

GE Healthcare

Optima CT660 Phase 2.5 IB Upgrade Kit Installation

OPERATING DOCUMENTATION



5599284-1EN

Rev 2

© 2016 General Electric Company.

All rights reserved.

LEGAL NOTES

TRADEMARKS

Adobe, the Adobe logo, Acrobat, the Acrobat logo, Exchange, and PostScript are trademarks of Adobe Systems Incorporated or its subsidiaries and may be registered in certain jurisdictions.

Microsoft is a registered trademark and Windows is a trademark of Microsoft Corporation.

All other products and their name brands are trademarks of their respective holders.

COPYRIGHTS

All Material Copyrighted (c) 2016 by the GE Company, All rights reserved.

IMPORTANT PRECAUTIONS

LANGUAGE

ПРЕДУПРЕЖДЕНИЕ (BG)	<p>Това упътване за работа е налично само на английски език.</p> <ul style="list-style-type: none">• Ако доставчикът на услугата на клиента изиска друг език, задължение на клиента е да осигури превод.• Не използвайте оборудването, преди да сте се консултирали и разбрали упътването за работа.• Неспазването на това предупреждение може да доведе до нараняване на доставчика на услугата, оператора или пациента в резултат на токов удар, механична или друга опасност.
警告 (ZH-CN)	<p>本维修手册仅提供英文版本。</p> <ul style="list-style-type: none">• 如果维修服务提供商需要非英文版本，客户需自行提供翻译服务。• 未详细阅读和完全理解本维修手册之前，不得进行维修。• 忽略本警告可能对维修人员，操作员或患者造成触电、机械伤害或其他形式的伤害。
警告 (ZH-HK)	<p>本服務手冊僅提供英文版本。</p> <ul style="list-style-type: none">• 倘若客戶的服務供應商需要英文以外之服務手冊，客戶有責任提供翻譯服務。• 除非已參閱本服務手冊及明白其內容，否則切勿嘗試維修設備。• 不遵從本警告或會令服務供應商、網絡供應商或病人受到觸電、機械性或其他危險。
警告 (ZH-TW)	<p>本維修手冊僅有英文版。</p> <ul style="list-style-type: none">• 若客戶的維修廠商需要英文版以外的語言，應由客戶自行提供翻譯服務。• 請勿試圖維修本設備，除非 您已查閱並瞭解本維修手冊。• 若未留意本警告，可能導致維修廠商、操作員或病患因觸電、機械或其他危險而受傷。
UPOZORENJE (HR)	<p>Ovaj servisni priručnik dostupan je na engleskom jeziku.</p> <ul style="list-style-type: none">• Ako davatelj usluge klijenta treba neki drugi jezik, klijent je dužan osigurati prijevod.• Ne pokušavajte servisirati opremu ako niste u potpunosti pročitali i razumjeli ovaj servisni priručnik.• Zanimarite li ovo upozorenje, može doći do ozljede davatelja usluge, operatera ili pacijenta uslijed strujnog udara, mehaničkih ili drugih rizika.
VÝSTRAHA (CS)	<p>Tento provozní návod existuje pouze v anglickém jazyce.</p> <ul style="list-style-type: none">• V případě, že externí služba zákazníkům potřebuje návod v jiném jazyce, je zajištění překladu do odpovídajícího jazyka úkolem zákazníka.• Nesnažte se o údržbu tohoto zařízení, aniž byste si přečetli tento provozní návod a pochopili jeho obsah.• V případě nedodržování této výstrahy může dojít k poranění pracovníka prodejního servisu, obslužného personálu nebo pacientů vlivem elektrického proudu, respektive vlivem mechanických či jiných rizik.

ADVARSEL (DA)	<p>Denne servicemanual findes kun på engelsk.</p> <ul style="list-style-type: none">• 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 uden at læse og forstå denne servicemanual.• Manglende overholdelse af denne advarsel kan medføre skade på grund af elektrisk stød, mekanisk eller anden fare for teknikeren, operatøren eller patienten.
WAARSCHUWING (NL)	<p>Deze onderhoudshandleiding is enkel in het Engels verkrijgbaar.</p> <ul style="list-style-type: none">• Als het onderhoudspersoneel een andere taal vereist, dan is de klant verantwoordelijk voor de vertaling ervan.• Probeer de apparatuur niet te onderhouden alvorens 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.
WARNING (EN)	<p>This service manual is available in English only.</p> <ul style="list-style-type: none">• 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.
HOIATUS (ET)	<p>See teenindusjuhend on saadaval ainult inglise keeles.</p> <ul style="list-style-type: none">• 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 (FI)	<p>Tämä huolto-ohje on saatavilla vain englanniksi.</p> <ul style="list-style-type: none">• Jos asiakkaan huoltohenkilöstö 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 huoltohenkilöstön, laitteiston käyttäjän tai potilaan vahingoittuminen sähköiskun, mekaanisen vian tai muun vaaratilanteen vuoksi.
ATTENTION (FR)	<p>Ce manuel d'installation et de maintenance est disponible uniquement en anglais.</p> <ul style="list-style-type: none">• Si le technicien d'un client a besoin de ce manuel dans une langue autre que l'anglais, il incombe au client de le faire traduire.• Ne pas tenter d'intervenir sur les équipements tant que ce manuel d'installation et 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.

<p>WARNUNG (DE)</p>	<p>Diese Serviceanleitung existiert nur in englischer Sprache.</p> <ul style="list-style-type: none"> • Falls ein fremder Kundendienst eine andere Sprache benötigt, ist es Aufgabe des Kunden für eine entsprechende Übersetzung zu sorgen. • Versuchen Sie nicht diese Anlage zu warten, ohne diese Serviceanleitung gelesen und verstanden zu haben. • Wird diese Warnung nicht beachtet, so kann es zu Verletzungen des Kundendiensttechnikers, des Bedieners oder des Patienten durch Stromschläge, mechanische oder sonstige Gefahren kommen.
<p>ΠΡΟΕΙΔΟΠΟΙΗΣΗ (EL)</p>	<p>Το παρόν εγχειρίδιο σέρβις διατίθεται μόνο στα αγγλικά.</p> <ul style="list-style-type: none"> • Εάν ο τεχνικός σέρβις ενός πελάτη απαιτεί το παρόν εγχειρίδιο σε γλώσσα εκτός των αγγλικών, αποτελεί ευθύνη του πελάτη να παρέχει τις υπηρεσίες μετάφρασης. • Μην επιχειρήσετε την εκτέλεση εργασιών σέρβις στον εξοπλισμό αν δεν έχετε συμβουλευτεί και κατανοήσει το παρόν εγχειρίδιο σέρβις. • Αν δεν προσέξετε την προειδοποίηση αυτή, ενδέχεται να προκληθεί τραυματισμός στον τεχνικό σέρβις, στο χειριστή ή στον ασθενή από ηλεκτροπληξία, μηχανικούς ή άλλους κινδύνους.
<p>FIGYELMEZTETÉS (HU)</p>	<p>Ezen karbantartási kézikönyv kizárólag angol nyelven érhető el.</p> <ul style="list-style-type: none"> • Ha a vevő szolgáltatója angoltól eltérő nyelvre tart igényt, akkor a vevő felelőssége a fordítás elkészítése. • Ne próbálja elkezdni 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.
<p>AÐVÖRUN (IS)</p>	<p>Þessi þjónustuhandbók er aðeins fáanleg á ensku.</p> <ul style="list-style-type: none"> • Ef að þjónustuveitandi viðskiptamanns þarfnast annas tungumáls en ensku, er það skylda viðskiptamanns að skaffa tungumálþjónustu. • Reynið ekki að afgreiða tækið nema að þessi þjónustuhandbók hefur verið skoðuð og skilin. • Brot á sinna þessari aðvörun getur leitt til meiðsla á þjónustuveitanda, stjórnanda eða sjúklings frá raflosti, vélrænu eða öðrum áhættum.
<p>AVVERTENZA (IT)</p>	<p>Il presente manuale di manutenzione è disponibile soltanto in lingua inglese.</p> <ul style="list-style-type: none"> • Se un addetto alla manutenzione richiede il manuale in una lingua diversa, il cliente è tenuto a provvedere direttamente alla traduzione. • Procedere alla manutenzione dell'apparecchiatura solo dopo aver consultato il presente manuale ed averne compreso il contenuto. • Il mancato rispetto della presente avvertenza potrebbe causare lesioni all'addetto alla manutenzione, all'operatore o ai pazienti provocate da scosse elettriche, urti meccanici o altri rischi.
<p>警告 (JA)</p>	<p>このサービスマニュアルには英語版しかありません。</p> <ul style="list-style-type: none"> ・ 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。 ・ 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ください。 ・ 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。

<p>경고 (KO)</p>	<p>본 서비스 매뉴얼은 영어로만 이용하실 수 있습니다.</p> <ul style="list-style-type: none"> • 고객의 서비스 제공자가 영어 이외의 언어를 요구할 경우, 번역 서비스를 제공하는 것은 고객의 책임입니다. • 본 서비스 매뉴얼을 참조하여 숙지하지 않은 이상 해당 장비를 수리하려고 시도하지 마십시오. • 본 경고 사항에 유의하지 않으면 전기 쇼크, 기계적 위험, 또는 기타 위험으로 인해 서비스 제공자, 사용자 또는 환자에게 부상을 입힐 수 있습니다.
<p>BRĪDINĀJUMS (LV)</p>	<p>Šī apkopes rokasgrāmata ir pieejama tikai angļu valodā.</p> <ul style="list-style-type: none"> • Ja klienta apkopes sniedzējam nepieciešama informācija citā valodā, klienta pienākums ir nodrošināt tulkojumu. • Neveiciet aprīkojuma apkopi bez apkopes rokasgrāmatas izlasīšanas un saprašanas. • Šī brīdinājuma neievērošanas rezultātā var rasties elektriskās strāvas trieciena, mehānisku vai citu faktoru izraisītu traumu risks apkopes sniedzējam, operatoram vai pacientam.
<p>ĮSPĖJIMAS (LT)</p>	<p>Šis eksploatavimo vadovas yra tik anglų kalba.</p> <ul style="list-style-type: none"> • Jei kliento paslaugų tiekėjas reikalauja vadovo kita kalba – ne anglų, suteikti vertimo paslaugas privalo klientas. • Nemėginkite atlikti įrangos techninės priežiūros, jei neperskaitėte ar nesupratote šio eksploatavimo vadovo. • Jei nepaisysite šio įspėjimo, galimi paslaugų tiekėjo, operatoriaus ar paciento sužalojimai dėl elektros šoko, mechaninių ar kitų pavojų.
<p>ADVARSEL (NO)</p>	<p>Denne servicehåndboken finnes bare på engelsk.</p> <ul style="list-style-type: none"> • Hvis kundens serviceleverandør har bruk for 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.
<p>OSTRZEŻENIE (PL)</p>	<p>Niniejszy podręcznik serwisowy dostępny jest jedynie w języku angielskim.</p> <ul style="list-style-type: none"> • Jeśli serwisant klienta wymaga języka innego niż angielski, zapewnienie usługi tłumaczenia jest obowiązkiem klienta. • Nie próbować serwisować urządzenia bez zapoznania się z niniejszym podręcznikiem serwisowym i zrozumienia go. • Niezastosowanie się do tego ostrzeżenia może doprowadzić do obrażeń serwisanta, operatora lub pacjenta w wyniku porażenia prądem elektrycznym, zagrożenia mechanicznego bądź innego.
<p>ATENÇÃO (PT-BR)</p>	<p>Este manual de assistência técnica encontra-se disponível unicamente em inglês.</p> <ul style="list-style-type: none"> • Se outro serviço de assistência técnica solicitar a tradução deste manual, caberá ao cliente fornecer os serviços de tradução. • Não tente reparar o equipamento sem ter consultado e compreendido este manual de assistência técnica. • A não observância deste aviso pode ocasionar ferimentos no técnico, operador ou paciente decorrentes de choques elétricos, mecânicos ou outros.

<p>ATENÇÃO (PT-PT)</p>	<p>Este manual de assistência técnica só se encontra disponível em inglês.</p> <ul style="list-style-type: none"> • Se qualquer outro serviço de assistência técnica solicitar este manual noutra língua, 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 colocar em perigo a segurança do técnico, do operador ou do paciente devido a choques eléctricos, mecânicos ou outros.
<p>ATENȚIE (RO)</p>	<p>Acest manual de service este disponibil doar în limba engleză.</p> <ul style="list-style-type: none"> • 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 și înțelegerii acestui manual de service. • Ignorarea acestui avertisment ar putea duce la rănirea deparatorului, operatorului sau pacientului în urma pericolelor de electrocutare, mecanice sau de altă natură.
<p>ОСТОРОЖНО! (RU)</p>	<p>Данное руководство по техническому обслуживанию представлено только на английском языке.</p> <ul style="list-style-type: none"> • Если сервисному персоналу клиента необходимо руководство не на английском, а на каком-то другом языке, клиенту следует самостоятельно обеспечить перевод. • Перед техническим обслуживанием оборудования обязательно обратитесь к данному руководству и поймите изложенные в нем сведения. • Несоблюдение требований данного предупреждения может привести к тому, что специалист по техобслуживанию, оператор или пациент получит удар электрическим током, механическую травму или другое повреждение.
<p>UPOZORENJE (SR)</p>	<p>Ovo servisno uputstvo je dostupno samo na engleskom jeziku.</p> <ul style="list-style-type: none"> • Ako klijentov serviser zahteva neki drugi jezik, klijent je dužan da obezbedi prevodilačke usluge. • Ne pokušavajte da opravite uređaj ako niste pročitali i razumeli ovo servisno uputstvo. • Ne pokušavajte da opravite uređaj ako niste pročitali i razumeli ovo servisno uputstvo.
<p>UPOZORNENIE (SK)</p>	<p>Tento návod na obsluhu je k dispozícii len v angličtine.</p> <ul style="list-style-type: none"> • Ak zákazníkovi poskytovateľ služieb vyžaduje iný jazyk ako angličtinu, poskytnutie prekladateľských služieb je zodpovednosťou zákazníka. • Nepokúšajte sa o obsluhu zariadenia, kým si neprečítate návod na obsluhu a neporozumiete mu. • Zanedbanie tohto upozornenia môže spôsobiť zranenie poskytovateľa služieb, obsluhujúcej osoby alebo pacienta elektrickým prúdom, mechanické alebo iné ohrozenie.

ATENCIÓN (ES)	<p>Este manual de servicio sólo existe en inglés.</p> <ul style="list-style-type: none">• Si el encargado de mantenimiento de un cliente necesita un idioma que no sea el inglés, el cliente deberá encargarse de la traducción del manual.• 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 operador o el paciente sufran lesiones provocadas por causas eléctricas, mecánicas o de otra naturaleza.
VARNING (SV)	<p>Den här servicehandboken finns bara tillgänglig på engelska.</p> <ul style="list-style-type: none">• 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.
OPOZORILO (SL)	<p>Ta servisni priročnik je na voljo samo v angleškem jeziku.</p> <ul style="list-style-type: none">• Če ponudnik storitve stranke potrebuje priročnik v drugem jeziku, mora stranka zagotoviti prevod.• Ne poskušajte servisirati opreme, če tega priročnika niste v celoti prebrali in razumeli.• Če tega opozorila ne upoštevate, se lahko zaradi električnega udara, mehanskih ali drugih nevarnosti poškoduje ponudnik storitev, operater ali bolnik.
DİKKAT (TR)	<p>Bu servis kılavuzunun sadece ingilizcesi mevcuttur.</p> <ul style="list-style-type: none">• Eğer müşteri teknisyeni bu kılavuzu ingilizce dışında bir başka lisandan talep ederse, bunu tercüme ettirmek müşteriye düşer.• Servis kılavuzunu okuyup anlamadan ekipmanlara müdahale etmeyiniz.• Bu uyarıya uyulmaması, elektrik, mekanik veya diğer tehlikelerden dolayı teknisyen, operatör veya hastanın yaralanmasına yol açabilir.

DAMAGE IN TRANSPORTATION

All packages should be closely examined at time of delivery. If damage is apparent, have notation "damage in shipment" written on all copies of the freight or express bill before delivery is accepted or "signed for" by a General Electric representative or a 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.

To file a report:

- Call 1-800-548-3366 and use option 8.
- Fill out a report on <http://us44hdd21/sctq/InstallFulfill/InstalFulfillment.htm>
- Contact your local service coordinator for more information on this process.

Rev. Jan. 5, 2005

CERTIFIED ELECTRICAL CONTRACTOR STATEMENT

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. In addition, electrical feeds into the Power Distribution Unit shall be performed by licensed electrical contractors. Other connections between pieces of electrical equipment, calibrations and testing shall be performed by qualified GE Medical personnel. The products involved (and the accompanying electrical installations) are highly sophisticated, and special engineering competence is required. 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.

IMPORTANT...X-RAY PROTECTION

X-ray equipment if not properly used may cause injury. Accordingly, the instructions herein contained should be thoroughly read and understood by everyone who will use the equipment before you attempt to place this equipment in operation. The General Electric Company, Medical Systems Group, will be glad to assist and cooperate in placing this equipment in use.

Although this apparatus incorporates a high degree of protection against x-radiation other than the useful beam, no practical design of equipment can provide complete protection. Nor can any practical design compel the operator to take adequate precautions to prevent the possibility of any persons carelessly exposing themselves or others to radiation.

It is important that anyone having anything to do with x-radiation be properly trained and fully acquainted with the recommendations of the National Council on Radiation Protection and Measurements as published in NCRP Reports available from NCRP Publications, 7910 Woodmont Avenue, Room 1016, Bethesda, Maryland 20814, and of the International Commission on Radiation Protection, and take adequate steps to protect against injury.

The equipment is sold with the understanding that the General Electric Company, Medical Systems Group, its agents, and representatives have no responsibility for injury or damage which may result from improper use of the equipment.

Various protective materials and devices are available. It is urged that such materials or devices be used.

LITHIUM BATTERY CAUTIONARY STATEMENTS

CAUTION



Risk of Explosion.

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

ATTENTION



Danger d'Explosion

Il y a danger d'explosion s'il y a remplacement incorrect de la batterie.

Remplacer uniquement avec une batterie du même type ou d'un type recommandé par le constructeur. Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

OMISSIONS & ERRORS

Customers, please contact your GE Sales or Service representatives.

GE personnel, please use the Healthcare PQR Process to report all omissions, errors, and defects in this publication.

Revision History

Revision	Date	Reason for change
2	April 13, 2016	Chapter 2, Section 2: Added sub-section 2.4.
1	October 23, 2014	Initial Release

List of Effected Pages

PAGES	REVISION	PAGES	REVISION	PAGES	REVISION
1 through 50	2				

Table of Contents

Preface

Publication Conventions 19

Section 1.0

Safety & Hazard Information 19

1.1 Text and Character Representation..... 19
1.2 Graphical Representation 20

Section 2.0

Publication Conventions 21

2.1 General Paragraph and Character Styles..... 21
2.2 Page Layout..... 21
2.3 Computer Screen Output/Input Text Character Styles 22
2.4 Buttons, Switches and Keyboard Inputs (Hard & Soft Keys)..... 22

Chapter 1

Introduction..... 23

Section 1.0

Personnel Requirements 23

Section 2.0

Overview 23

Section 3.0

Preliminary Requirements..... 24

3.1 Tools and Test Equipment 24
3.2 Consumables 24
3.3 Safety..... 24
3.4 Required Conditions 24

Section 4.0

Material List 25

Chapter 2

Upgrade Procedure 27

Section 1.0

Procedure..... 27

1.1 Preparation 27
 1.1.1 Record Customer Options and Settings 27
 1.1.2 Check Default Gateway IP Address 29
 1.1.3 Confirm the setLoadHeight status 29
 1.1.4 Generate eLicense Key for new Volume Viewer Applications..... 29
 1.1.5 Remove Option Keys for Volume Viewer Application Software..... 30
 1.1.6 Save System State 30
1.2 Host Computer BIOS Upgrade 31
1.3 RAID Firmware Update..... 35

1.4	FDIP Firmware Update	35
1.5	Z800 Part Number Label Attachment.....	36
1.6	14HW30.x Load from Cold.....	37
1.7	Install Additional Option Keys for Phase 2.5.....	39
1.8	Install eLicense Key for new Volume Viewer Applications.....	39
1.9	GLU Firmware Upgrade	41
1.10	Tube Installation Certification.....	41
1.11	Flash Download	42
1.12	InSite & iLinq Checkout.....	43
Section 2.0		
Finalization.....		44
2.1	Save System State.....	44
2.2	Quality Assurance Test.....	44
2.3	Confirmation of setLoadHeight functionality.....	44
2.4	UDI Label Attachment.....	44
 Chapter A		
Default Gateway IP Address Modification		45
 Chapter B		
How to change the Table height of load foot pedals		47

Preface

Publication Conventions

Purpose: Standardize conventions for representing information in a uniform way of communicating information to a reader in a consistent manner. Conventions are used so that the reader can easily recognize the actions or decisions that must be made. There are a number of character and paragraph styles used in this publication to accomplish this task. Please become familiar with them before proceeding forward.

Section 1.0

Safety & Hazard Information

1.1 Text and Character Representation

Within this publication, different paragraph and character styles have been used to indicate potential hazards. Paragraph prefixes, such as hazard, caution, danger and warning, are used to identify important safety information. Text (Hazard) styles are applied to the paragraph contents that is applicable to each specific safety statement. Words describe the type of potential hazard that may be encountered and are placed immediately before the paragraph it modifies. Safety information will normally include:

- Type of potential Hazard
- Nature of potential injury
- Causative condition
- How to avoid or correct the causative condition

EXAMPLES OF HAZARD STATEMENTS USED

It's important that you read and understand hazard statements, and not just ignore them.



**DANGER
SEVERE
PERSONAL
INJURY**

DANGER IS USED WHEN A HAZARD EXISTS WHICH WILL CAUSE SEVERE PERSONAL INJURY OR DEATH IF INSTRUCTIONS ARE IGNORED. THEY CAN INCLUDE:


- **ELECTROCUTION**
- **CRUSHING**
- **RADIATION**




**WARNING
SERIOUS
PERSONAL
INJURY**

WARNING IS USED WHEN A HAZARD EXISTS WHICH COULD OR CAN CAUSE SERIOUS PERSONAL INJURY OR DEATH IF INSTRUCTIONS ARE IGNORED. THEY CAN INCLUDE:

- **POTENTIAL FOR SHOCK**
- **EXPOSED WIRES**
- **FAILURE TO TAG AND LOCKOUT SYSTEM POWER COULD ALLOW FOR UN-COMMANDED MOTION.**


 **CAUTION**
Minor Personal Injury
Caution is used when a hazard exists which can or could cause minor injury to self or others if instructions are ignored. They include for example:










- Loss of critical patient data
- Crush or pinch points
- Sharp objects

 **NOTICE**
Property Damage Only
Notice is used when a hazard is present that can cause property damage but has absolutely no personal injury risk. They can include:

- Disk drive will be destroyed
- Internal mechanical damage, such as to the x-ray tube
- Coasting the rotor through resonance.

1.2 Graphical Representation

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

<p>ELECTRICAL</p>  <p>LASER</p>  <p>LASER LIGHT</p>	<p>HAZARDS MECHANICAL</p>  <p>HEAT</p> 	<p>RADIATION</p>  <p>PINCH</p> 
<p>AVOID STATIC ELECTRICITY</p> 	<p>PROCEDURAL TAG AND LOCK OUT</p> 	<p>WEAR EYE PROTECTION</p>  <p>EYE PROTECTION</p>

Section 2.0 Publication Conventions

2.1 General Paragraph and Character Styles

Prefixes are used to highlight important non-safety related information. Paragraph prefixes (such as purpose, example, comment or note) are used to identify important but non-safety related information. Text styles are also applied to text within each paragraph modified by the specific prefix.

EXAMPLES OF PREFIXES USED FOR GENERAL INFORMATION

Purpose: Introduces and provides meaning as to the information contained within the chapter, section or subsection, Such as used at the beginning this chapter for example.

Note: Conveys information that should be considered important to the reader.

Example: Used to make the reader aware that the paragraph(s) that follow are examples of information possibly stated previously.

Comment: Represents "additional" information that may or may not be relevant to your situation.

2.2 Page Layout

The diagram illustrates the layout of two pages from a manual. The left page is titled 'Publication Part Number & Revision Number' and the right page is titled 'Publication Title'. Both pages show a header with 'GE Medical Systems' and 'Optima System Service Manual'. The left page contains sections 3.2.2 and 3.2.3, with a 'DANGER' symbol and a 'NOTE' symbol. The right page contains section 3.2.4, which includes a diagram of the 'ZEUS REMOTE INTERCOM X 46-288769-01-C' board. Callouts point to the part number and revision number in the header of both pages, and the title in the header of the right page. The footer of the left page shows 'Page 882' and 'Section 3.0 - Intercom'. The footer of the right page shows 'Page 883' and 'Chapter 11 - Safety'.

The current section and its title are always shown in the footer of the left (even) page.

An exclamation point in a triangle is used to indicate important information to the user.

Paragraphs preceded by **Alphanumeric** characters (e.g. numbers) contain information that must be followed in a **specific order**.

The current chapter and its title are always shown in the footer of the right (odd) page.

Paragraphs preceded by a **symbol** (e.g. bullets) contain information that has **no specific order**.

Headers and footers in this publication are designed to allow you to quickly identify your location. The document's part number and revision number appears in every header on every page. Odd

numbered page footers indicate the current chapter, its title and current page number. Even page footers show the current section and its title, as well current page number.

2.3 Computer Screen Output/Input Text Character Styles

Within this publication, mono-spaced character styles (fonts) are used to indicate computer text that's either screen input and output. Mono spaced fonts, such as courier, are used to indicate text direction. When you type at your keyboard, you are generating computer input. Occasionally you will see the math operators "greater than" and "less than" symbols used to indicate the start and finish of variable output. When reading text generated by the computer, you are reading it as computer generated output. In addition to direction, characters are italicized (e.g. *italics*) to indicate information specific to your system or site.

Example:
Fixed Output

This paragraph's fonts represents computer generated screen "fixed" output. It's output is fixed from the sense that it does not vary from application to application. It's the most commonly used style used to indicate filenames, paths and text that does not change from system to system. The character style used is a fixed width such as courier.

Example:
Variable Output

This paragraph's font represents computer screen output that is "variable". Its used to represent output that varies from application to application or system to system. Variable output is sometimes found placed between greater than and lesser than operators for clarification. For example: <variable_ouput> or <3.45.120.3>. In both cases, the < and > operators are not part of the actual input.

Example:
Fixed Input

This paragraph's font represents fixed input. It's computer input that is typed-in via the keyboard. Typed input that does not vary from application to application or system to system. Fixed text the user is required to supply as input. For example: cd /usr/3p

Example:
Variable Input

This paragraph's font represents computer input that can vary from application to application or system to system. With variable text, the user is required to supply system dependent input or information. Variable input sometimes is placed between greater-than and less-than operators. For example: <variable_input>. In these cases, the (<>) operators would be dropped prior to input. For example: ypcat hosts | grep <3.45.120.3> would be typed into the computer as ypcat hosts | grep 3.45.120.3 without the greater-than and less-than operators.

2.4 Buttons, Switches and Keyboard Inputs (Hard & Soft Keys)

Different character styles are used to indicate actions requiring the reader to press either a hard or soft button, switch or key. Physical hardware, such as buttons and switches, are called hard keys because they are hard wired or mechanical in nature. A keyboard or on/off switch would be a hard key. Software or computer generated buttons are called soft keys because they are software generated. Software driven menu buttons are an example of such keys. Soft and hard keys are represented differently in this publication.

Example:
Hard Keys

A power switch **ON/OFF** or a keyboard key like **ENTER** is indicated by applying a character style that uses both over and under-lined bold text that is bold. This is a hard key.

Example:
Soft Keys

Whereas the computer MENU button that you would click with your mouse or touch with your hand uses over and under-lined regular text. This is a soft key.

END OF SECTION

Chapter 1

Introduction

Section 1.0 Personnel Requirements

Required Persons	Preliminary Reqs	Procedure	Finalization
1	Timing Not Applicable	200 mins.	20 mins

Section 2.0 Overview

This procedure describes the necessary steps to upgrade the Optima CT660 Phase 1.5 (10HW33.8) system to Optima CT660 Phase 2.5 (14HW30.x) system.

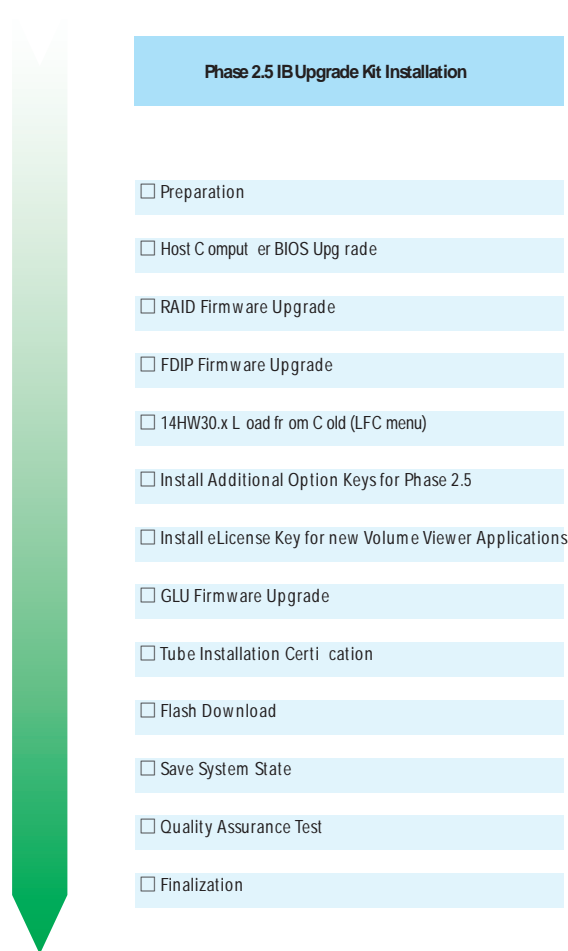


Figure 1-1 Procedure Flow

Section 3.0 Preliminary Requirements

3.1 Tools and Test Equipment

Item	Qty.	Effectivity	Part No.	Manufacturer
Standard FE Tool Kit	1	-	-	-

3.2 Consumables

Item	Qty.	Effectivity	Part No.	Manufacturer
None	1	-	-	-

3.3 Safety

No general safety information.

3.4 Required Conditions

Condition	Reference	Effectivity
Only trained service personnel should service the GE CT Scanner.	-	-

Section 4.0

Material List

Mark No.	Name	Description	Quantity
			5460670-2
1	5461931	GLU OS Upgrade Kit for Cj2.5	1
	1	5332268-2	Compact Flash Memory for GLU
	2	5443140	GLU rev3 Label for Cj2.5 GLU upgrade kit
	3	5455847	GLU rev4 Label for Cj2.5 GLU upgrade kit
2	5437815	Optima CT660 Phase 2.5 Hardware Update CD Collector with Jewel Case	1
	1	5439379	Optima CT660 Phase 2.5 BIOS Update Disk 1
	2	5439379-2	Optima CT660 Phase 2.5 RAID_FDIP Firmware Update Disk
	3	5439379-3	Optima CT660 Phase 2.5 BIOS Update Disk 2
3	5366514-3	Cable, USB_Extend, SSA key	1
4	5599284-1EN	Optima CT660 Phase 2.5 IB Upgrade Kit Installation	1
5	5389067-9	Cj P2.5 Software Collector with Rating Plate	1
6	5375974-6	Optima CT660 Upgrade Doc Collector	1
7	5566025-500	Optima CT660 P25 Base Upgrade Product Key	1
8	5405579	DVD RAM Bare Media	1
9	5549276-1EN	Optima CT660 Upgrade Feature Overview	1
12	5480528-3	Z800 Part Label	1

Table 1-1 Optima CT660 Phase 2.5 Upgrade Kit

This Page Intentionally Blank.

Chapter 2

Upgrade Procedure

Section 1.0 Procedure

1.1 Preparation

1.1.1 Record Customer Options and Settings

1.) Record the option keys installed in the system.

- | | |
|---|---|
| <input type="checkbox"/> Patient-64-Slice | <input type="checkbox"/> AutoBone * |
| <input type="checkbox"/> Direct-MPR | <input type="checkbox"/> CTColonoPro * |
| <input type="checkbox"/> Data Export | <input type="checkbox"/> CTPerfusion4 * |
| <input type="checkbox"/> SmartPrep | <input type="checkbox"/> CTPerfusion4 Neuro * |
| <input type="checkbox"/> AutomA | <input type="checkbox"/> SmartStep |
| <input type="checkbox"/> 3000 Image Series | <input type="checkbox"/> AxialShuttle |
| <input type="checkbox"/> CopyComposer | <input type="checkbox"/> HelicalShuttle |
| <input type="checkbox"/> SmartSpeed | <input type="checkbox"/> Xstream Injector |
| <input type="checkbox"/> ASIR | <input type="checkbox"/> Enhanced Xstream Injector |
| <input type="checkbox"/> NeuroFilter | <input type="checkbox"/> Enhanced Rotor Management |
| <input type="checkbox"/> 75kVA | <input type="checkbox"/> Enhanced Rotor Management-DS |
| <input type="checkbox"/> 90kVA | |
| <input type="checkbox"/> 100kVA | |
| <input type="checkbox"/> Dynamic Z-axis Tracking | |
| <input type="checkbox"/> 0_4Speed | |
| <input type="checkbox"/> Sub-0.4-Second-Scan | |
| <input type="checkbox"/> Overlapped Recon - Axial | |
| <input type="checkbox"/> Connect Pro | |
| <input type="checkbox"/> Exam Split | |
| <input type="checkbox"/> SmartScore Pro | |
| <input type="checkbox"/> CardIQ SnapShot | |
| <input type="checkbox"/> EKG Viewer | |
| <input type="checkbox"/> Noise Reduction Filter | |
| <input type="checkbox"/> CardIQSnapShot-Cine | |
| <input type="checkbox"/> DentaScan | |
| <input type="checkbox"/> VolumeViewer | |
| <input type="checkbox"/> CardEP | |
| <input type="checkbox"/> CardIQPlus * | |
| <input type="checkbox"/> AdvVesselAnalysis * | |

*: Requires regeneration of the option key by eLicense. (Refer to section [1.1.4](#) for the details.)

- 2.) Record the Archive Node setting in Remote host parameters screen.
 - a.) In Image Works desktop, select Network --> Selected Remote Host --> Update

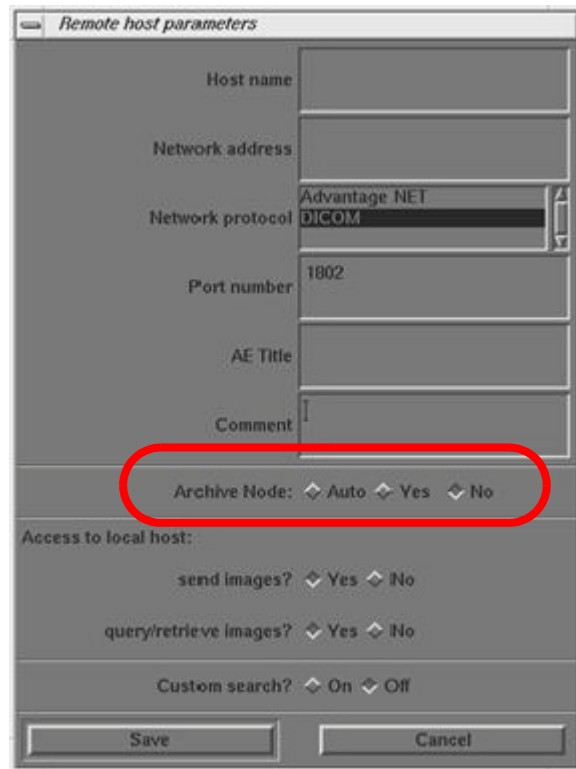


Figure 2-1 Window - Remote Host Parameters

- b.) Record the Archive Node setting (Auto/Yes/No) in the screen.
- c.) Record the settings of other remote hosts if multiple hosts are connected to the system.

Note: The Phase 2.5 software only provides 2 selections, Yes or No, for the Archive Node setting. Setting of Phase 1.5 will be converted as follows.

Phase 1.5		Phase 2.5
Auto	→	Yes
Yes	→	Yes
No	→	No

1.1.2 Check Default Gateway IP Address

- 1.) Shut down Applications from the Common Service Desktop, Utilities Tab.
- 2.) Open a Terminal Window, and log on as root:
 Type: {ctuser@hostname} su - [ENTER]
 Type the root *password* and press [ENTER]
- 3.) Launch the Configuration utility:
 Type: [root@hostname] reconfig [ENTER]
- 4.) Click [NETWORK] to display the Network Settings Screen.
- 5.) Check the Default Gateway field. If "0.0.0.0" is used, clear the settings according to [Appendix A](#).

Note: If "0.0.0.0" is entered in Default Gateway field, option software installation may fail.

1.1.3 Confirm the setLoadHeight status

Confirm current setting of setLoadHeight. That is used to customize the cradle load height. Refer to Appendix B of this manual how to do that.

1.1.4 Generate eLicense Key for new Volume Viewer Applications

If your system has the following Volume Viewer application software keys, they are not compatible with Phase 2.5 software.

Generate compatible option keys by using eLicense web tool.

<http://elicense.gehealthcare.com/elicense/>

Option name	Phase1.5	Phase2.5
B7870JB CardIQ Plus	CardIQPlus	CardIQ_Xpress_Reveal
B7870JC Advanced Vessel Analysis	AdvVesselAnalysis	AVA_Xpress
B7870JD AutoBone	AutoBone	AutoBone_Xpress
B7864KL CTC Pro on OC	CTColonoPro	CT_Colono_Pro3D_EC
B7870HM CTPerfusion4	CTPerfusion4	CT_Perfusion_4D_MultiOrgan
B7870HN CTPerfusion4Neuro	CTPerfusion4Neuro	CT_Perfusion_4D_Neuro

Table 2-1 Option Key Compatibility

Note: The eLicence web tool for Optima CT660 was set up to generate both existing elicense key and new elicense key for Phase 2.5.

Catalog ID	Description	Floatable	Application Name/Key/Number of Users
B7870JC	B7870JC Advanced Vessel Analysis	N	AdvVesselAnalysis permanent 0 00b96c49f5811000000001700 AVA_Xpress permanent 0 0273269d5f511000000000658

Table 2-2 Example of eLicense Key

Note: You will need to obtain the following information prior to generate the eLicence key.

- GON (Global Order Number) of the CT system
- Host ID of the host computer (This can be obtained by executing check_config command in Unix shell.)

For the details on the eLicense tool, register CT E-LICENSE TRAINING (COURSE ID: GEHC-TECH-AMOL-CT6002) in GE Learning.

1.1.5 Remove Option Keys for Volume Viewer Application Software

If your system has option keys listed in [Table 2-1](#), remove them by **Install Options** (Service → Configuration → Install Options).

1.1.6 Save System State

- 1.) Go to Service Desktop → Utilities
- 2.) Execute **Save System State**.

Note: Save two sets of System State and keep one set as backup.

1.2 Host Computer BIOS Upgrade

- Note: BIOS update disk 2 is not used in this upgrade. It is provided for downgrading the Host BIOS to original version.
- 1.) Insert the Optima CT660 Phase 2.5 BIOS Update Disk 1 into the Host Computer DVD Drive.
 - 2.) Shut down the system and recycle the console power.
 - 3.) Press <F10> when HP logo is displayed.
 - 4.) In the F10 setup utility, select **Storage** → **Storage Options** → **SATA Emulation** → **IDE**

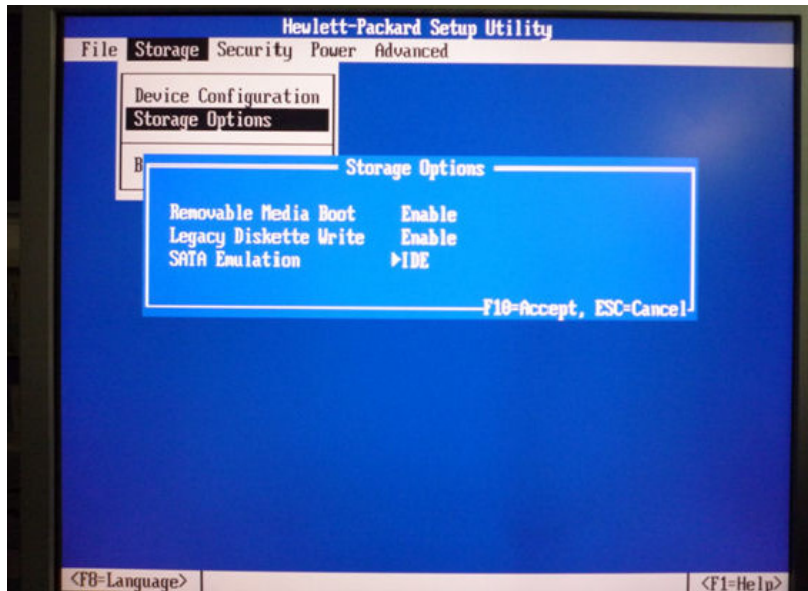


Figure 2-2 Screen - Setup Utility

- 5.) Press <F10> to accept the change.
- 6.) Select **File** → **Save Changes and Exit** and hit <Enter>.
- 7.) Press <F10> to accept the change.

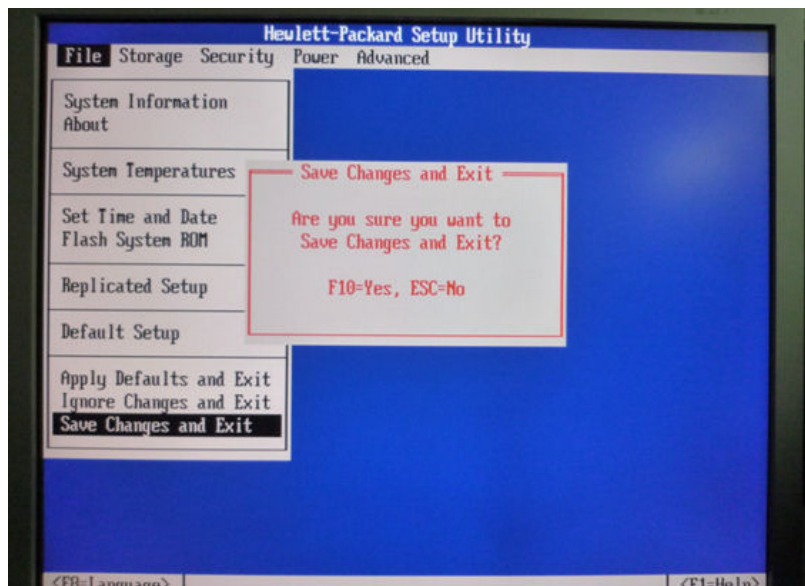


Figure 2-3 Screen - Save Changes and Exit

- 8.) In the F10 setup utility, select **File** → **Flash System ROM**
- 9.) Select **CD-ROM** in the Flash System ROM window and press <F10>.

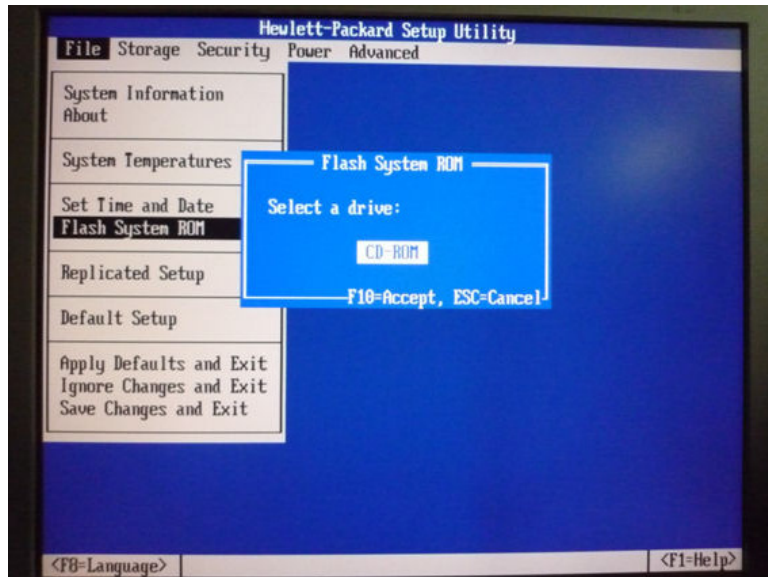


Figure 2-4 Screen - Flash System ROM

- 10.) Select **7G5_0321.BIN** and press <F10>.

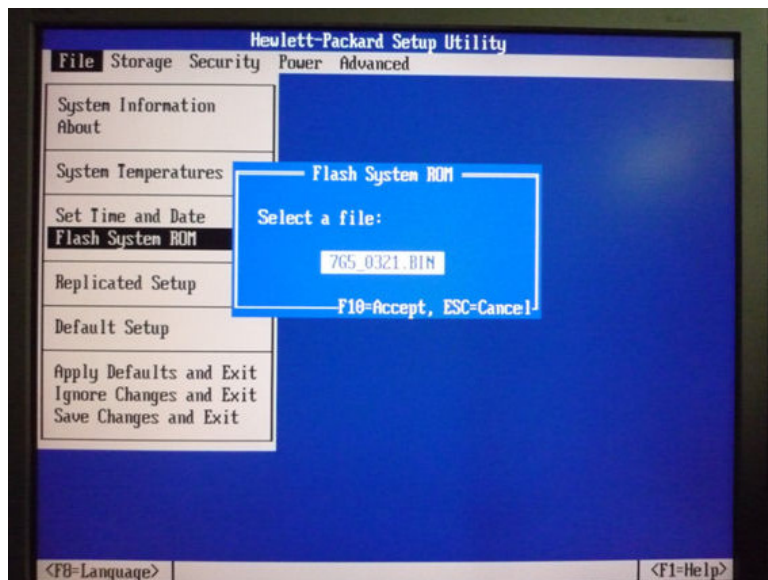


Figure 2-5 Screen - File Selecting

11.) Press <F10> in confirmation window.

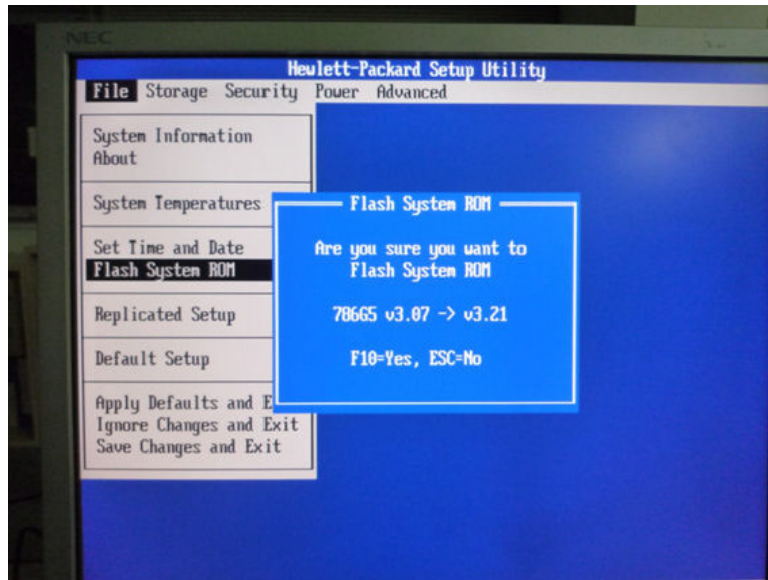


Figure 2-6 Screen - Confirmation

12.) When Success message appears press any key to reboot the host computer.

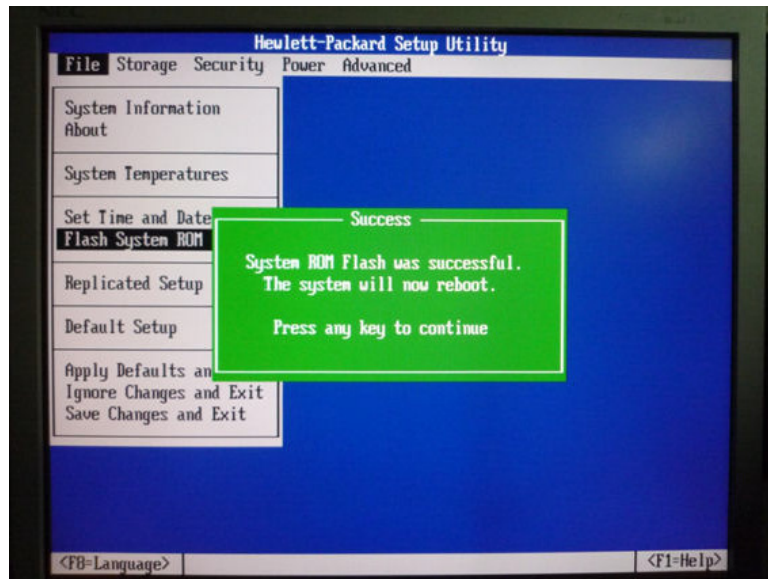


Figure 2-7 Screen - Success Message

- 13.) Press <F10> when HP logo is displayed.
- 14.) Set SATA Emulation option back to RAID+AHCI.
Select **Storage** → **Storage Options** → **SATA Emulation** → **RAID+AHCI**
- 15.) Press <F10> to accept the change.
- 16.) Select Power → OS Power Management → Runtime Power Management
- 17.) Select **Disable**.



Figure 2-8 Screen - OS Power Management

- 18.) Press <F10> to accept the change.
- 19.) Select **File** → **Save Changes and Exit** and hit <Enter>.
- 20.) Press <F10> to accept the change.
- 21.) Check that the BIOS version displayed on the lower left of HP blue screen indicates v03.21.



Figure 2-9 Screen - BIOS Version

- 22.) Remove the BIOS update CD from Host Computer DVD Drive.

1.3 RAID Firmware Update

- 1.) If Application software is up, perform Application Shutdown from Service Desktop → Utilities.
- 2.) Open a Unix shell and become root:
 - i.) `{ctuser@hostname} su -`
 - ii.) Password: `<password>`
- 3.) Perform the following command to check RAID firmware version.
 - i.) `[root@hostname]# MegaCli -AdpAllInfo -a0 -NoLog | grep "FW Version"`
- 4.) Check the displayed FW Version.
 - i.) If the output is 1.40.282-1279, upgrade is not necessary. Go to section 1.5.
 - ii.) If the output is different from 1.40.282-1279, continue the following steps.
- 5.) Insert the Optima CT660 8888 RAID Firmware update CD into DVD drive in the host.
- 6.) Perform the following steps to update RAID firmware:
 - i.) `[root@hostname]# mount /media/cdrom`
 - ii.) `[root@hostname]# cd /media/cdrom/`

Note: Scan disk failure message will appear, but ignore it.

 - iii.) `[root@hostname]# gre-raid -s`
 - iv.) `[root@hostname]# MegaCli -adpflash -f mr1078fw.rom -a0 -NoLog`
 - v.) Confirm that the following message is displayed:
Adapter 0:Flash Completed
Exit Code: 0x00
 - vi.) `[root@hostname]# reboot`
- 7.) After the system startup, open a Unix Shell and become root in the Unix Shell.
 - i.) `{ctuser@hostname} su -`
 - ii.) Password: `<password>`
- 8.) Perform the following command to check RAID firmware version.
`[root@hostname]# MegaCli -AdpAllInfo -a0 -NoLog | grep "FW Version"`
- 9.) Check the following output is shown.
FW Version : 1.40.282-1279
- 10.) Leave the Firmware update CD in DVD drive for FDIP firmware update in the next section.

1.4 FDIP Firmware Update

- 1.) Make sure the Optima CT660 8888 RAID Firmware update CD is still in the host DVD drive.
- 2.) Open a Unix shell and type the following and hit ENTER.
`{ctuser@hostname} flash_vdip -i`
- 3.) Check that "load Rev.:" number displayed in the output message.
 - i.) If it is "0xa6", upgrade is not necessary. Go to section 1.6.
 - ii.) If it is different from "0xa6", continue the following steps.
- 4.) Open a Unix shell and become root.
 - i.) `{ctuser@hostname} su -`
 - ii.) Password: `<password>`
- 5.) In Unix shell, perform the following.

- i.) `{root@hostname} mkdir /usr/g/ctuser/fdip`
- ii.) `{root@hostname} mount /mnt/cdrom`
- iii.) `{root@hostname} cp -p /mnt/cdrom/5373033-2_r3.hexout /usr/g/ctuser/fdip`
- iv.) `{root@hostname} cd /usr/g/ctuser/fdip`
- v.) `{root@hostname} md5sum 5373033-2_r3.hexout`
- 6.) Check that the value that is shown by the above command is as follows:
8cd323ed4ea93eb3a3a04e6395a54d37
- 7.) If the value is different, repeat the step 5 again.
- 8.) In Unix shell, type the following and hit ENTER.
`{root@hostname} flash_vdip -e -l0 5373033-2_r3.hexout (-l0 option means lower-case of "L" and "zero")`
- 9.) Type **y** and hit Enter if "Are you sure you want to do this ?" message appears.
- 10.) Wait a few minutes until FDIP Flash ROM process completes.
- 11.) Confirm the update of Flash ROM has been completed correctly with "verify pass" message. If "failed", return to step 8.
- 12.) In Unix shell, type the following and hit ENTER.
`{root@hostname} flash_vdip -e -l1 5373033-2_r3.hexout (-l1 option means lower-case of "L1")`
- 13.) Type **y** and hit Enter if "Are you sure you want to do this ?" message appears.
- 14.) Wait a few minutes until FDIP Flash ROM process completes.
- 15.) Confirm the update of Flash ROM has been completed correctly with "verify pass" message. If "failed", return to step 12.
- 16.) Open a Unix shell and type: `halt`.
- 17.) Power OFF the console at the front panel switch.
- 18.) Power ON the console.
- 19.) Stop at application startup.
- 20.) Open a Unix shell and type the following and hit ENTER.
`{ctuser@hostname} flash_vdip -i`
- 21.) Confirm that "load Rev: 0xa6" is displayed in the output message.
- 22.) Eject the firmware update CD from the host computer.

1.5 Z800 Part Number Label Attachment

- 1.) Remove the existing part number label from Z800 computer and attach the 5700000-3 label (P/N 5480528-3) which is included in this upgrade kit to the same location.

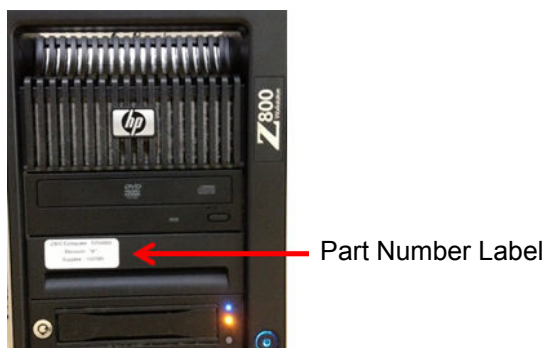


Figure 2-10 Z800 Part Number Label

1.6 14HW30.x Load from Cold

- 1.) Perform the following tasks according to **(14HW30.x) Load From Cold** procedure in Optima CT660 Service Methods CD-ROM.
 - OS Load
 - Apps Load
 - Set Date and Time
 - Install Class C & M
 - Restore system state

After completing “Restore System State”, exit LFC Menu and return to this manual.

- 2.) Reboot the system.

Note: Gantry LCD Unit will not boot up normally at this point due to application version mismatch between gantry LCD unit and Host. It will be corrected after GLU firmware upgrade described at later section.



Figure 2-11 Gantry LCD Version Mismatch Message

- 3.) Check that all Archive Node settings are successfully restored/converted.
 Go to Image Works. Select **Tools--> Network Configuration**

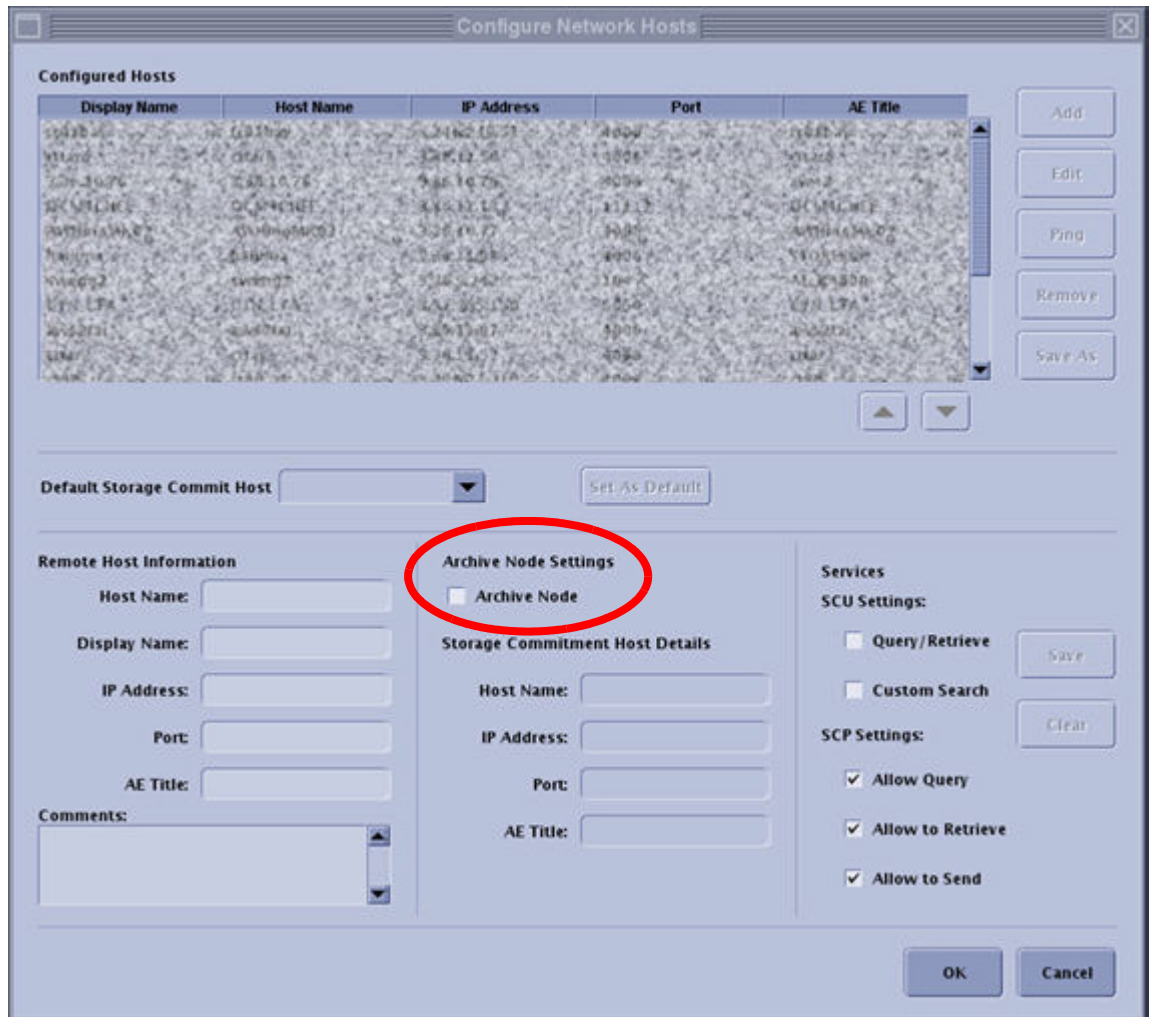


Figure 2-12 Window - Configure Network Hosts

Note: The Phase 2.5 software only provides 2 selections, Yes or No, for the Archive Node setting. Setting of Phase 1.5 will be converted as follows.

Phase 1.5		Phase 2.5
Auto	→	Yes
Yes	→	Yes
No	→	No

1.7 Install Additional Option Keys for Phase 2.5

Install the following additional option keys included in the kit.

- Dynamic Z-axis Tracking
- Dynamic Transition
- Auto Filter & Transfer (Non ASIR system only)



NOTICE Auto Filter & Transfer is only applicable for non ASIR system. Do not install it to ASIR option installed system.

1.8 Install eLicense Key for new Volume Viewer Applications

If you have generated eLicense Key(s) for new Volume Viewer applications at section 1.1.4, install them at this timing.

- 1.) Open **Install Options** from **Service** → **Configuration**. Then select **Install**.

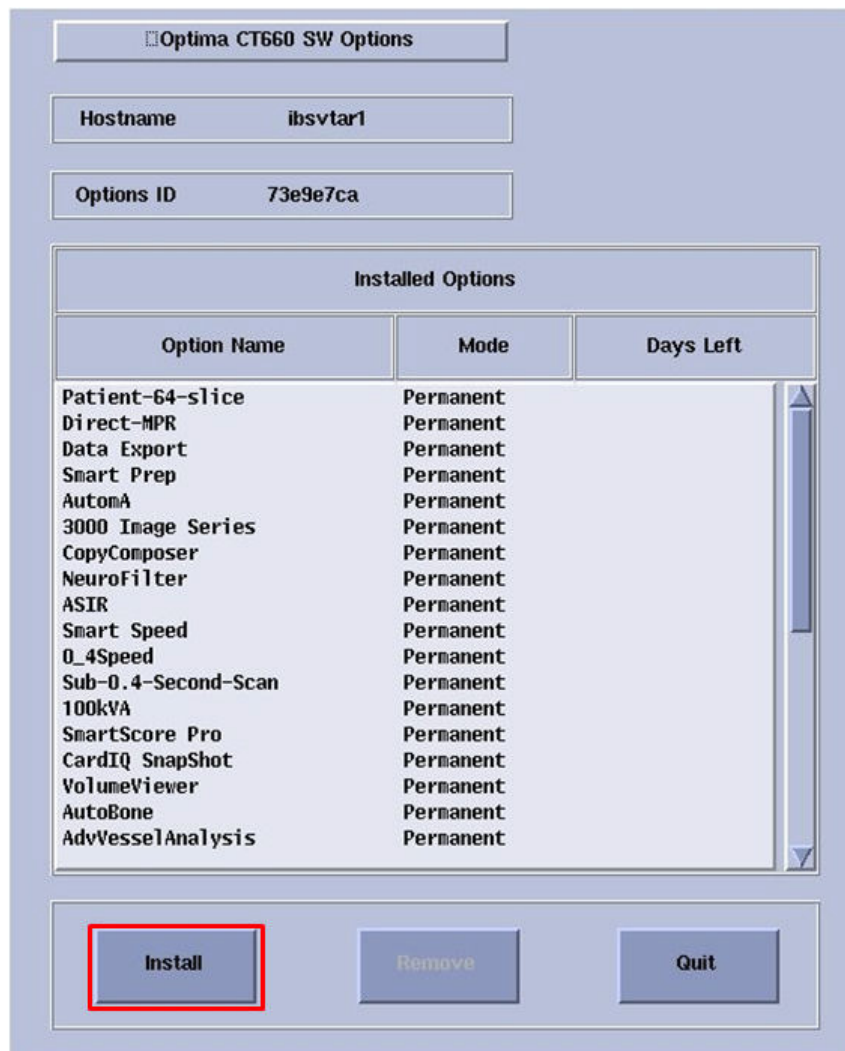


Figure 2-13 Install Option Window

- 2.) Select **Permanent**

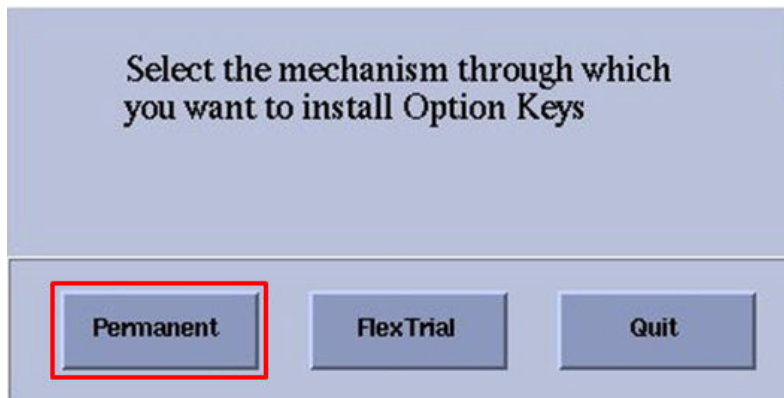


Figure 2-14 Selection Window - Permanent

- 3.) Select **Manual**

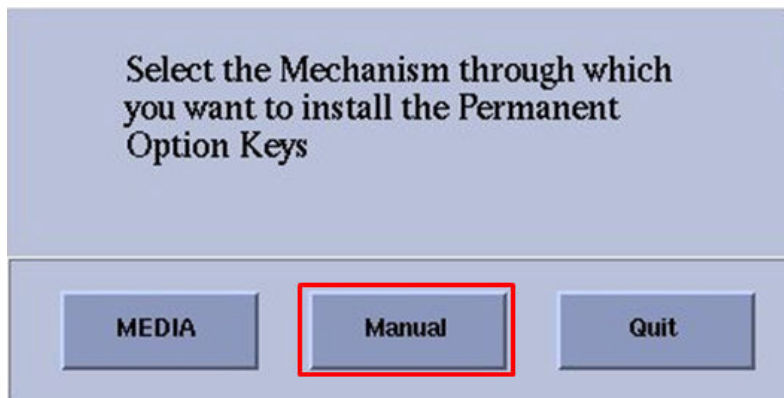


Figure 2-15 Selection Window - Manual

- 4.) Enter eLicense key string in **ENTER THE LICENCE STRING** window.



Figure 2-16 Window - eLicense Key Input

- 5.) Select [Quit] to exit Instal Options window.
6.) Reboot the system.
7.) After application is started up, check that all options are loaded by Verify Options in Common Service Desktop - Configuration tab.

1.9 GLU Firmware Upgrade

- 1.) Replace the Compact Flash Memory Card in Gantry LCD Unit with new one (P/N 5332268-2) which is included in this upgrade kit. Refer to **Xtream Display CF Memory Card Replacement** procedure in Optima CT660 Service Methods CD-ROM.
- 2.) Attach part number label onto the existing label on Gantry LCD Unit.

GPN/Revision of Gantry LCD Unit	New Label
5332266 rev8 or later 5332266-15 any revision	5332266-02 rev4
5332266 rev7 or earlier	5332266-02 rev3



Figure 2-17 Label Attachment

- 3.) Restore gantry left side cover and top covers.
- 4.) Turn ON the Axial Drive, HVDC and 120 VAC switches on the gantry's Service Switch Panel.
- 5.) Restore gantry right side cover.
- 6.) Turn ON the console power.
- 7.) Confirm the Gantry LCD unit starts up normally.

1.10 Tube Installation Certification

- 1.) Perform the Tube Install Certification procedure according to **Tube Install Certification** procedure in Optima CT660 Service Methods CD-ROM.
- 2.) When completed, continue with Flash Download.

1.11 Flash Download

- 1.) Perform the Flash Download Utility found on the Common Service Desktop - Utilities Tab, select [Flash Download].

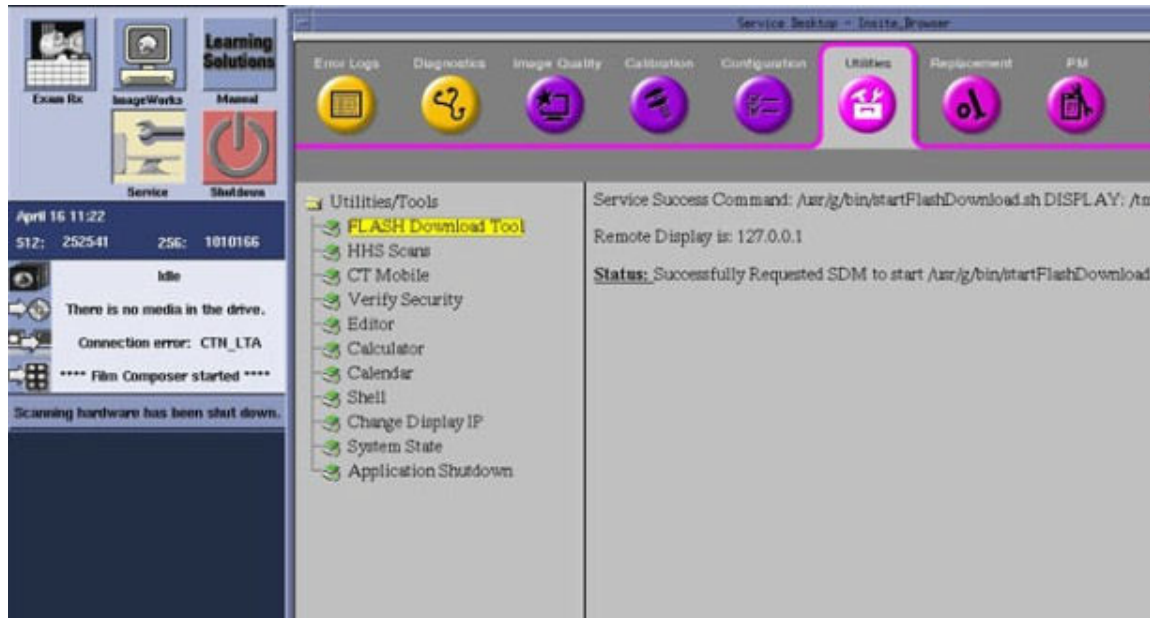


Figure 2-18 Common Service Desktop - Utilities Tab, Flash Download

Note: The Flash Download takes 5 - 30 minutes, depending on which subsystems need firmware updating.

- 2.) When the Flash Download Window opens, Select [Update].



Figure 2-19 Flash Download Window

- 3.) Once the Gantry Hardware Flash Downloads successfully, select [Dismiss].
- 4.) Close the Common Service Desktop.
- 5.) Reconnect the Hospital Network cable at the rear of the Operator Console that was disconnected at the beginning of the LFC.
- 6.) Select Shutdown icon on the Desktop and restart the system.

1.12 InSite & iLinq Checkout

If the system has class M software and previously InSite and/or iLinq was enabled, perform the checkout at this time.

Note: With new software version, system needs to be checked out with new model type “_SUSE_IIP4”.

Section 2.0 Finalization

2.1 Save System State

- 1.) Perform the System State Save and Restore procedure and save a System State Backup to either DVD-RAM or USB Media.
- 2.) Save the System State Backup media in a safe and secure location for future service activity.

2.2 Quality Assurance Test

- 1.) Perform FastCal.
- 2.) Perform Quality Assurance Test according to **Quality Assurance Test** procedure in Optima CT660 Service Methods CD-ROM.

Note: Dynamic Z-axis Tracking may effect on CT number for helical scan. If CT number for QA3 8x5/p0.516/120kV/135mA/1s is failed, perform standalone Spectral Calibration for 120kV, 40mm, Small SFOV.

2.3 Confirmation of setLoadHeight functionality

If previously executed setLoadHeight command to set customized load height at foot pedal, confirm the height is same as before version up. If the height is different, execute setLoadHeight command again to set correct value.

2.4 UDI Label Attachment

Put UDI label (5720566) in available space around the system label on the gantry that can be visible from outside and can be scanned by a barcode reader. (Putting it vertically is also OK.)



Both direction is OK.
(label content is just sample.)



Figure 2-20 UDI Label

Appendix A

Default Gateway IP Address Modification

If "**0.0.0.0**" is used in default gateway field, clear the wrong default gateway information according to the following procedure.

- 1.) Delete the wrong default address from Network setting in reconfig.
 - a.) Open a Unix shell and login as root.
 - b.) Type : `reconfig` and press [ENTER].
 - c.) Go to [Network] tab.
 - d.) Delete Default Gateway address and leave it blank.
 - e.) Click [ACCEPT].
 - f.) When system display a prompt to reboot, select **[No]**.
- 2.) Delete the wrong default gateway address from `/etc/sysconfig/network/routes`
 - a.) Open a Unix shell and login as root.
 - b.) Type: `cat /etc/sysconfig/network/routes`
 - c.) Confirm the following line is included in the file:
`default 0.0.0.0 - -`
 - d.) Type: `sed -i "/default 0.0.0.0/d" /etc/sysconfig/network/routes` and press [ENTER].
 - e.) Type: `cat /etc/sysconfig/network/routes`
 - f.) Confirm the following line was deleted from the file.
`default 0.0.0.0 - -`
 - g.) Type: `reboot` and press [ENTER].

This Page Intentionally Blank.

Appendix B

How to change the Table height of load foot pedals

- 1.) Open a Unix Shell and type the below commands:

```
{ctuser@hostname}/usr/g/GEfirm/setLoadHeight
```

then press [Enter], following message pop up:

```
*** Load Hight Tool for HP/VCT ***  
Current setting is 210  
[1] : 170 mm  
[2] : 190 mm  
[3] : 210 mm  
[0] : quit.  
Enter # to Change or quit?  
=  
Enter # to Change or quit?
```
- 2.) Input the selected number according to customer's request, then press [Enter]. Below is example of setting 190 mm:

```
Enter # to Change or quit?  
=2  
Succeeded : <190>-> /usr/g/fw/configure/uif_characterization.cfg
```
- 3.) Execute Scan Hardware Reset.

This Page Intentionally Blank.

© 2016, General Electric Company. All Rights Reserved.

www.gehealthcare.com



Imagination at work