set to factory settings. Store user settings on USB HDD and DICOM Data on network store devices or CD-RW/DVD-RW is possible.

Proceed Step 1 to Step 9 from 8-3-1-1.

8-3-1-3 PC is working but Windows or application files are corrupted

NOTE All data on Drive C will be set to factory settings. Store user settings on USB HDD and DICOM Data on network store devices or CD-RW/DVD-RW if possible.

1.) Insert Recovery CD into the CD drive. Use the Recovery CD which is shipped with the system. Only this CD restores the Specific User, Windows and Application Settings which are put on the system during manufacturing.

Figure 8-17 Factory Settings

2.) Boot from the CD by pressing <F12> during boot sequence.

8-3-1-3 PC is working but Windows or application files are corrupted (cont'd)

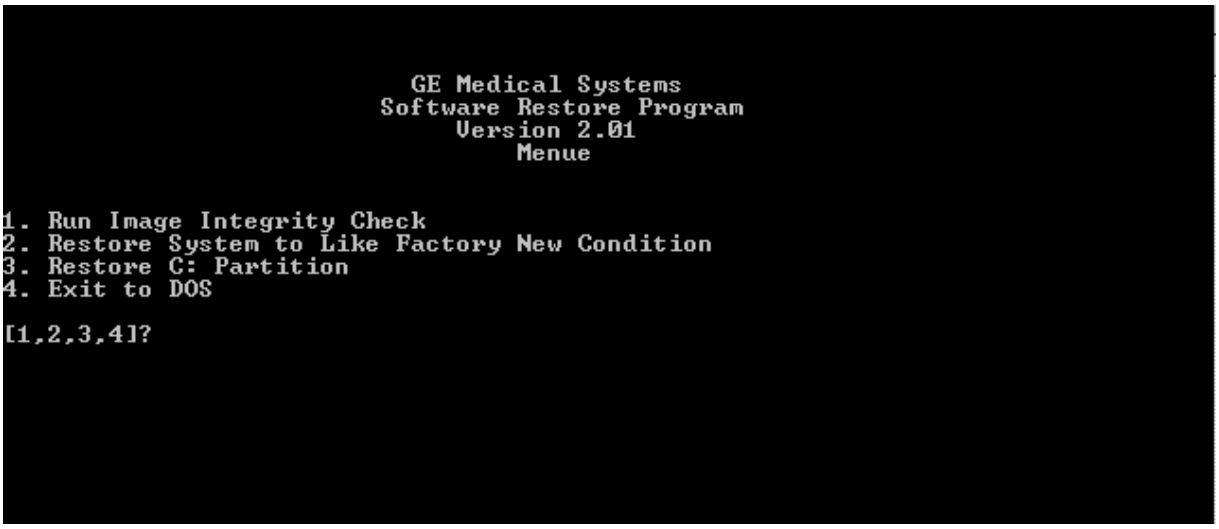

Figure 8-18 Restore Menu

3.) Press 3. for restoring your C: Partition like Factory new condition.

4.) If you want to exit to DOS press 4.

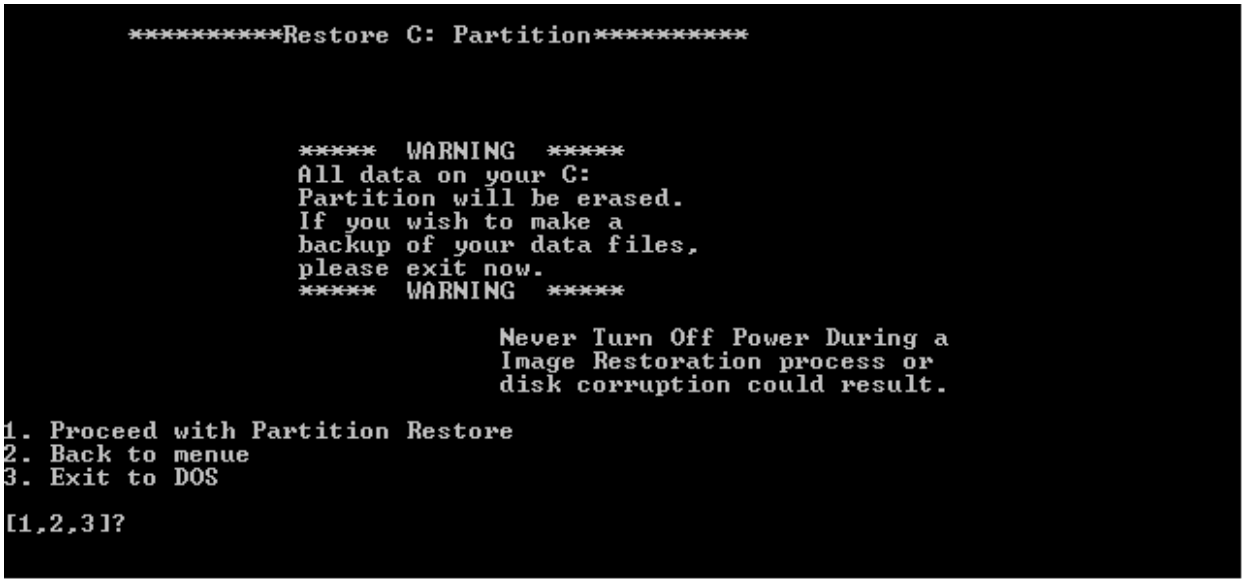

Figure 8-19 Partition Restore

5.) If you are sure that you want to proceed the Partition restore press 1. After choosing this point Ghost will restore drive C: from your system like Factory new condition. Consider that all data on your partition C: will be erased.

8-3-1-3 PC is working but Windows or application files are corrupted (cont'd)

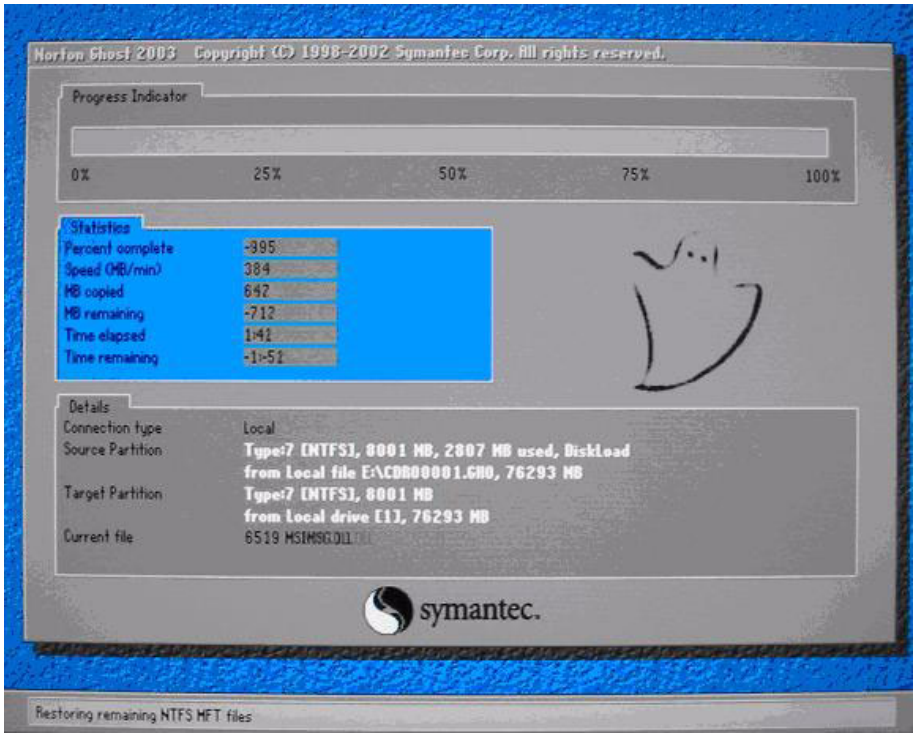

Figure 8-20 Ghost surface partition restore

6.) While partition restore, the Ghost surface like on Figure 8-14 is shown on the screen.

Figure 8-21 Restore Complete

7.) After the restore has finished remove the CD from the CD drive and reboot the PC.

8-3-1-3 PC is working but Windows or application files are corrupted (cont'd)

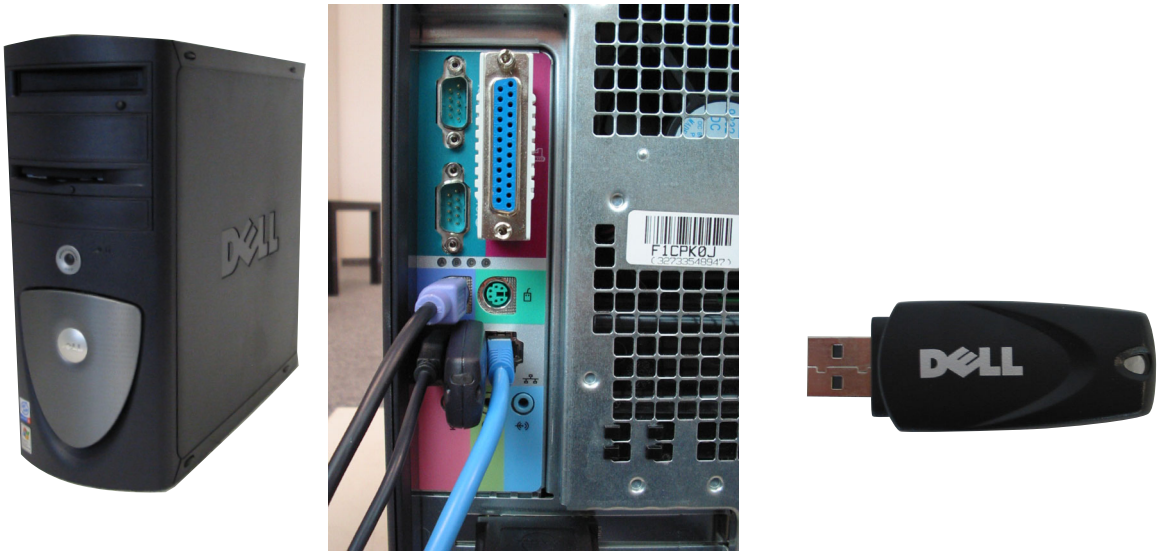

Figure 8-22 USB HDD check of System based on Dell Precision 340

Figure 8-23 USB HDD check of System based on Dell Precision 360

8.) Check the installation of USB HDD.

9.) Recover User settings from USB HDD (see 10-6-4)

8-3-1-4 PC is working but Software is corrupted

All data will be lost. Store User Settings on USB HDD and DICOM Data on network store devices or CD-RW/DVD-RW.

Proceed Step 1 to Step 6 from 8-3-1-1.

8-3-1-5 Windows Message after Recovery Procedure

If the message shown in the picture below occurs click on the “Yes"-button and reboot the system.

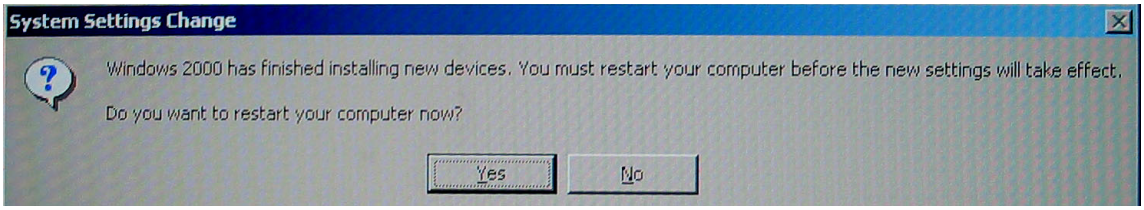

Figure 8-24 Windows Message

8-3-1-6 Recover with Spare Part Recovery CD

Recover the system with Spare Part recovery DVD P/N 2413251 for DELL 340 and 2366663-2 for DELL 360 and 2413250 for Dell 370

1.) Proceed the steps in Section 8-3-1-1 "Complete reformatting of a System" by using the Spare Part Recovery DVD.

2.) Reboot the system.

Figure 8-25 Setup Wizard

3.) Click “Next” to continue.

8-3-1-6 Recover with Spare Part Recovery CD (cont'd)

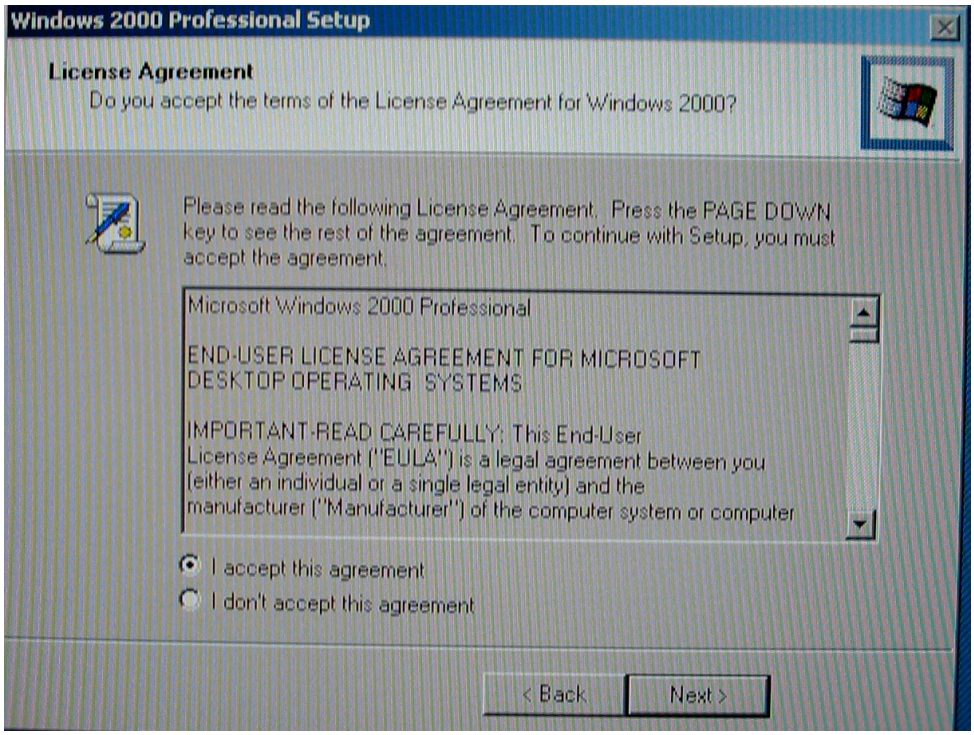

Figure 8-26 Confirm License Agreement

8-3-1-6 Recover with Spare Part Recovery CD (cont'd)

4.) Select "I accept this agreement" and click "Next".

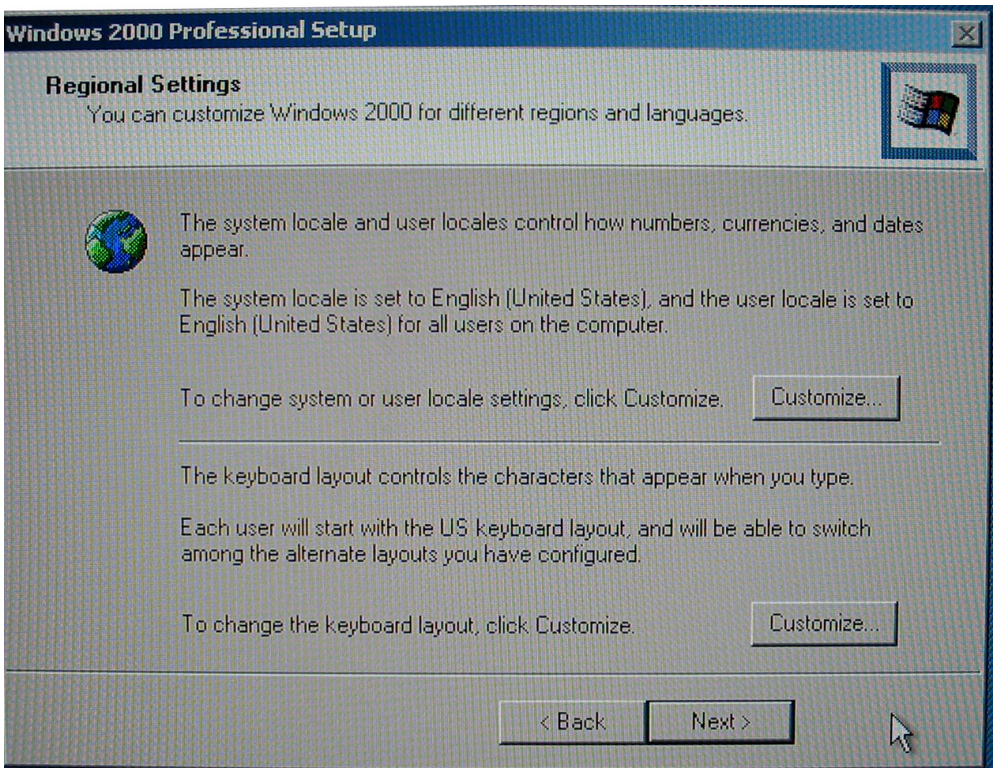

Figure 8-27 Regional Settings

5.) To change the local settings for system and keyboard click "Customize".

6.) Click "Next" to continue.

8-3-1-6 Recover with Spare Part Recovery CD (cont'd)

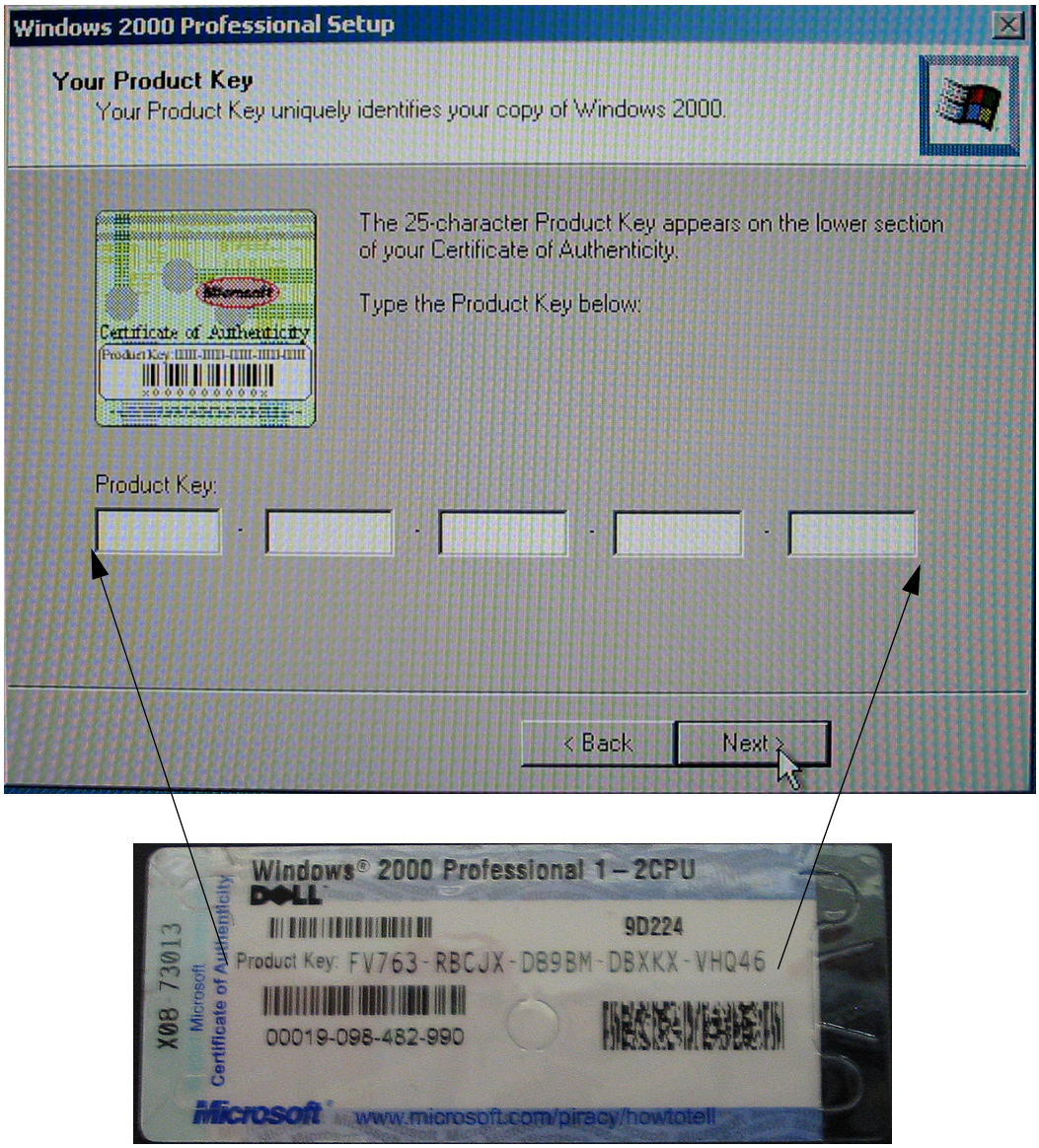

Figure 8-28 Product Key

7.) Type in the Product Key you will find on a label on top of the CPU box.
8.) Click "Next" to continue.

8-3-1-6 Recover with Spare Part Recovery CD (cont'd)

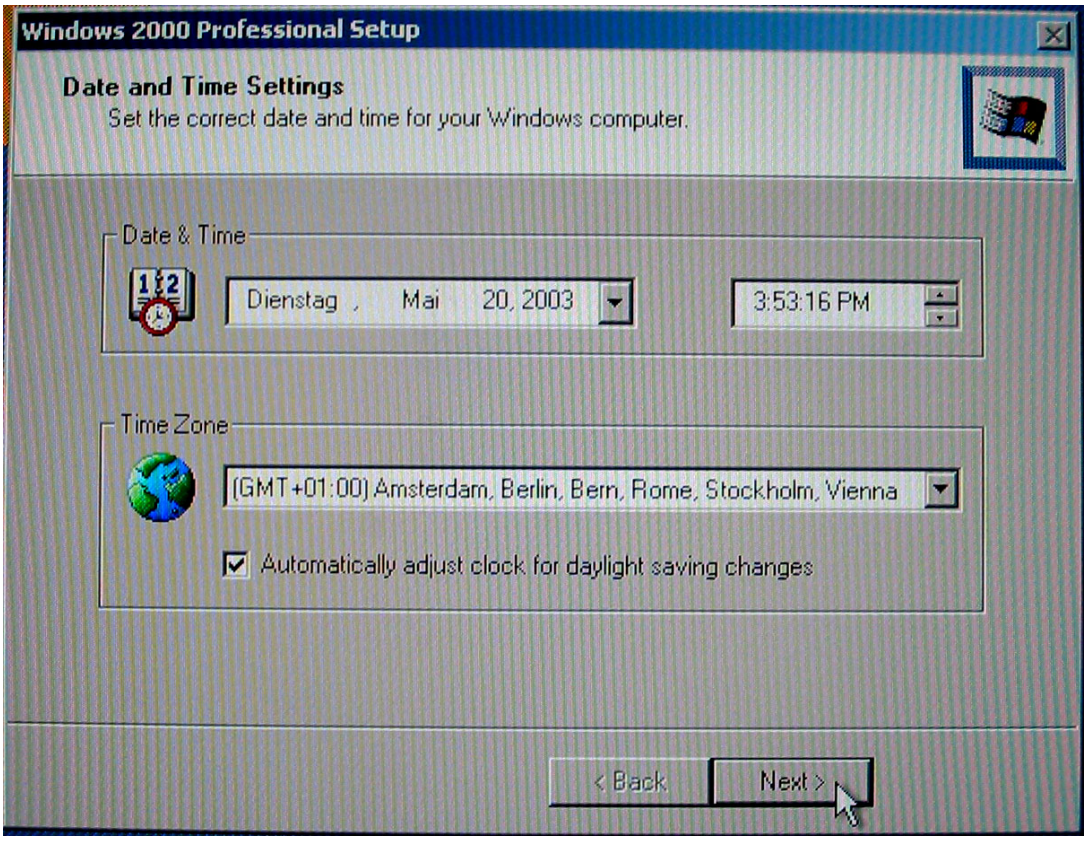

Figure 8-29 Date and Time Settings

9.) Verify date and time and if necessary change the Date & Time settings.
10.) Select the Time Zone the system is located.
11.) Click "Next" to continue.
12.) Logon as ADMINISTRATOR.
13.) Go through the steps in Section 3-5 on page 3-68 to configure the system.

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Chapter 9
Renewal Parts

Section 9-1
Overview

9-1-1 Purpose of Chapter 9

This chapter gives you an overview of Spare Parts available for the LOGIQworks.

Table 9-1 Contents in Chapter 9

Section 9-2
List of Abbreviations

9-2-1 Stock Items

- FRU 1 - Field Replacement Unit - Stock Part.
- FRU 2 - Field Replacement Unit - Stock Part, Long delivery.

9-2-2 Non stock Items

FRU N - Field Replacement Unit - Non Stock Part.

9-2-3 General abbreviations

QTY= Quantity

9-2-4 LOGIQworks PC versions covered in this manual

See Section 1-1-4 "LOGIQworks Models covered by this Manual" on page 1-2.

Section 9-3
Renewal parts list

9-3-1 Stock Items FRU 1 and 2

Figure 9-1 LOGIQworks Parts identifications

Table 9-2 PC, Monitor, Keyboard and Mouse parts

Item	Part Name	Part Number	FRU	Qty.	Description
1	Dell Precision 340	2365947	1	1	Dell support on GPO
2	Spacesaver Keyboard US Spacesaver Keyboard French Spacesaver Keyboard German Spacesaver Keyboard Italian Spacesaver Keyboard Spanish	2366635 2369714 2366631 2369725 2369730	1 2 2 2 2	1	
3	Optical USB Mouse	2366634	2	1	
4	Monitors	2365798 2365799	1	1	NEC LCD 1880 Sx Black Sony GMD-F520
5	Signal Cables digital Signal Cables analog	2368273 2370014	2	1	LCD Monitor digital (DV) CRT Monitor analog (VGA)
6	Power Cables for PC, Monitor, Modem	2369732 2369733 2369734 2369735 2369736	2	3-5	Power Cord for Precision 340 US Power Cord for Precision 340 French Power Cord for Precision 340 German Power Cord for Precision 340 Italian Power Cord for Precision 340 Spanish
7	Y-Monitor cable digital Y-Monitor cable analog	2368269 2368271	1	1	
8	Serial Modem	2245794	1	1	Modem MUltitech MT-5634 ZBA V.90
9	Patch Cable	2366640	2	1	5 meters long
10	RS-232 Cable, 9 pin ends	2368272	2	1	PC to Modem
11	IEEE Fire wire Cable	2366637	2	1	
12	Recovery DVD V. 1.2	2413251	1	1	
13	USB Harddisk	2365958	1	1	

9-3-2 Stock Items FRU 1 and 2

Figure 9-2 LOGIQworks Parts identifications

Table 9-3 PC, Monitor, Keyboard and Mouse parts

Item	Part Name	Part Number	FRU	Qty.	Description
1	Dell Precision 360 Dell Precision 370 Dell Precision 380 Dell Precision 390	2365947-2 2413249 2416901 5184038	1 1 1 1	1 1 1 1	Dell support not on GPO
2	Spacesaver Keyboard US Spacesaver Keyboard French Spacesaver Keyboard German Spacesaver Keyboard Italian Spacesaver Keyboard Spanish	2366635 2369714 2366631 2369725 2369730	1 2 2 2 2	1	
3	Optical USB Mouse	2366634	2	1	
4	Monitors	2409662 2409663	1	1	Dell LCD 1901 Europe Dell LCD 2001 US/Asia
5	Monitor Signal Cable LCD digital	2368273	2	1	LCD Monitor digital (DV)
6	Power Cables for PC, Monitor, Modem	2369732 2369733 2369734 2369735 2369736 2409670	2 2	3-5 1-2	Power Cord for Precision 360 US Power Cord for Precision 360 French Power Cord for Precision 360 German Power Cord for Precision 360 Italian Power Cord for Precision 360 Spanish Power Cord FP2001 US
7	Serial Modem	2413338	1	1	Modem Multitech MT-5634 ZBA-USB
8	Patch Cable	2366640	2	1	5 meters long
9	RS-232 Cable, 9 pin ends	2368272	2	1	PC to Modem
10	Recovery DVD V. 1.2 Dell 360 Recovery DVD V. 1.3 Dell 370 Recovery DVD V. 2.0 Dell 380 Recovery DVD V. 3.0 Dell 380 Recovery DVD V. 3.0 Dell 390	2366663-2 2413250 5180509 5179581 5260541	1 1 1 1	1 1 1 1	
11	USB Harddisk	2365958	1	1	
12	Y-Monitor cable digital	2368269	1	1	for Dell 370

9-3-3 Renewal Part Lists

9-3-3-1 Updates

Table 9-4 LOGIQworks Updates

Item	Part Name	Part Number	FRU	Qty.	Description
1	Update 1.2 to 1.3	2413333	1	1	Update of LOGIQworks version 1.2 to version 1.3
2	Update 1.3 to 2.0	5180305	1	1	Update of LOGIQworks version 1.3 to version 2.0
3	Update 2.0 to 3.0	5260545	1	1	Update of LOGIQworks version 2.0 to version 3.0

To Update LOGIQworks version 1.2 to LOGIQworks version 3.0, all three items have to be ordered. First update your system to LOGIQworks 1.3, after that to LOGIQworks 2.0 and in the end to LOGIQworks 3.0.

For the update from LOGIQworks 1.3 to 3.0, two parts are required, item 2 and item 3. First update your system to LOGIQworks 2.0 and finally update your system to LOGIQworks 3.0.

All three items are valid for all workstations.

Before recover, check the correct RA600 license file or the correct RA600 dongle. In case you have a licence file, make a backup of the license file, you will need it for the update.

Also check if you have the correct TruAccess / PlugIn USB dongle, it should have the same version as the update. Mind that the TruAccess / PlugIn USB dongle is independent to the Software version, you will only need the latest version, it will also be valid for older versions. Latest dongle can be ordered by GPO (Part Number: 2413709).

9-3-3-2 LOGIQworks FX and LOGIQworks SoftwareOnly

Table 9-5 LOGIQworks FX and LOGIQworks SoftwareOnly

Item	Part Name	Part Number	FRU	Qty.	Description
1	LW-FX 3.0.4 Inst CD RA600	5260543	1	1	Installation CD of LOGIQworks FX version 3.0.4 for installation on existing RA600 systems
2	LW3.0.4 InstCD SWonly	5260546	1	1	Installation CD of LOGIQworks SWonly version 3.0.4 for software only installation

LOGIQworks FX is the plug-in software for an existing Centricity RA600 or ViewPoint system. With LOGIQworks FX you have the ability to add the image review capabilities of LOGIQworks to your existing RA600 or ViewPoint workstation. LOGIQworks FX removes the necessity for a separate workstation to achieve enhanced image review of your ultrasound studies.

Software only package is the plug-in software to run LOGIQworks on third party hardware.

9-3-3-2-1 DVD burner for LOGIQworks SoftwareOnly

Table 9-6 LOGIQworks FX and LOGIQworks SoftwareOnly

Item	Part Name	Part Number	FRU	Qty.	Description
1	LACIE D2 EXTERNAL DVD BURNER	2014143-007	1	1	DVD Burner for compatibility with RA600 software

The LACIE D2 EXTERNAL DVD BURNER is a external DVD drive for compatibility with RA600 software. For Installation of the external DVD burner see Technical Publication: Centricity Radiology RA 600 V7.0 Service Manual (Direction DOC0054151).

9-3-4 Product Manuals

Part Name	FRU	Part Number	QTY
Basic Service Manual English	N	5184024-100	1
Proprietary Service Manual English	N	5184027-100	1
Instruction for Use English	N	5177849-100	1
Release Notes English	N	5177928-100	1
Quick Guide English	N	5177986-100	1
Quick Card English	N	5177962-100	1
Update Installation Manual English	N	5177883-100	1
FX Installation Manual English	N	5184015-100	1
Software Installation Manual English	N	5184018-100	1
Instruction for Use French	N	5177849-101	1
Release Notes French	N	5177928-101	1
Quick Guide French	N	5177986-101	1
Quick Card French	N	5177962-101	1
Instruction for Use Spanish	N	5177849-106	1
Release Notes Spanish	N	5177928-106	1
Quick Guide Spanish	N	5177986-106	1
Quick Card Spanish	N	5177962-106	1
Instruction for Use German	N	5177849-108	1
Release Notes German	N	5177928-108	1
Quick Guide German	N	5177986-108	1
Quick Card German	N	5177962-108	1
Instruction for Use Italian	N	5177849-111	1
Release Notes Italian	N	5177928-111	1
Quick Guide Italian	N	5177986-111	1
Quick Card Italian	N	5177962-111	1
Instruction for Use Japanese	N	5177849-140	1
Release Notes Japanese	N	5177928-140	1
Quick Guide Japanese	N	5177986-140	1
Quick Card Japanese	N	5177962-140	1

Table 9-7 Product manuals

Part Name	FRU	Part Number	QTY
Instruction for Use Swedish	N	5177849-142	1
Release Notes Swedish	N	5177928-142	1
Quick Guide Swedish	N	5177986-142	1
Quick Card Swedish	N	5177962-142	1
Quick Guide Korean	N	5177986-144	1
Instruction for Use Danish	N	5177849-160	1
Release Notes Danish	N	5177928-160	1
Quick Guide Danish	N	5177986-160	1
Quick Card Danish	N	5177962-160	1
Quick Guide Norwegian	N	5177986-161	1
Quick Guide Finish	N	5177986-162	1
InSite II ViewPoint/LOGIQworks Installation Manual	N	5181936-100	1

Table 9-7 Product manuals

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Chapter 10
Quality Assurance

Section 10-1
Overview

10-1-1 Purpose of Chapter 10

This chapter describes Periodic Maintenance (PM) and customer performed tasks on the workstation and peripherals. These procedures are intended to maintain the quality of the computer system. Read this chapter completely and familiarize yourself with the procedures before performing a task.

Table 10-1 Contents in Chapter 10

WARNING Do not remove any covers from the computer system!

Section 10-2
Why perform Periodic Maintenance

10-2-1 Keeping Records

It is good business practice that ultrasound facilities maintain the records of periodic and corrective maintenance of the LOGIQworks which is a peripheral to radiology ultrasound scanners such as LOGIQ 7 and LOGIQ 9.

10-2-2 Quality Assurance

Routine quality control testing must occur regularly Table 10-2 on page 3. The same tests are performed during each period so that changes can be monitored over time and effective corrective action can be taken.

Section 10-3
Periodic Maintenance Schedule

10-3-1 How often should PMs be performed?

The Maintenance Task Schedule specifies how often your LOGIQworks should be serviced and what items need attention. It is the customer's responsibility to ensure the LOGIQworks periodic maintenance is performed as scheduled in order to retain its high level of safety, dependability and performance. Your GE Service Representative knows your LOGIQworks best and can provide competent, efficient service. Please contact us for further information and to schedule GE Medical Systems Ultrasound to perform this service for you.

The services and intervals shown in the maintenance schedule assumes that you use your LOGIQworks for an average image review load.

If conditions exist which exceed typical usage and image review load, then it is recommended to increase the periodic maintenance frequencies.

Table 10-2 Periodic Maintenance Schedule

Service at Indicated Time	Daily	Weekly	Monthly	Annually	Notes
Inspect AC Mains Cable			•		look for damages
Inspect Cables and Connectors			•		look for damages
Clean all outer casings			•		dry PC cleaner cloth
Clean Monitor screen			•		Use anti static alcoholic moist cloth
Clean Mouse and Keyboard			•		Use anti static alcoholic moist cloth
Calibrate Monitors		2 weekly			See to 6-2 for LCD monitors To adjust calibration interval see chapter 3-5-2-5
Removal of Log files is performed automatically					See chapter 3-5-4-5 for maintenance period of connection service, Chapter 3-5-6-5 for maintenance period of database service, Chapter 3-5-8-4 for maintenance period of the print service.

Section 10-4
Tools Required

10-4-1 Necessary Tools

10-4-1-1 Specific Requirements for Periodic Maintenance

Table 10-3 Overview of Requirements for Periodic Maintenance

Tool	Part Number	Comments
Anti Static Vacuum Cleaner	46–194427P278 46–194427P279	120V 230V
Disposable Gloves		
Cleaning Cloth		For moisturized cleaning

Section 10-5
Safety Inspections

10-5-1 Electrical Safety Tests

10-5-1-1 Specifications to meet

WARNING **THE USER MUST ENSURE THAT SAFETY INSPECTIONS ARE PERFORMED AT LEAST EVERY 12 MONTHS ACCORDING TO THE REQUIREMENTS OF THE PATIENT SAFETY STANDARD IEC-EN 60601-1. ONLY TRAINED PERSONS ARE ALLOWED TO PERFORM THE SAFETY INSPECTIONS MENTIONED ABOVE.**

Check that power cables are connected correctly and undamaged in any way.

Section 10-6
PC Maintenance

10-6-1 LOGIQworks units Outer casing

1.) Switch off the Units.
2.) Remove the power cord from the wall outlet.
3.) Clean outer casings with a special PC cleaner cloth.

10-6-2 Monitor Screen

1.) Switch off the monitor and remove the power cord from the wall outlet.
2.) Clean the screen with a conventional off the shelf screen cleaner cloth.
3.) If necessary wipe it dry.

10-6-3 Keyboard and Mouse

1.) Clean the Keyboard keys and Mouse cover with a conventional off the shelf keyboard and mouse cleaner.
2.) If necessary wipe them dry.
3.) Vacuum the keyboard pads clean.

10-6-4 Backup and Restore

NOTE *This backup process does NOT backup image data present in D: drive. It backups file present on C. drive only.*

10-6-4-1 Backup

The system data (C: drive) has to be backed up every day in order to restore LOGIQworks to its latest state, in case of system failure. The recommended method to backup system data is to have a separate RW-DVD for each working day (e.g. DVD-Monday, DVD-Tuesday etc.)

1.) Insert the DVD for a particular day into the DVD drive and the rescue floppy to the floppy drive.

NOTE *Ensure that the correct DVD-RW for the day is inserted in order to avoid mix up of the backup of a different day.*

2.) Restart the system.
3.) To copy/backup the C: drive onto the DVD, press “1”. The backup process may take around 30 minutes, and then a screen pops up prompting the user to remove the floppy disc and DVD. Follow the instructions.
4.) Restart the system. Press “Ctrl+Alt+Del” keys.

10-6-4-2 Restore

1.) Insert the DVD for a particular day into the DVD drive and the rescue floppy to the floppy drive.

NOTE *Ensure that the correct DVD-RW for the day is inserted in order to avoid mix up of the backup of a different day.*

2.) Restart the system.

10-6-4 Backup and Restore (cont'd)

3.) To restore C: drive from the DVD, press "2". The backup process may take around 30 minutes, and then a screen pops up prompting the user to remove the floppy disc and DVD. Follow the instructions.

4.) Restart the system. Press "Ctrl+Alt+Del" keys.

10-6-5 Save and Restore

Following settings are saved by the Save and Restore function: LOGIQworks user and system settings, as for example the Hanging Protocols or the Desktop-Window settings, Windows Network and Operating System settings as the IP-Address or the Host name.

Settings and data which cannot be saved by the Save and Restore utility are: DICOM image data and Windows specific user settings as for example different users who where created. Normally the personal user settings are saved by your computer administrator. Please contact him to be sure not to lose any important settings.

10-6-5-1 Save

The utility will save all user settings to the USB mass storage device. The USB mass storage device must be plugged in and you are requested to enter the assigned drive letter for your USB mass storage device (you can find the drive letter by looking in Windows Explorer for "Removable disc").

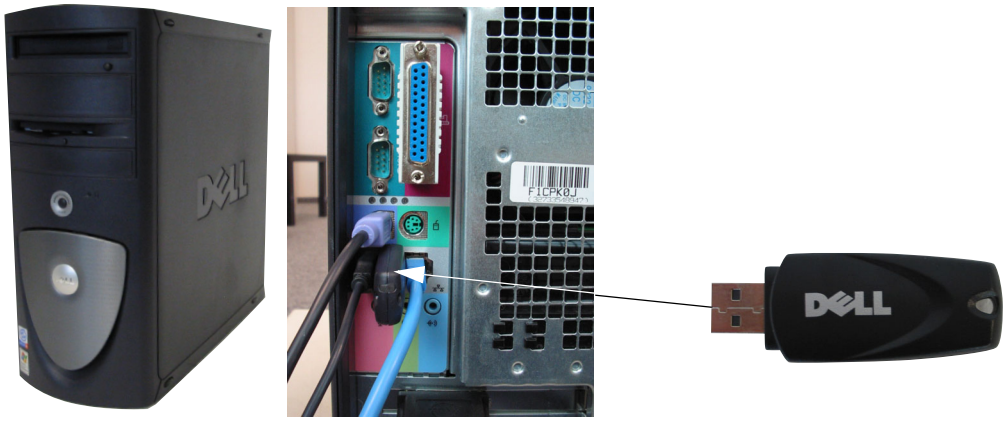

Figure 10-1

1.) Select all contents on the USB mass storage device.

2.) To Save the RA600 settings double-click the 'RA600 settings tool' icon on the desktop.

3.) Save User and/or System Data.

10-6-4-1 Backup (cont'd)

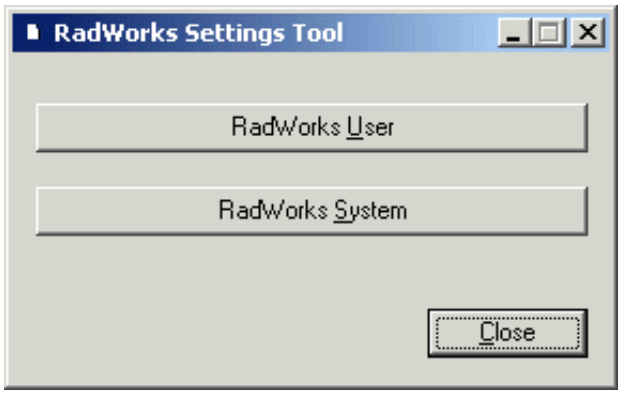

Figure 10-2 RadWorks Settings Tool

To save user settings:

1.) Click on 'RadWorks User'.

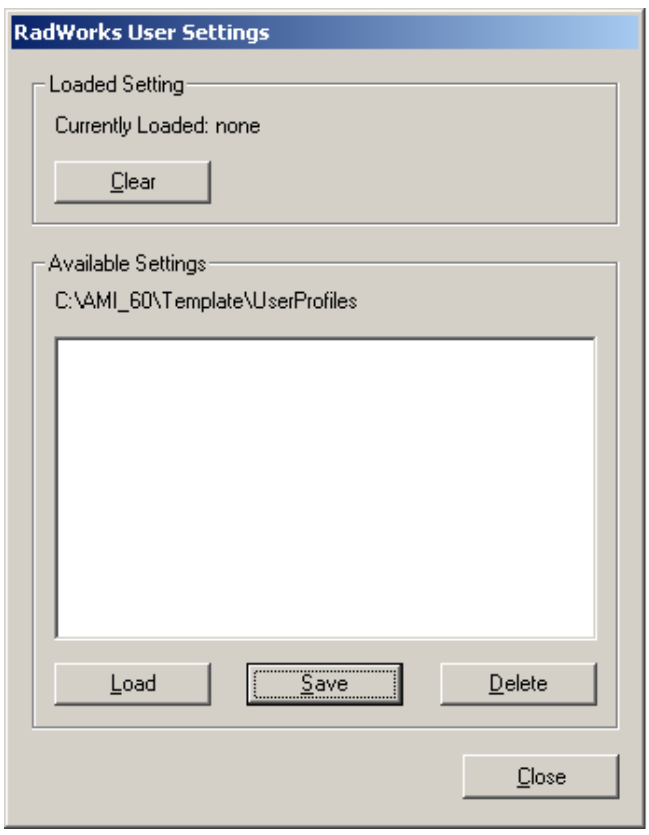

Figure 10-3 RadWorks User Settings

2.) Click on 'Save'.

10-6-4-1 Backup (cont'd)

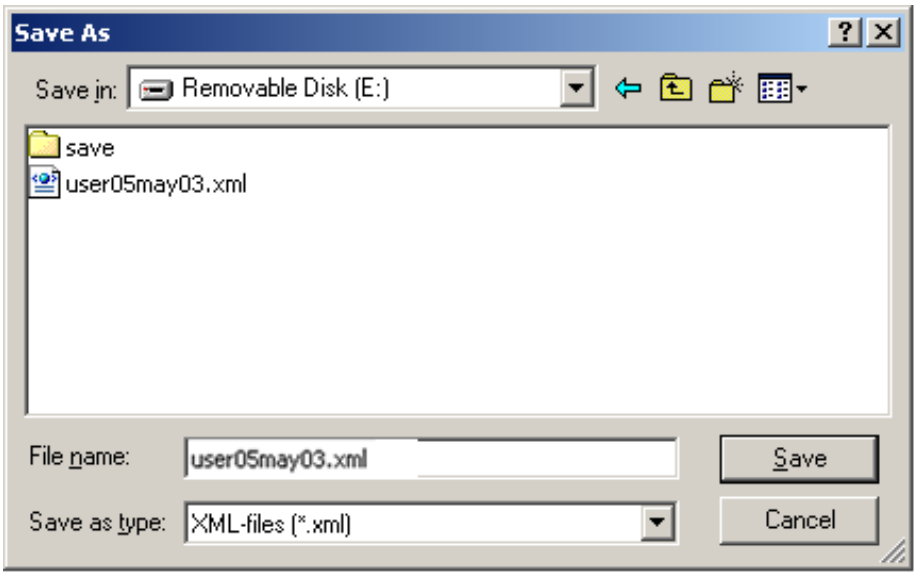

Figure 10-4 RadWorks User Settings - Save

3.) Enter a valid device (use the USB mass storage device).

4.) Enter a file name for the user settings.This file name should reflect the date and the type of settings you are storing. In this case: user settings.

5.) Click "save".

To save system settings:

1.) Click on "RadWorks System".

10-6-4-1 Backup (cont'd)

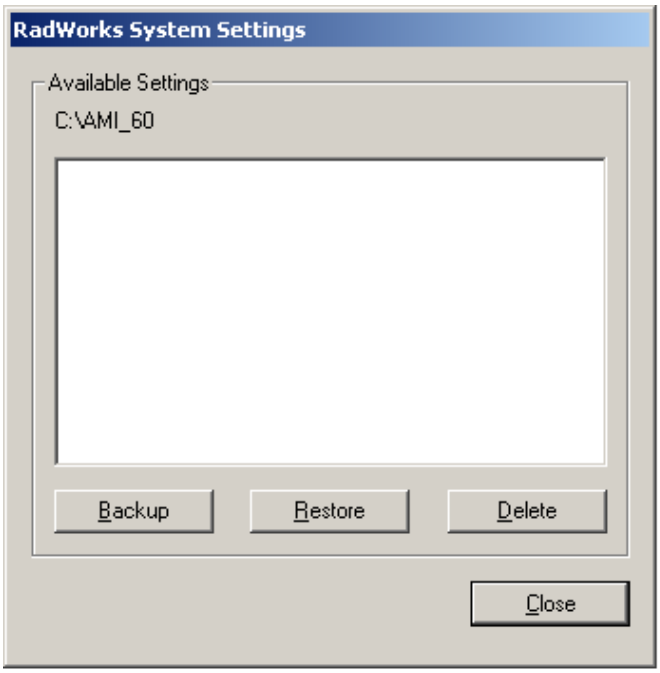

Figure 10-5 RadWorks System Settings

2.) Click on "Backup".

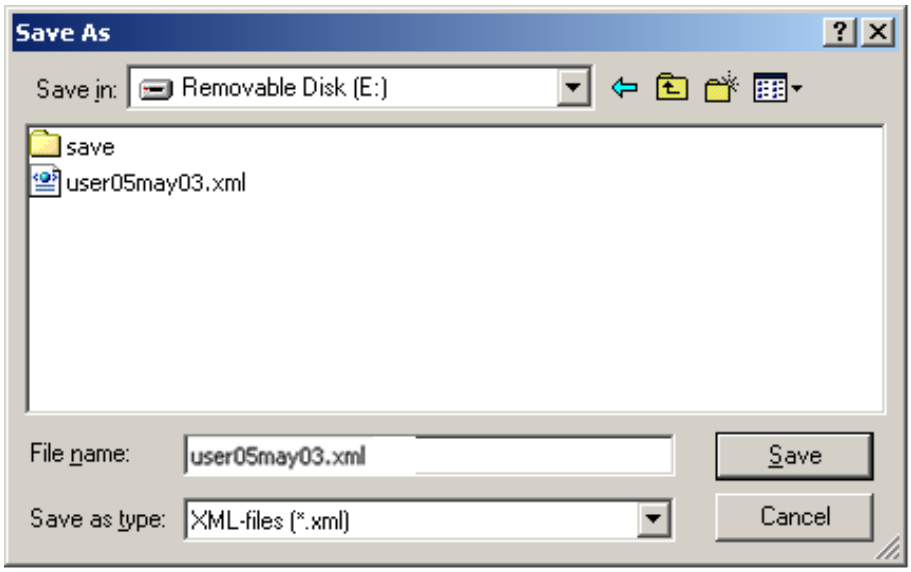

Figure 10-6 RadWorks System Settings - Save

3.) Enter a valid device (use the USB mass storage device).
4.) Enter a file name for the system settings. This file name should reflect the date and the type of settings you are storing. In this case: system settings.
5.) Click "save".
6.) Close the RadWorks Setting Tool.

10-6-4-1 Backup (cont'd)

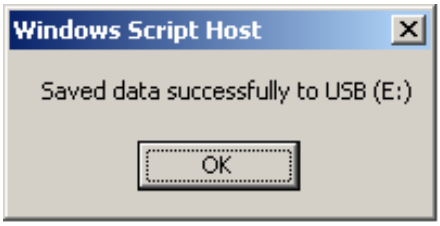

Figure 10-7 Windows Script Host - Saved successfully

7.) Open Windows Explorer to check whether the Save operation has completed successfully. Select the drive letter that represents the USB HDD and verify that three files were saved to the USB HDD.

10-6-5-2 Restore

The restore utility will help you in any cases of software or hardware corruption, to get back the original condition before the crash. In most cases the recovery procedure precedes the restore function (see Section 8-3 "Recovery Procedure" on page 8-14).

The utility will restore all user and system settings from the USB mass storage device. To use this utility you must have saved your settings with the "Save"- function before. The USB mass storage device must be plugged in and you are requested to enter the assigned drive letter for your USB mass storage device (you can find the drive letter by looking in the Windows Explorer for "Removable disk").

10-6-5-2 Restore (cont'd)

After that you have started the 'RA settings tool', you can restore User and/or System Data.

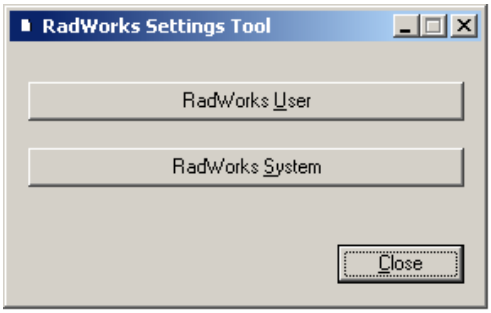

Figure 10-8 RadWorks Settings Tool

To load user settings:

1.) Click on "RadWorks User".

10-6-5-2 Restore (cont'd)

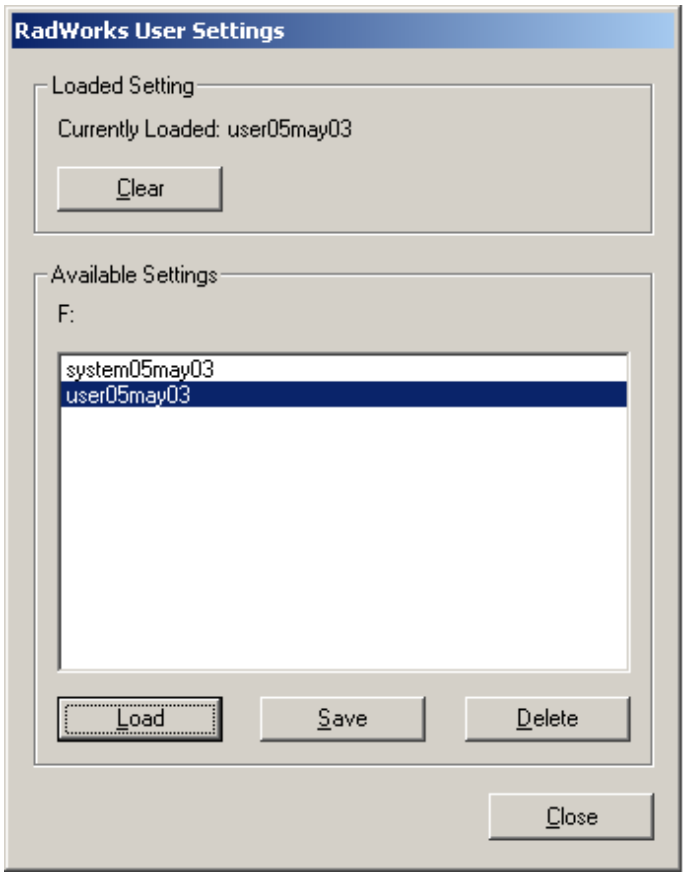

Figure 10-9 Restore RadWorks User Settings

2.) Select the user settings from the Available Settings List (see Figure 10-9). Make sure that you don't select System settings.

3.) Click on "Load".

10-6-5-2 Restore (cont'd)

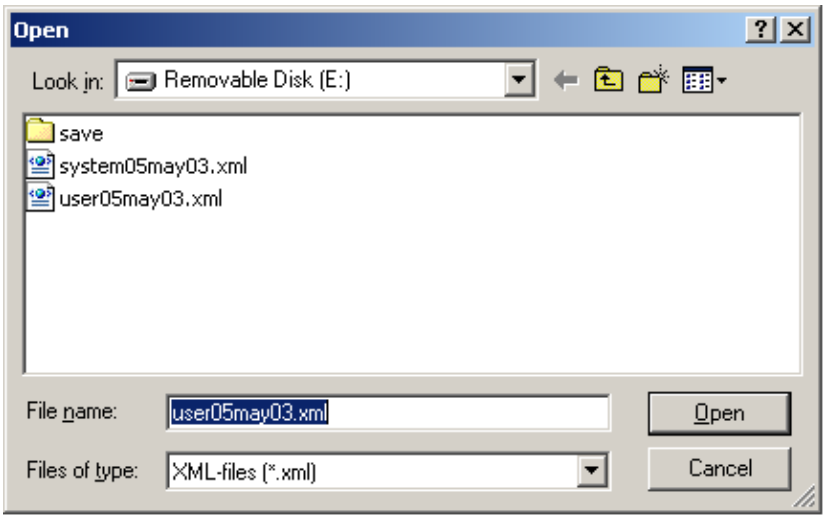

Figure 10-10 Load user settings

4.) Select a previously saved file and click "Open".

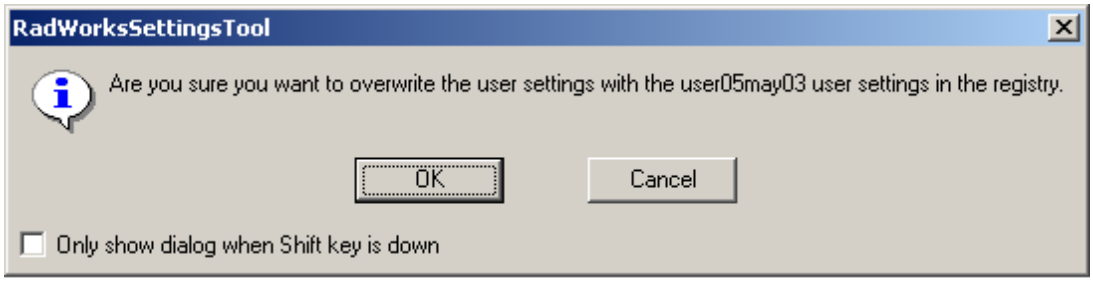

Figure 10-11 Overwriting of User Settings

5.) Confirm with "OK".

To load system settings:

1.) Click on "RadWorks System" see Figure 10-8.

10-6-5-2 Restore (cont'd)

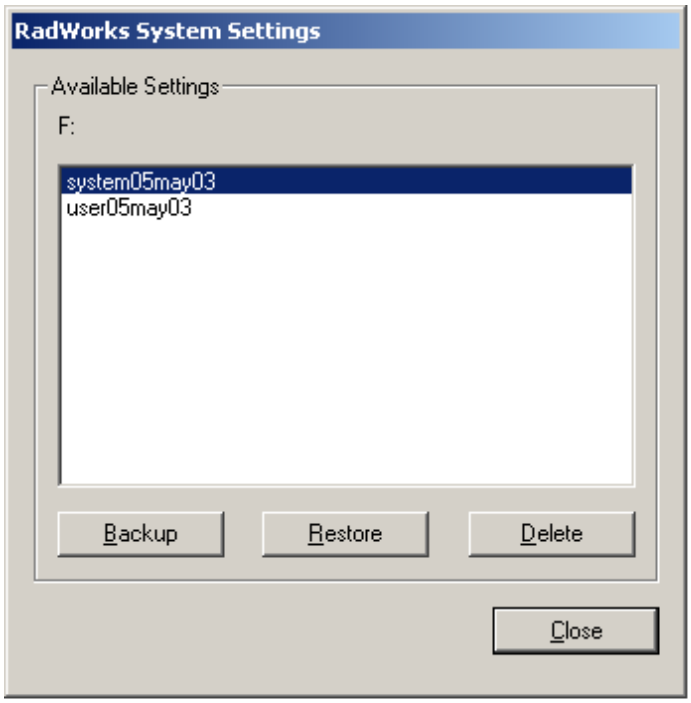

Figure 10-12 Restore RadWorks System Settings.

2.) Select the system settings from the Available Settings list (see Figure 10-12).
3.) Click on "Restore".

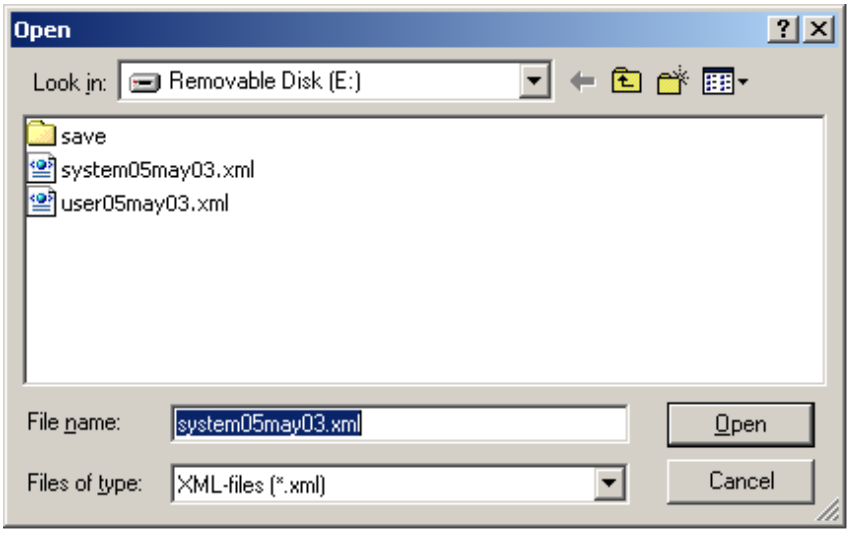

Figure 10-13 Load System Settings

4.) Pick up a previously saved file and click "Open".
5.) Close the "RadWorks Setting Tool".

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GE Healthcare

GE Medical Systems: Telex 3797371
P.O. Box 414; Milwaukee, Wisconsin 53201, U.S.A.
(Asia, Pacific, Latin America, North America)

ViewPoint Bildverarbeitung GmbH
Tel. +49 8153 93 11-0
Argelsrieder Feld 12
82234 Wessling, Germany