

GE Healthcare

# Service Pack 2.0 Installation Instructions

**APPLIES TO:**

**HiSpeed QX/i, BrightSpeed, BrightSpeed Select, LightSpeed 1X, 2X, 3X,  
4X, 5X, 7X**

**NOT APPLICABLE TO: LightSpeed RT<sup>16</sup> and Xtra**

OPERATING DOCUMENTATION



5309078-1EN

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## IMPORTANT PRECAUTIONS

### LANGUAGE

#### ПРЕДУПРЕЖДЕНИЕ

(BG)

- ТОВА УПЪТВАНЕ ЗА РАБОТА Е НАЛИЧНО САМО НА АНГЛИЙСКИ ЕЗИК.
- АКО ДОСТАВЧИКЪТ НА УСЛУГАТА НА КЛИЕНТА ИЗИСКА ЕЗИК, РАЗЛИЧЕН ОТ АНГЛИЙСКИ, 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 ПАЦИЕНТ В РЕЗУЛТАТ НА ТОКОВ УДАР ИЛИ МЕХАНИЧНА ИЛИ ДРУГА ОПАСНОСТ.

#### 警告

(ZH-CN)

- 本维修手册仅提供英文版本。
- 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。

#### VÝSTRAHA

(CS)

- TENTO PROVOZNÍ NÁVOD EXISTUJE POUZE V ANGLICKÉM JAZYCE.
- 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 V LIVEM ELEKTRICKÉHO PROUDU, RESPEKTIVE V LIVEM MECHANICKÝCH ČI JINÝCH RIZIK.

#### ADVARSEL

(DA)

- 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 har været konsulteret og er forstået.
- MANGLENDE OVERHOLDELSE AF DENNE ADVARSEL KAN MEDFØRE SKADE PÅ GRUND AF ELEKTRISK, MEKANISK ELLER ANDEN FARE FOR TEKNIKEREN, OPERATØREN ELLER PATIENTEN.

## WAARSCHUWING

(NL)

- 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.

## WARNING

(EN)

- 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, OR FROM MECHANICAL OR OTHER HAZARDS.

## HOIATUS

(ET)

- KÄESOLEV TEENINDUSJUHEND ON SAADAVAL AINULT INGLISE KEELES.
- KUI KLIENDITEENINDUSE OSUTAJA NÕUAB JUHENDIT INGLISE KEELEST ERINEVAS KEELES, VASTUTAB KLIENT TÖLKETEENUSE 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)

- TÄMÄ HUOLTO-OHJE ON SAATAVILLA VAIN ENGLANNIKSI.
- 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)

- CE MANUEL DE SERVICE N'EST DISPONIBLE QU'EN ANGLAIS.
- SI LE TECHNICIEN DU CLIENT A BESOIN DE CE MANUEL DANS UNE AUTRE LANGUE QUE L'ANGLAIS, C'EST AU CLIENT QU'IL INCOMBE DE LE FAIRE TRADUIRE.
- NE PAS TENTER D'INTERVENIR SUR LES EQUIPEMENTS TANT QUE LE MANUEL SERVICE N'A PAS ETE CONSULTE 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

(DE)

- DIESE SERVICEANLEITUNG EXISTIERT NUR IN ENGLISCHER SPRACHE.
- 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.

## ΠΡΟΕΙΔΟΠΟΙΗΣΗ

(EL)

- 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 ΕΠΙΧΕΙΡΗΣΤΕ 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

(HU)

- 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 ÁRAMÚTÉS, MECHANIKAI VAGY EGYÉB VESZÉLYHELYZET MIATTI SÉRÜLÉSÉT EREDMÉNYEZHETI.

## AÐVÖRUN

(IS)

- ÞESSI ÞJÓNUSTUHANDBÓK ER EINGÖNGU FÁANLEG Á ENSKU.
- EF AÐ ÞJÓNUSTUVEITANDI VIÐSKIPTAMANNS ÞARFNAST ANNAS TUNGUMÁLS EN ENSKU, ER ÞAÐ SKYLDA VIÐSKIPTAMANNS AÐ SKAFFA TUNGUMÁLAPJÓNUSTU.
- 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.

## AVVERTENZA

(IT)

- IL PRESENTE MANUALE DI MANUTENZIONE E DISPONIBILE SOLTANTO IN INGLESE.
- SE UN ADDETTO ALLA MANUTENZIONE ESTERNO ALLA GEMS RICHIEDE IL MANUALE IN UNA LINGUA DIVERSA, IL CLIENTE E TENUTO A PROVVEDERE DIRETTAMENTE ALLA TRADUZIONE.
- SI PROCEDA ALLA MANUTENZIONE DELL'APPARECCHIATURA SOLO DOPO AVER CONSULTATO IL PRESENTE MANUALE ED AVERNE COMPRESO IL CONTENUTO
- IL NON RISPETTO 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.

## 警告

(JA)

- このサービスマニュアルには英語版しかありません。
- 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。

## 경고

(KO)

- 본 서비스 지침서는 영어로만 이용하실 수 있습니다.
- 고객의 서비스 제공자가 영어 이외의 언어를 요구할 경우, 번역 서비스를 제공하는 것은 고객의 책임입니다.
- 본 서비스 지침서를 참고했고 이해하지 않는 한은 해당 장비를 수리하려고 시도하지 마십시오.
- 이 경고에 유의하지 않으면 전기 쇼크, 기계상의 혹은 다른 위험으로부터 서비스 제공자, 운영자 혹은 환자에게 위해를 가할 수 있습니다.

## BRĪDINĀJUMS

(LV)

- ŠĪ APKALPES ROKASGRĀMATA IR PIEEJAMA TIKAI ANGLŪ VALODĀ.
- JA KLIENTA APKALPES SNIEDZĒJAM NEPIECIEŠAMA INFORMĀCIJA CITĀ VALODĀ, NEVIS ANGLŪ, 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

(LT)

- ŠIS EKSPLOATAVIMO VADOVAS YRA PRIEINAMAS TIK ANGLŪ KALBA.
- JEI KLIENTO PASLAUGŲ TIEKĒJAS REIKALAUJA VADOVO KITA KALBA – NE ANGLŪ, NUMATYTI VERTIMO PASLAUGAS YRA KLIENTO ATSAKOMYBĖ.
- NEMĒGINKITE ATLIKTI ĮRANGOS TECHNINĖS PRIEŽIŪROS, NEBENT ATSIŽVELGĖTE Į ŠĮ EKSPLOATAVIMO VADOVĄ IR JĮ SUPRATOTE.
- JEI NEATKREIPSITE DĖMESIO Į ŠĮ PERSPĖJIMĄ, GALIMI SUŽALOJIMAI DĖL ELEKTROS ŠOKO,
- MECHANINIŲ AR KITŲ PAVOJŲ PASLAUGŲ TIEKĖJUI, OPERATORIUI AR PACIENTUI.

## ADVARSEL

(NO)

- 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

(PL)

- NINIEJSZY PODRĘCZNIK SERWISOWY DOSTĘPNY JEST JEDYNIIE W JĘZYKU ANGIELSKIM.
- JEŚLI DOSTAWCA USŁUG KLIENTA WYMAGA JĘZYKA INNEGO NIŻ ANGIELSKI, ZAPEWNIENIE USŁUGI TŁUMACZENIA JEST OBOWIĄZKIEM KLIENTA.
- NIE PRÓBOWAĆ SERWISOWAĆ WYPOSAŻENIA BEZ ZAPOZNANIA SIĘ I ZROZUMIENIA NINIEJSZEGO PODRĘCZNIKA SERWISOWEGO.
- NIEZASTOSOWANIE SIĘ DO TEGO OSTRZEŻENIA MOŻE SPOWODOWAĆ URAZY DOSTAWCY USŁUG, OPERATORA LUB PACJENTA W WYNIKU PORAŻENIA ELEKTRYCZNEGO, ZAGROŻENIA MECHANICZNEGO BĄDŹ INNEGO.

## ATENÇÃO

(PT)

- 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 TENDE REPARAR O EQUIPAMENTO SEM TER CONSULTADO E COMPREENDIDO ESTE MANUAL DE ASSISTÊNCIA TÉCNICA
- O NÃO CUMPRIMENTO DESTE AVISO PODE POR EM PERIGO A SEGURANÇA DO TÉCNICO, OPERADOR OU PACIENTE DEVIDO A CHOQUES ELÉTRICOS, MECÂNICOS OU OUTROS.

## ATENȚIE

(RO)

- 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 ȘI 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!

(RU)

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

## UPOZORNENIE

(SK)

- TENTO NÁVOD NA OBSLUHU JE K DISPOZÍCII LEN V ANGLIČTINE.
- AK ZÁKAZNÍKOV POSKYTOVATEĽ SLUŽIEB VYŽADUJE INÝ JAZYK AKO ANGLIČTINU, POSKYTNUTIE PREKLADATEĽSKÝCH SLUŽIEB JE ZODPOVEDNOSŤOU ZÁKAZNÍKA.
- NEPOKÚŠAJTE SA O OBSLUHU ZARIADENIA SKÔR, AKO SI NEPREČÍTATE NÁVOD NA OBLUHU A NEPOROZUMIETE MU.
- ZANEDBANIE TOHTO UPOZORNENIA MÔŽE VYÚSTIŤ DO ZRANENIA POSKYTOVATEĽA SLUŽIEB, OBSLUHUJÚCEJ OSOBY ALEBO PACIENTA ELEKTRICKÝM PRÚDOM, DO MECHANICKÉHO ALEBO INÉHO NEBEZPEČENSTVA.

## ATENCION

(ES)

- ESTE MANUAL DE SERVICIO SOLO EXISTE EN INGLES.
- SI ALGUN PROVEEDOR DE SERVICIOS AJENO A GEMS SOLICITA UN IDIOMA QUE NO SEA EL INGLES, ES RESPONSABILIDAD DEL CLIENTE OFRECER UN SERVICIO DE TRADUCCION
- NO SE DEBERA DAR SERVICIO TECNICO 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)

- 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 (TR)

- BU SERVİS KILAVUZUNUN SADECE İNGİLİZCESİ MEVCUTTUR.
- EĞER MÜŞTERİ TEKNİSYENİ BU KILAVUZU İNGİLİZCE DIŞINDA BİR BAŞKA LİSANDAN TALEP EDERSE, BUNU TERCÜME ETTİRMEK MÜŞTERİYE DÜŞER.
- SERVİS KILAVUZUNU OKUYUP ANLAMADAN EKİPMANLARA MÜDAHALE ETMEYİNİZ.
- BU UYARIYA UYULMAMASI, ELEKTRİK, MEKANİK VEYA DİĞER TEHLİKELERDEN DOLAYI TEKNİSYEN, OPERATÖR VEYA HASTANIN YARALANMASINA YOL AÇABİLİR.

### 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 General Electric 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.

To file a report:

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

### 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, Healthcare 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, Healthcare 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.

**IMPORTANT...RADIOACTIVE MATERIAL HANDLING**

Only employees formally trained in radioactive materials handling and this equipment are authorized by the GE Healthcare Radiation Safety Officer to use radioactive materials to service this equipment. GE Healthcare Services is required to notify the applicable U.S. state agency PRIOR to any source service event involving pin source handling. See NUC/PET Radioactive material guides for specific instruction or contact your EHS Specialist.

A radiation survey must be performed when a pin source has been removed and replaced. See Radiation Survey Form Instructions or contact your EHS Specialist.  
Rev 2 (July 21, 2005)

**OMISSIONS & ERRORS**

Customers, please contact your GE Sales or Service representatives.  
GE personnel, please use the GE Healthcare iTrak Process to report all omissions, errors, and defects in this publication.

### REVISION HISTORY

Rev	Date	Reason For Change
1	4/21/2008	Initial Creation of Document
2	5/1/2008	Updated "Before you begin", sections 3.8, 4.3, and Appendix A
3	5/9/2008	Updated section 1 to exclude RT <sup>16</sup> and Xtra
4	5/20/2008	Updated with issues found during validation (refer to SPR#: FCTge36451)
5	8/20/2008	Updated with feedback from F3 pilots

This cover sheet controls the revision status of this entire document. The revision of all sheets of this document will be the same. The latest revision of this DOCUMENT is kept in MyWorkshop <http://gemselib.med.ge.com/ematrix/common/emxNavigator.jsp>

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## BEFORE YOU BEGIN

This document outlines the steps necessary to install Service Pack 2.0 on different system types. Please refer to the table below, find your system type, and proceed to the corresponding section.

SYSTEM TYPE	SECTION
VCT, HiSpeed QX/i, and LightSpeed 1.X – 5.X (excluding HP60, RT <sup>16</sup> , and Xtra)	1
BrightSpeed Power and LightSpeed 5.X HP60	2
BrightSpeed Select	3

There are two additional sections found in this document:

- **Section 4** outlines the steps necessary to uninstall Service Pack 2.0 if needed.

Please note that Service Pack 2.0 supports the following:

- 1) New ICOM (part# 2404320-2)
- 2) HP XW8400 Host Computer
- 3) New Languages: Dutch, Danish, Swedish, Norwegian, Finnish, and European Portuguese
- 4) Quality & Safety fixes (Check Release Notes for additional information)

**WARNING:** Service Pack 2.0 contains numerous safety fixes. Removal of Service Pack 2.0 will require the customer to sign an FMI refusal form acknowledging potential consequences.

- **Appendix A** outlines the steps necessary to reconfigure the system into a different UI language, keyboard selection, and setting the station name. Please note that this section is only executed if the customer requests to have the system reconfigured to a new language and/or set the *Station Name*. **DO NOT perform this section if the customer makes no such request. DO NOT ask/notify the customer regarding these new languages. DO NOT ask the customer if they would like to reconfigure their system into a new language.**
- **Appendix B** outlines the steps necessary to install Service Pack 2 from the **Software Download** directory. Service Pack 2 will be downloaded to all sites on the FMI 25407 effectivity with broadband connectivity and insite™ connectivity.

**NOTE:** Please note that certain applications (AutoBone, Advanced Vessel Analysis, CardIQ Pro, CardIQ Plus, CardEP, CTC Pro, CTC Plus, and Dentscan) are not supported by European Portuguese, Danish, Dutch, Finnish, Norwegian, and Swedish.

# 1. VCT, HISPEED QXI, AND LIGHTSPEED 1X – 5X (EXCLUDING HP60, RT<sup>16</sup>, AND XTRA)

This section outlines the steps necessary to install Service Pack 2.0 on a **LightSpeed 1X – 5X (excluding HP60, RT<sup>16</sup>, and Xtra), HiSpeed QX/i or VCT** system. If your system is different, please refer to the table of contents for the appropriate section.

## 1.1. Save System State

A current System State, labeled “**Before SP2**”, must be available before attempting any software or hardware modification. A second System State, labeled “**SP2 System State**”, will be saved following Service Pack 2 load. If a current System State is not available, complete Save State process now using the following steps:

1. Insert the first System State DVD-RAM (label it “**Before SP2**”) into the SCSI Tower DVD drive.
2. Wait until the DVD drive is ready (i.e., front panel DVD drive LED is no longer lit).
3. Select [**System State**] under the Common Service Desktop [**Utilities**] tab.
4. Select [**All**].
5. Select [**Save**].
6. Select [**Yes**].
7. Verify that the ‘Save’ of the System State was successful. If not, save the System state again. A message at the end of the Save is displayed:  
*Save/ Restore System State; Completed Successfully.*
8. When completed, select [**Cancel**].
9. When completed select [**Dismiss**].

## 1.2. Uninstalling previous Service Packs and Patches

Service Pack 2 will not be able to install successfully if **Service Pack 1.0/Service Pack 1.5** is installed on the system. Additionally, Application software must be down to install or uninstall the Service Pack.

1. Verify whether any previous Service Packs/Patches are already installed on the system:  

```
[root@hostname ~]# showprods | grep ServicePack
```

```
[root@hostname ~]# showprods | grep Patch
```
2. If no output is displayed by the two commands above, proceed to section 1.3, otherwise proceed to step 3.
3. Verify Application software is down. If Application software is not down, select [**Application Shutdown**] under the Common Service Desktop [**Utilities**] tab. Wait approximately 1-2 minutes for Application software to go down.
4. Open a Unix Shell.
5. Become root:  

```
{ctuser@hostname} su -
```
6. Password: **#bigguy**
7. As root on the Host type:
8. 

```
[root@hostname ~]# patch_install -u
```
9. To uninstall all existing patches type: **y**
10. Verify that all the previous Service Packs and Patches uninstalled correctly:  

```
[root@hostname ~]# showprods | grep ServicePack
```

```
[root@hostname ~]# showprods | grep Patch  
No output should be displayed by these commands.
```

11. Perform reboot command to restart the console:  
[root@hostname ~]# **reboot**

### 1.3. Installing Service Pack 2.0

This section outlines the steps to load Service Pack 2. A reboot is **ALWAYS** necessary after the Service Pack load.

1. Insert the Service Pack 2 CD into the Host DVD drive.
2. Open a Unix Shell.
3. Verify one of the following base software versions is installed:  
[ctuser@hostname] **swhwinfo -v**  
07MW11.10  
07MW18.4
4. Verify the current keyboard language. As *ctuser* type:  
[ctuser@hostname] **more /etc/sysconfig/keyboard**  
Output Displayed: KEYBOARDTYPE="pc"  
KEYTABLE="us"  
(Sample output only. Output will vary based on keyboard language). **PLEASE NOTE THE KEYBOARD LANGUAGE DENOTED BY THE "KEYTABLE" ENTRY IN THE OUTPUT DISPLAYED. THE KEYBOARD LANGUAGE SELECTION WILL BE NEEDED LATER.**
5. Verify Application software is down. If Application software is not down, select **[Application Shutdown]** under the Common Service Desktop **[Utilities]** tab.
6. Wait approximately 1-2 minutes for Application software to go down
7. Become root:  
[ctuser@hostname] **su -**
8. Password: **#bigguy**
9. Verify that the whole system is up including the DARC.  
[root@hostname ~]# **rsh darc**  
[root@darc -]# **exit**
10. Install Service Pack 2  
[root@hostname ~]# **patch\_install -c**  
(use **patch\_install -i** if installing SP2 from software download directory. See Appendix B for more info on downloads)

Wait for the following prompt to display before moving on: "**I will install 07MXX.XX\_GEHCSERVICEPACK2.0 from CDROM, is this ok? [y/n]**"

11. Type: **y**

**NOTE:** If the Service Pack installation command fails, type the **start\_udev** command (wait 15 seconds after the OK), and retry the Service Pack installation command.

12. The load will take approximately **5-10 minutes**. The following output is displayed:

**NOTE:** Output displayed will vary based on software version.  
07MW11.10\_Gantry Info\_GEHCSERVICEPACK2 update has been successfully installed.

13. Verify that the Service Pack loaded correctly:  
[root@hostname ~]# showprods | grep ServicePack

**NOTE:** Output displayed will vary based on software version.  
07MW11.10\_Gantry Info\_GEHCSERVICEPACK2 DATE 07MW11.10\_Gantry Info Service Pack 2  
ver x rel x.xx

14. Verify the Application software package:  
{ctuser@hostname} swhwinfo

**NOTE:** Service Pack version is now included in the swhwinfo string. Output displayed will vary based on software version.  
07MW11.10\_SP2-0-26.Hardware info

15. Open a Unix Shell  
16. Verify Application software is down. If Application software is not down, select **[Application Shutdown]** under the Common Service Desktop **[Utilities]** tab.  
17. Become root:  
{ctuser@hostname} su -  
Password: #bigguy  
18. As root on the Host type:  
[root@hostname ~]# reconfig  
19. Select **[config]**.  
20. It is now necessary to set the appropriate keyboard language based on the setting before Service Pack 2. The **[Preferences]** tab will be displayed. Set the **Keyboard Selection** field based on the keyboard language recorded in section 5, step 3. Select the appropriate keyboard language from the **[Preferences]** tab GUI by referring to the table below:

English	"us"
French	"fr"
German	"de"
Italian	"it"
Spanish	"es"
Swedish	"sv"
Portuguese (Brazilian)	"br"

**WARNING: DO NOT SELECT ONE OF THE FOLLOWING KEYBOARD SELECTIONS UNLESS YOU HAVE THE CORRESPONDING KEYBOARD: DANISH, EUROPEAN PORTGUESE, DUTCH, AND NORWEGIAN.**

21. Select the **[Network]** tab.  
22. At this time, you can set the **Station Name**. *Station Name* is now an editable field. If your customer requires a specific *Station Name* for network purposes, it should be set now. Consult with your customer and set accordingly using the guidelines below. For most cases the *Station Name* default value (Host Name) is used. If no special *Station Name* setting is required, select **[Accept]** to set to default, and proceed to step 24. Please refer to **Appendix A** for an illustration of the *Station Name* setup.

**Station Name guidelines:**

- The *Station Name* identifies the text that will be stored in the DICOM attribute "Station Name" (DICOM TAG 0008,1010) in all CT images created. Some pacs systems may use the Station Name attribute or system tracking for identification of the scanner where the CT images were generated. Typically, the Host Name and Station Name will be the same.
- *Station Name* MUST NOT exceed 16 Characters
- *Station Name* MUST only contain the following characters: a through z, A through Z, 0 through 9, - and \_
- *Station Name* will default to the Host Name if left blank.

23. Select the **[Accept]** tab in the top right corner.

24. When prompted to reboot, select **[Yes]**.

25. **NOTE:** Please wait until Reboot is completely finished before moving on to the next step.

**NOTE:** The Gantry must be connected to the Operator Console during the reboot process.

26. Before starting applications, become root

```
{ctuser@hostname} su -
```

Password: #bigguy

The following command will restore the configuration file that holds the users HIPPA account information.

**NOTE:** This file is different for different systems. If not sure of system, type **swhwinfo** to get software and gantry info.

**for 07MW18.4 VCT :**

```
[root@hostname ~]# cd /etc
```

```
[root@hostname ~]#
```

```
cp _ea3.config.pre_07MW18.4_GEHCSERVICEPACK2.0-2-26 ea3.config
```

Output Displayed: cp: overwrite 'ea3.config'?

Type: y

**for 07MW11.10 (H1, H2):**

```
[root@hostname ~]# cd /etc
```

```
[root@hostname ~]#
```

```
cp _ea3.config.pre_07MW11.10_H1_H2_GEHCSERVICEPACK2.0-2-26 ea3.config
```

Output Displayed: cp: overwrite 'ea3.config'?

Type: y

**for 07MW11.10 & 07BW08.4:**

```
[root@hostname ~]# cd /etc
```

```
[root@hostname ~]#
```

```
cp _ea3.config.pre_07MW11.10_07BW08.4_GEHCSERVICEPACK2.0-2-26 ea3.config
```

Output Displayed: cp: overwrite 'ea3.config'?

Type: y

27. Check if **DENTASCAN** option is installed on the system:  
`{ctuser@hostname} swokinstall -p`

The list of all options installed on the system will be displayed. Please look for **DENTASCAN**. If **DENTASCAN** is NOT installed on the system, skip the rest of this step and move on to step 28; if **DENTASCAN** is installed, perform the following command:

`{ctuser@hostname} installcamera.denta`

28. Type **startup** to start the applications:

`{ctuser@hostname} startup`

29. Remove the Service Pack 2 CD from the Host Computer DVD drive tray.

**NOTE:** If the system you are working on is an H-Power system with TGP board part# 2290138-0500, proceed to section 1.4, otherwise proceed to section 1.5.

## 1.4. Gantry Reset (H-Power systems with TGP board part # 2290138-0500)

This section is required for **H-Power systems with TGP board part number 2290138-0500**. Follow the steps below to manually reset the gantry:

1. Check to verify that the system is equipped with TGP board part number 2290138-0500:  
`{ctuser@hostname} rlogin tgp`  
type: **print\_cpu\_board\_revision**  
Output displayed:  
**PartNo: 2290138-0500 (Variation:5 Revision:0)**  
**value = 46 = 0x2e = 'I'**  
type: **logout** to exit
2. Remove gantry covers as required
3. Turn **OFF** the **Axial Drive** and **HVDC** switches on the Service Switch Panel.
4. Turn **OFF** the **120VAC** switch on the Service Switch Panel.
5. Turn the **120VAC** switch on the Service Switch Panel back **ON**.
6. Turn the **Axial Drive** and **HVDC** switches on the Service Switch Panel back **ON**.
7. **Push the reset button on the control panel on the front of the gantry.**
8. Proceed to section 1.5 to perform Flash Download.

## 1.5. Flash Download

1. Select the Common Service Desktop icon.
2. Select **[Utilities]**.
3. Select **[Flash Download Tool]**.
4. Select **[Query]**.
5. Select **[Update]**.
6. If necessary, enter the Collimator Serial Number and select **[Accept]** if a pop-up appears.
7. If Flash Download is unsuccessful, perform hardware reset, then try Flash Download tool again.
8. Once the Gantry Hardware Flash Downloads successfully, select **[Dismiss]**.

## 1.6. Sanity Scans

1. Perform a Scout scan.
2. Perform a Helical scan.
3. Perform an Axial scan.
4. Verify that scans perform successfully.
5. Please note the exam number of the sanity scans. This will be recorded during debrief.

## 1.7. Save system State

1. Insert the second System State DVD-RAM (label it "**SP2 System State**") into the SCSI Tower DVD drive.
2. Wait until the DVD drive is ready (i.e., front panel DVD drive LED is no longer lit).
3. Select **[System State]** under the Common Service Desktop **[Utilities]** tab.
4. Select **[All]**.
5. Select **[Save]**.
6. Select **[Yes]**.
7. Verify that the 'Save' of the System State was successful. If not, save the System state again. A message at the end of the Save is displayed:  
*Save/ Restore System State; Completed Successfully.*
8. When completed, select **[Cancel]**.
9. When completed select **[Dismiss]**.
10. Close the Common Service Desktop window.
11. If this procedure is being executed during the installation of **FMI 25407**, please return to the *Finishing Up* section of the FMI 25407 Instructions (**5264685-1EN**).

## 2. BRIGHTSPEED POWER AND LS 5X HP60

This section outlines the steps necessary to install Service Pack 2.0 on a **LightSpeed 5X HP60** or **BrightSpeed Power** system. If your system is different, please refer to the table of contents for the appropriate section.

### 2.1. Filament Calibration (Save Runtime Parameters)

Service Pack2 will update JEDI application firmware for HP60 and BSD-Power systems. This means that JEDI database will be initialized. To avoid losing JEDI database parameters, Save Runtime Parameters of JEDI Tool needs to be performed using the following steps:

1. Select **[Generator Tool – JEDI]** under the Common Service Desktop **[Diagnostics]** tab.
2. Select **[Save Runtime Parameters]**
3. Select **[OK]**
4. Verify that Save Runtime Parameters was successful. A message at the end of the Save should be displayed.  
*Runtime Parameters successfully saved to console hard drive.*
5. When completed, select **[OK]**
6. Select **[Dismiss]**

Save System State is needed to restore JEDI database parameters after Service Pack 2 installation.

### 2.2. Save System State

A current System State, labeled "**Before SP2**", must be available before attempting any software or hardware modification. A second System State, labeled "**SP2 System State**", will be saved following Service Pack 2 load. If a current System State is not available, complete Save State process now using the following steps:

1. Insert the first System State DVD-RAM (label it "**Before SP2**") into the SCSI Tower DVD drive.
2. Wait until the DVD drive is ready (i.e., front panel DVD drive LED is no longer lit).
3. Select **[System State]** under the Common Service Desktop **[Utilities]** tab.
4. Select **[All]**.
5. Select **[Save]**.
6. Select **[Yes]**.
7. Verify that the 'Save' of the System State was successful. If not, save the System state again. A message at the end of the Save is displayed:  
*Save/ Restore System State; Completed Successfully.*
8. When completed, select **[Cancel]**.
9. When completed select **[Dismiss]**.

### 2.3. Uninstalling previous Service Packs and Patches

Service Pack 2 will not be able to install successfully if **Service Pack 1.0/Service Pack 1.5/Hino JEDI Cradle Patch** is installed on the system. Additionally, Application software must be down to install or uninstall the Service Pack.

1. Verify whether any previous Service Packs/Patches are already installed on the system:  
`[root@hostname ~]# showprods | grep ServicePack`

- ```
[root@hostname ~]# showprods | grep Patch
```
- If no output is displayed by the two commands above, proceed to section 2.5, otherwise proceed to step 3.
  - Verify Application software is down. If Application software is not down, select **[Application Shutdown]** under the Common Service Desktop **[Utilities]** tab. Wait approximately 1-2 minutes for Application software to go down.
  - Open a Unix Shell.
  - Become root:  

```
{ctuser@hostname} su -
```
  - Password: **#bigguy**
  - As root on the Host type:
  - ```
[root@hostname ~]# patch_install -u
```
  - To uninstall all existing patches type: **y**
  - Verify that all the previous Service Packs and Patches uninstalled correctly:  

```
[root@hostname ~]# showprods | grep ServicePack  
[root@hostname ~]# showprods | grep Patch
```

No output should be displayed by these commands.
  - Perform reboot command to restart the console:  

```
[root@hostname ~]# reboot
```

## 2.4. Installing Service Pack 2.0

This section outlines the steps to load Service Pack 2. A reboot is **ALWAYS** necessary after the Service Pack load.

- Insert the Service Pack 2 CD into the Host DVD drive.
- Open a Unix Shell.
- Verify that the following base software version is installed:  

```
{ctuser@hostname} swhwinfo -v  
07MW11.10
```
- Verify the current keyboard language. As *ctuser*, type:  

```
{ctuser@hostname} more /etc/sysconfig/keyboard
```

Output Displayed: KEYBOARDTYPE="pc"  
KEYTABLE="us"  
(Sample output only. Output will vary based on keyboard language). **PLEASE NOTE THE KEYBOARD LANGUAGE DENOTED BY THE "KEYTABLE" ENTRY IN THE OUTPUT DISPLAYED. THE KEYBOARD LANGUAGE SELECTION WILL BE NEEDED LATER.**
- Verify Application software is down. If Application software is not down, select **[Application Shutdown]** under the Common Service Desktop **[Utilities]** tab.
- Wait approximately 1-2 minutes for Application software to go down
- Become root:  

```
{ctuser@hostname} su -
```
- Password: **#bigguy**
- Verify that the whole system is up including the DARC.  

```
[root@hostname ~]# rsh darc  
[root@darc -]# exit
```
- Install Service Pack 2

```
[root@hostname ~]# patch_install -c  
(use patch_install -i if installing SP2 from software download directory. See Appendix B  
for more info on downloads)
```

Wait for the following prompt to display before moving on: **"I will install 07MXX.XX\_GEHCSERVICEPACK2.0 from CDROM, is this ok? [y/n]"**

11. Type: **y**

**NOTE:** If the Service Pack installation command fails, type the **start\_udev** command (wait 15 seconds after the OK), and retry the Service Pack installation command.

12. The load will take approximately **5-10 minutes**. The following output is displayed:

**NOTE:** Output displayed will vary based on software version.  
*07MW11.10\_Gantry Info\_GEHCSERVICEPACK2 update has been successfully installed.*

13. Verify that the Service Pack loaded correctly:  
[root@hostname ~]# **showprods | grep ServicePack**

**NOTE:** Output displayed will vary based on software version.  
*07MW11.10\_Gantry Info\_GEHCSERVICEPACK2 DATE 07MW11.10\_Gantry Info Service Pack 2  
ver x rel x.xx*

14. Verify the Application software package:  
{ctuser@hostname} **swhwinfo**

**NOTE:** Service Pack version is now included in the *swhwinfo* string. Output displayed will vary based on software version.  
*07MW11.10\_SP2-0-26.Hardware info*

15. **Open a Unix Shell**

16. **Verify Application software is down.** If Application software is not down, select **[Application Shutdown]** under the Common Service Desktop **[Utilities]** tab.

17. Become root:

```
{ctuser@hostname} su -  
Password: #bigguy
```

18. As root on the Host, type:

```
[root@hostname ~]# reconfig
```

19. **Select [config].**

20. It is now necessary to set the appropriate keyboard language based on the setting before Service Pack 2. The **[Preferences]** tab will be displayed. Set the **Keyboard Selection** field based on the keyboard language recorded in section 5, step 3. Select the appropriate keyboard language from the **[Preferences]** tab GUI by referring to the table below:

English	"us"
French	"fr"
German	"de"
Italian	"it"
Spanish	"es"

Swedish	"sv"
Portuguese (Brazilian)	"br"

**WARNING: DO NOT SELECT ONE OF THE FOLLOWING KEYBOARD SELECTIONS UNLESS YOU HAVE THE CORRESPONDING KEYBOARD: DANISH, EUROPEAN PORTGUESE, DUTCH, AND NORWEGIAN.**

21. Select the **[Network]** tab.
22. At this time, you can set the **Station Name**. *Station Name* is now an editable field. If your customer requires a specific *Station Name* for network purposes, it should be set now. Consult with your customer and set accordingly using the guidelines below. For most cases the *Station Name* default value (Host Name) is used. If no special *Station Name* setting is required, select **[Accept]** to set to default, and proceed to step 24. Please refer to **Appendix A** for an illustration of the *Station Name* setup.

**Station Name guidelines:**

- The *Station Name* identifies the text that will be stored in the DICOM attribute "Station Name" (DICOM TAG 0008,1010) in all CT images created. Some pacs systems may use the *Station Name* attribute or system tracking for identification of the scanner where the CT images were generated. Typically, the Host Name and *Station Name* will be the same.
- *Station Name* MUST NOT exceed 16 Characters
- *Station Name* MUST only contain the following characters: a through z, A through Z, 0 through 9, - and \_
- *Station Name* will default to the Host Name if left blank.

23. Select the **[Accept]** tab in the top right corner.
24. When prompted to reboot, select **[Yes]**.

**NOTE:** Please wait until Reboot is completely finished before moving on to the next step.

**NOTE:** The Gantry must be connected to the Operator Console during the

25. Before starting applications, become root  
{ctuser@hostname} su -  
Password: **#bigguy**

30. **NOTE:** Please wait until Reboot is completely finished before moving on to the next step.  
**NOTE:** The Gantry must be connected to the Operator Console during the reboot process.

31. Before starting applications, become root  
{ctuser@hostname} su -  
Password: **#bigguy**

The following command will restore the configuration file that holds the users HIPPA account information.

**NOTE:** This file is different for different systems. If not sure of system, type **swhwinfo** to get software and gantry info.

**for 07MW18.4 VCT :**

[root@hostname ~]# cd /etc

```
[root@hostname ~]#  
cp _ea3.config.pre_07MW18.4_GEHServicePack2.0-2-26 ea3.config  
Output Displayed: cp: overwrite 'ea3.config'?  
Type: y
```

**for 07MW11.10 (H1, H2):**

```
[root@hostname ~]# cd /etc  
[root@hostname ~]#  
cp _ea3.config.pre_07MW11.10_H1_H2_GEHServicePack2.0-2-26 ea3.config  
Output Displayed: cp: overwrite 'ea3.config'?  
Type: y
```

**for 07MW11.10 & 07BW08.4:**

```
[root@hostname ~]# cd /etc  
[root@hostname ~]#  
cp _ea3.config.pre_07MW11.10_07BW08.4_GEHServicePack2.0-2-26 ea3.config  
Output Displayed: cp: overwrite 'ea3.config'?  
Type: y
```

26. Check if **DENTASCAN** option is installed on the system:

```
{ctuser@hostname} swokinstall -p
```

The list of all options installed on the system will be displayed. Please look for **DENTASCAN**. If **DENTASCAN** is NOT installed on the system, skip the rest of this step and move on to step 27; if **DENTASCAN** is installed, perform the following command:

```
{ctuser@hostname} installcamera.denta
```

27. Type **startup** to start the applications:

```
{ctuser@hostname} startup
```

28. Remove the Service Pack 2 CD from the Host Computer DVD drive tray.

**NOTE:** If the system you are working on is an H-Power system with TGP board, part# 2290138-0500, proceed to section 2.6, otherwise proceed to section 2.7.

## 2.5. Gantry Reset (H-Power systems with TGP board part # 2290138-0500)

This section is required for **H-Power systems with TGP board part number 2290138-0500**. Follow the steps below to manually reset the gantry:

1. Check to verify that the system is equipped with TGP board part number 2290138-0500:

```
{ctuser@hostname} rlogin tgp
```

```
type: print_cpu_board_revision
```

```
Output displayed:
```

```
PartNo: 2290138-0500 (Variation:5 Revision:0)
```

```
value = 46 = 0x2e = 'I'
```

```
type: logout to exit
```

2. Remove gantry covers as required
3. Turn **OFF** the **Axial Drive** and **HVDC** switches on the Service Switch Panel.
4. Turn **OFF** the **120VAC** switch on the Service Switch Panel.
5. Turn the **120VAC** switch on the Service Switch Panel back **ON**.
6. Turn the **Axial Drive** and **HVDC** switches on the Service Switch Panel back **ON**.
7. **Push the reset button on the control panel on the front of the gantry.**
8. Proceed to section 2.7 to perform Flash Download.

## 2.6. Flash Download

1. Select the Common Service Desktop icon.
2. Select **[Utilities]**.
3. Select **[Flash Download Tool]**.
4. Select **[Query]**.
5. Select **[Update]**.
6. If necessary, enter the Collimator Serial Number and select **[Accept]** if a pop-up appears.
7. If Flash Download is unsuccessful, perform hardware reset, then try Flash Download tool again.
8. Once the Gantry Hardware Flash Downloads successfully, select **[Dismiss]**.

## 2.7. Filament Calibration

1. Select **[Generator Tool - JEDI]** under the Common Service Desktop **[Diagnostics]** tab.
2. Select **[Initialize Database]**.
3. Verify that "Initialize Database" was successful.
4. Insert the "**Before SP2**" System State DVD-RAM into the SCSI Tower DVD drive.
5. Wait until the DVD drive is ready (i.e., front panel DVD drive LED is no longer lit).
6. Select **[System State]** under the Common Service Desktop **[Utilities]** tab.
7. Select **[Characterization]** to restore JEDI database parameters.
8. Select **[Restore]**.
9. Select **[Yes]**.
10. Verify that the "Restore" of the System State was successful. A message at the end of the Restore should be displayed.  
*Save/ Restore System State; Completed Successfully.*
11. Select **[Generator Tool - JEDI]** under the Common Service Desktop **[Diagnostics]** Tab.
12. Select **[Restore Runtime Parameters]**.
13. Select **[OK]**.
14. Verify that Restore Runtime Parameters was successful. A message at the end of the Save should be displayed.  
*Runtime Parameters successfully restored to Generator.*
15. When completed, select **[OK]**.
16. Select **[Filament Cal]**.
17. Select **[Scan]**.
18. Verify that "Filament Cal" was successful.
19. Select **[HHS Scan]**. You will need a service key to perform HHS scan.
20. Verify that "HHS Scan" was successful.

## 2.9. Sanity Scans

1. Perform a Scout scan.

2. Perform a Helical scan.
3. Perform an Axial scan.
4. Verify that the scans perform successfully.
5. Please note the exam number of the sanity scans. This will be recorded during debrief.

## 2.10. Save System State

1. Insert the second System State DVD-RAM (label it "**SP2 System State**") into the SCSI Tower DVD drive.
2. Wait until the DVD drive is ready (i.e., front panel DVD drive LED is no longer lit).
3. Select **[System State]** under the Common Service Desktop **[Utilities]** tab.
4. Select **[All]**.
5. Select **[Save]**.
6. Select **[Yes]**.
7. Verify that the 'Save' of the System State was successful. If not, save the System state again. A message at the end of the Save is displayed:
8. *Save/ Restore System State; Completed Successfully.*
9. When completed, select **[Cancel]**.
10. When completed select **[Dismiss]**.
11. Close the Common Service Desktop window.
12. If this procedure is being executed during the installation of **FMI 25407**, please return to the *Finishing Up* section of the FMI 25407 Instructions (**5264685-1EN**).

## 3. BRIGHTSPEED SELECT

This section outlines the steps necessary to install Service Pack 2.0 on a **BrightSpeed Select** system. If your system is different, please refer to the table of contents for the appropriate section.

### 3.1. Filament Calibration (Save Runtime Parameters)

Service Pack2 will update JEDI application firmware for BSD-Select systems. This means that JEDI database will be initialized. To avoid losing JEDI database parameters, Save Runtime Parameters of JEDI Tool needs to be performed using the following steps:

1. Select **[Generator Tool – JEDI]** under the Common Service Desktop **[Diagnostics]** tab.
2. Select **[Save Runtime Parameters]**
3. Select **[OK]**
4. Verify that Save Runtime Parameters was successful. A message at the end of the Save should be displayed.  
*Runtime Parameters successfully saved to console hard drive.*
5. When completed, select **[OK]**
6. Select **[Dismiss]**

Save System State is needed to restore JEDI database parameters after Service Pack 2 installation.

### 3.2. Save System State

A current System State, labeled “**Before SP2**”, must be available before attempting any software or hardware modification. A second System State, labeled “**SP2 System State**”, will be saved following Service Pack 2 load. If a current System State is not available, complete Save State process now using the following steps:

1. Insert the first System State DVD-RAM (label it “**Before SP2**”) into the SCSI Tower DVD drive.
2. Wait until the DVD drive is ready (i.e., front panel DVD drive LED is no longer lit).
3. Select **[System State]** under the Common Service Desktop **[Utilities]** tab.
4. Select **[All]**.
5. Select **[Save]**.
6. Select **[Yes]**.
7. Verify that the ‘Save’ of the System State was successful. If not, save the System state again. A message at the end of the Save is displayed:  
*Save/ Restore System State; Completed Successfully.*
8. When completed, select **[Cancel]**.
9. When completed select **[Dismiss]**.

### 3.3. Uninstalling previous Service Packs and Patches

Service Pack 2 will not be able to install successfully if **BSD Lite M4 Patch/Service Pack 1.0/Service Pack 1.5** is installed on the system. Additionally, Application software must be down to install or uninstall the Service Pack.

1. Verify whether any previous Service Packs/Patches are already installed on the system:  

```
[root@hostname ~]# showprods | grep ServicePack
```

```
[root@hostname ~]# showprods | grep Patch
```

2. If no output is displayed by the two commands above, proceed to section 3.4, otherwise proceed to step 3.
3. Verify Application software is down. If Application software is not down, select **[Application Shutdown]** under the Common Service Desktop **[Utilities]** tab. Wait approximately 1-2 minutes for Application software to go down.
4. Open a Unix Shell.
5. Become root:  
`{ctuser@hostname} su -`
6. Password: **#bigguy**
7. As root on the Host type:
8. `[root@hostname ~]# patch_install -u`
9. To uninstall all existing patches type: **y**
10. Verify that all the previous Service Packs and Patches uninstalled correctly:  
`[root@hostname ~]# showprods | grep ServicePack`  
`[root@hostname ~]# showprods | grep Patch`  
No output should be displayed by these commands.
11. Perform reboot command to restart the console:  
`[root@hostname ~]# reboot`

### 3.4. Installing Service Pack 2.0

This section outlines the steps to load Service Pack 2. A reboot is **ALWAYS** necessary after the Service Pack load.

1. Insert the Service Pack 2 CD into the Host DVD drive.
2. Open a Unix Shell.
3. Verify that the following base software version is installed:  
`{ctuser@hostname} swhwinfo -v`  
`07BW08.4`
4. Verify the current keyboard language. As *ctuser*, type:  
`{ctuser@hostname} more /etc/sysconfig/keyboard`  
Output Displayed: `KEYBOARDTYPE="pc"`  
`KEYTABLE="us"`  
(Sample output only. Output will vary based on keyboard language). **PLEASE NOTE THE KEYBOARD LANGUAGE DENOTED BY THE "KEYTABLE" ENTRY IN THE OUTPUT DISPLAYED. THE KEYBOARD LANGUAGE SELECTION WILL BE NEEDED LATER.**
5. Verify Application software is down. If Application software is not down, select **[Application Shutdown]** under the Common Service Desktop **[Utilities]** tab.
6. Wait approximately 1-2 minutes for Application software to go down
7. Become root:  
`{ctuser@hostname} su -`
8. Password: **#bigguy**
9. Verify that the whole system is up including the DARC.  
`[root@hostname ~]# rsh darc`  
`[root@darc -]# exit`

10. Install Service Pack 2

```
[root@hostname ~]# patch_install -c
```

(use **patch\_install -i** if installing SP2 from software download directory. See Appendix B for more info on downloads)

Wait for the following prompt to display before moving on: **"I will install 07MXX.XX\_GEHCSERVICEPACK2.0 from CDROM, is this ok? [y/n]"**

11. Type: **y**

12. **NOTE:** If the Service Pack installation command fails, type the **start\_udev** command (wait 15 seconds after the OK), and retry the Service Pack installation command.

13. The load will take approximately **5-10 minutes**. The following output is displayed:

14. **NOTE:** Output displayed will vary based on software version.

```
07BW08.4_Gantry Info_GEHCSERVICEPACK2 update has been successfully installed.
```

15. Verify that the Service Pack loaded correctly:

```
[root@hostname ~]# showprods | grep ServicePack
```

16. **NOTE:** Output displayed will vary based on software version.

```
07BW08.4_Gantry Info_GEHCSERVICEPACK2 DATE 07BW08.4_Gantry Info Service Pack 2 ver  
x rel x.xx
```

17. Verify the Application software package:

```
{ctuser@hostname} swhwinfo
```

18. **NOTE:** Service Pack version is now included in the *swhwinfo* string. Output displayed will vary based on software version.

```
07BW08.4_SP2-0-26.Hardware info
```

19. Open a Unix Shell

20. Verify Application software is down. If Application software is not down, select **[Application Shutdown]** under the Common Service Desktop **[Utilities]** tab.

21. Become root:

```
{ctuser@hostname} su -  
Password: #bigguy
```

22. As root on the Host type:

```
[root@hostname ~]# reconfig
```

23. Select **[config]**.

24. It is now necessary to set the appropriate keyboard language based on the setting before Service Pack 2. The **[Preferences]** tab will be displayed. Set the **Keyboard Selection** field based on the keyboard language recorded in section 5, step 3. Select the appropriate keyboard language from the **[Preferences]** tab GUI by referring to the table below:

English	"us"
French	"fr"
German	"de"
Italian	"it"
Spanish	"es"
Swedish	"sv"
Portuguese (Brazilian)	"br"

**WARNING: DO NOT SELECT ONE OF THE FOLLOWING KEYBOARD SELECTIONS UNLESS YOU HAVE THE CORRESPONDING KEYBOARD: DANISH, EUROPEAN PORTGUESE, DUTCH, AND NORWEGIAN.**

- 25. Select the **[Network]** tab.
- 26. At this time, you can set the **Station Name**. *Station Name* is now an editable field. If your customer requires a specific *Station Name* for network purposes, it should be set now. Consult with your customer and set accordingly using the guidelines below. For most cases the *Station Name* default value (Host Name) is used. If no special *Station Name* setting is required, select **[Accept]** to set to default, and proceed to step 28. Please refer to **Appendix A** for an illustration of the *Station Name* setup.

**Station Name guidelines:**

- The *Station Name* identifies the text that will be stored in the DICOM attribute "Station Name" (DICOM TAG 0008,1010) in all CT images created. Some pacs systems may use the *Station Name* attribute or system tracking for identification of the scanner where the CT images were generated. Typically, the Host Name and *Station Name* will be the same.
- *Station Name* MUST NOT exceed 16 Characters
- *Station Name* MUST only contain the following characters: a through z, A through Z, 0 through 9, - and \_
- *Station Name* will default to the Host Name if left blank.

- 27. Select the **[Accept]** tab in the top right corner.
- 28. When prompted to reboot, select **[Yes]**.  
**NOTE:** Please wait until Reboot is completely finished before moving on to the next step.  
**NOTE:** The Gantry must be connected to the Operator Console during the reboot process.

- 29. Before starting applications, become root  
{ctuser@hostname} **su -**  
Password: **#bigguy**

The following command will restore the configuration file that holds the users HIPPA account information.

**NOTE:** This file is different for different systems. If not sure of system, type **swhwinfo** to get software and gantry info.

**for 07MW18.4 VCT :**

```
[root@hostname ~]# cd /etc
```

```
[root@hostname ~]#
```

```
cp _ea3.config.pre_07MW18.4_GEHCServicePack2.0-2-26 ea3.config
```

```
Output Displayed: cp: overwrite 'ea3.config'?
```

Type: y

for 07MW11.10 (H1, H2):

```
[root@hostname ~]# cd /etc
```

```
[root@hostname ~]#
```

```
cp _ea3.config.pre_07MW11.10_H1_H2_GEHCSERVICEPACK2.0-2-26 ea3.config
```

Output Displayed: cp: overwrite 'ea3.config'?

Type: y

for 07MW11.10 & 07BW08.4:

```
[root@hostname ~]# cd /etc
```

```
[root@hostname ~]#
```

```
cp _ea3.config.pre_07MW11.10_07BW08.4_GEHCSERVICEPACK2.0-2-26 ea3.config
```

Output Displayed: cp: overwrite 'ea3.config'?

Type: y

30. Check if **DENTASCAN** option is installed on the system:

```
{ctuser@hostname} swokininstall -p
```

The list of all options installed on the system will be displayed. Please look for **DENTASCAN**. If **DENTASCAN** is NOT installed on the system, skip the rest of this step and move on to step 31; if **DENTASCAN** is installed, perform the following command:

```
{ctuser@hostname} installcamera.denta
```

31. Type **startup** to start the applications:

```
{ctuser@hostname} startup
```

32. Remove the Service Pack 2 CD from the Host Computer DVD drive tray.

**NOTE:** If the system you are working on is an H-Power system with TGP board, part# 2290138-0500, proceed to section 3.5, otherwise proceed to section 3.6.

## 3.5. Gantry Reset (H-Power systems with TGP board part # 2290138-0500)

This section is required for **H-Power systems with TGP board part number 2290138-0500**. Follow the steps below to manually reset the gantry:

1. Check to verify that the system is equipped with TGP board part number 2290138-0500:

```
{ctuser@hostname} rlogin tgp
```

```
type: print_cpu_board_revision
```

Output displayed:

```
PartNo: 2290138-0500 (Variation:5 Revision:0)
```

```
value = 46 = 0x2e = '
```

```
type: logout to exit
```

2. Remove gantry covers as required
3. Turn **OFF** the **Axial Drive** and **HVDC** switches on the Service Switch Panel.
4. Turn **OFF** the **120VAC** switch on the Service Switch Panel.
5. Turn the **120VAC** switch on the Service Switch Panel back **ON**.
6. Turn the **Axial Drive** and **HVDC** switches on the Service Switch Panel back **ON**.

7. Push the **reset** button on the control panel on the front of the gantry.
8. Proceed to section 3.6 to perform Flash Download.

### 3.6. Flash Download

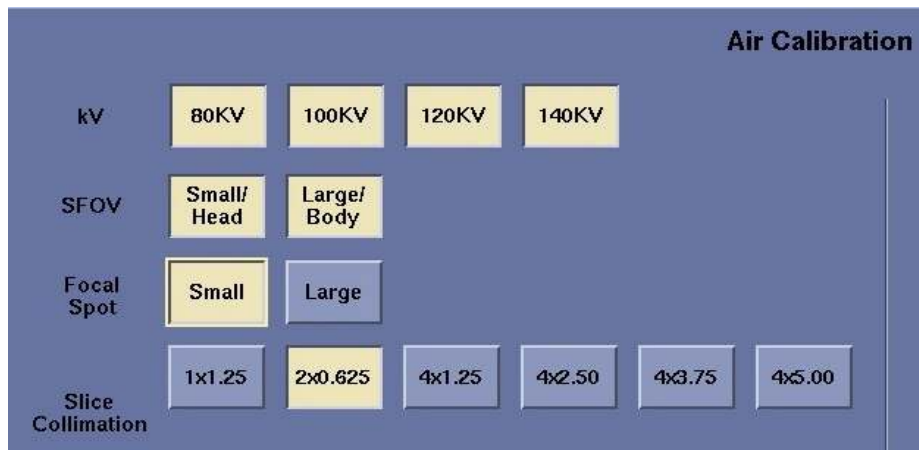
1. Select the Common Service Desktop icon.
2. Select **[Utilities]**.
3. Select **[Flash Download Tool]**.
4. Select **[Query]**.
5. Select **[Update]**.
6. If necessary, enter the Collimator Serial Number and select **[Accept]** if a pop-up appears.
7. If Flash Download is unsuccessful, perform hardware reset, then try Flash Download tool again.
8. Once the Gantry Hardware Flash Downloads successfully, select **[Dismiss]**.

### 3.7. Filament Calibration

1. Select **[Generator Tool - JEDI]** under the Common Service Desktop **[Diagnostics]** tab.
2. Select **[Initialize Database]**.
3. Verify that "Initialize Database" was successful.
4. Insert the "**Before SP2**" System State DVD-RAM into the SCSI Tower DVD drive.
5. Wait until the DVD drive is ready (i.e., front panel DVD drive LED is no longer lit).
6. Select **[System State]** under the Common Service Desktop **[Utilities]** tab.
7. Select **[Characterization]** to restore JEDI database parameters.
8. Select **[Restore]**.
9. Select **[Yes]**.
10. Verify that the "Restore" of the System State was successful. A message at the end of the Restore should be displayed.  
*Save/ Restore System State; Completed Successfully.*
11. Select **[Generator Tool - JEDI]** under the Common Service Desktop **[Diagnostics]** Tab.
12. Select **[Restore Runtime Parameters]**.
13. Select **[OK]**.
14. Verify that Restore Runtime Parameters was successful. A message at the end of the Save should be displayed.  
*Runtime Parameters successfully restored to Generator.*
15. When completed, select **[OK]**.
16. Select **[Filament Cal]**.
17. Select **[Scan]**.
18. Verify that "Filament Cal" was successful.
19. Select **[HHS Scan]**. You will need a service key to perform HHS scan.
20. Verify that "HHS Scan" was successful.

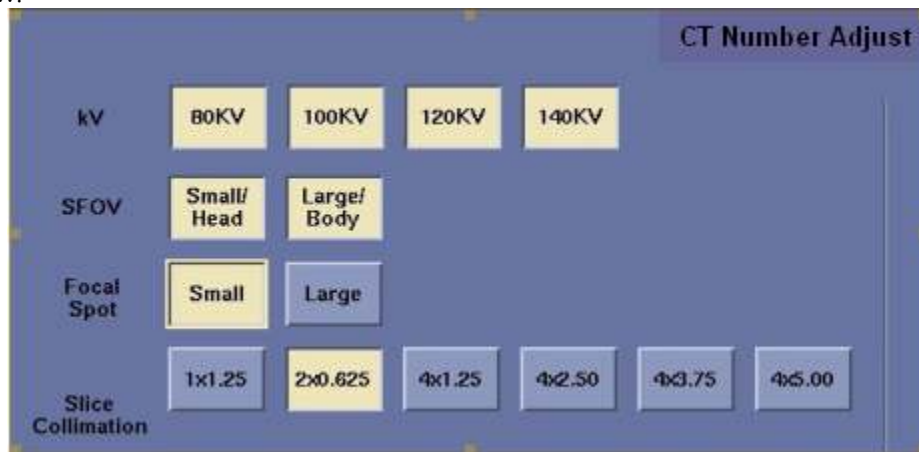
### 3.8. Detail Calibration (BrightSpeed Select 4 and 8 slice systems only with 07BW08.4 software)

1. Select **[Calibration]** from the Common Service Desktop menu.
2. Select **[Detail Calibration]**.
3. After gantry balance check completes, select desired techniques needed to perform detailed calibration processing. Refer to picture below:



kV: select 80KV/100KV/120KV/140KV  
SFOV: Select Small/Head and Large/Body  
Focal Spot: Select Small  
Slice Collimation: Select 2x0.625

4. Perform the calibration process following the instructions on screen. It'll take approximate 20 minutes to complete the calibration.
5. Select **[Adjust CT Number]**.
6. Selected desired techniques needed to perform detailed calibration processing. Refer to picture below:



kV: select 80KV/100KV/120KV/140KV  
SFOV: Select Small/Head and Large/Body  
Focal Spot: Select Small  
Slice Collimation: Select 2x0.625

7. Perform the CT number adjustment following the instructions on screen.
8. After CT number adjustment completes, select **[Quit]**.

### 3.9. Sanity Scans

1. Perform a Scout scan.
2. Perform a Helical scan.
3. Perform an Axial scan.

4. Verify that the scans perform successfully.
5. Please note the exam number of the sanity scans. This will be recorded during debrief.

### 3.10. Save System State

1. Insert the second System State DVD-RAM (label it "**SP2 System State**") into the SCSI Tower DVD drive.
2. Wait until the DVD drive is ready (i.e., front panel DVD drive LED is no longer lit).
3. Select [**System State**] under the Common Service Desktop [**Utilities**] tab.
4. Select [**All**].
5. Select [**Save**].
6. Select [**Yes**].
7. Verify that the 'Save' of the System State was successful. If not, save the System state again. A message at the end of the Save is displayed:  
*Save/ Restore System State; Completed Successfully.*
8. When completed, select [**Cancel**].
9. When completed select [**Dismiss**].
10. Close the Common Service Desktop window.
11. If this procedure is being executed during the installation of **FMI 25407**, please return to the *Finishing Up* section of the FMI 25407 Instructions (**5264685-1EN**).

## 4. UNINSTALLING SERVICE PACK 2.0

This section outlines the steps necessary to uninstall Service Pack 2.0 if needed.

**ATTENTION:** Service Pack 2.0 supports the following:

- 1) New ICOM (part# 2404320-2)
- 2) HP XW8400 Host Computer
- 3) New Languages: Dutch, Danish, Swedish, Norwegian, Finnish, and European Portuguese
- 4) Quality & Safety fixes (Check Release Notes for additional information)

**WARNING:** Service Pack 2.0 contains numerous safety fixes. Removal of Service Pack 2.0 will require the customer to sign an FMI refusal form acknowledging potential consequences.

### 4.1. Language Reconfig and Uninstall

This section outlines the steps necessary to uninstall Service Pack 2.

**NOTE:** Service Pack 2 will not be able to uninstall successfully if Application software is up. Shut down applications by selecting **[Application Shutdown]** under the Common Service Desktop **[Utilities]** tab.

**ATTENTION:** If the system is configured in one of the 6 new languages supported by Service Pack 2 (i.e. Finnish, Dutch, Danish, Swedish, European Portuguese, Norwegian) a “**reconfig**” to English must be performed before uninstalling Service Pack 2. A reboot and a Save System State are always required after a Service Pack uninstall.

1. Open a Unix Shell
2. Become root:  
`{ctuser@hostname} su -`  
Password: **#bigguy**
3. `[root@hostname ~]# reconfig`
4. Select **[config]**.
5. In the **[Preferences]** Tab, select **English** as the language.
6. Select **[Accept]** tab. When prompted to reboot, select **[Yes]**.
7. Open a Unix Shell
8. Become root:  
`{ctuser@hostname} su -`  
Password: **#bigguy**
9. As root on the Host type:  
`[root@hostname ~]# patch_install -u`
10. When prompted to uninstall Service Pack 2, type: **y**
11. Verify the Service Pack has uninstalled correctly by typing the following command and verifying no output is displayed:  
`[root@hostname ~]# showprods | grep ServicePack`  
No output is displayed
12. Verify that **shwhinfo** displays no Service Pack info. Output displayed will vary based on software version:

```
{ctuser@hostname} swhwinfo  
07MW11.10_Hardware info
```

13. Perform reboot command to restart the console:

```
{ctuser@hostname} su -  
Password: #bigguy
```

14. As root on the Host type:  
[root@hostname ~]# **reboot**

## 4.2. Flash Download

1. Select the Common Service Desktop icon.
2. Select **[Utilities]**.
3. Select **[Flash Download Tool]**.
4. Select **[Query]**.
5. Select **[Update]**.
6. If necessary, enter the Collimator Serial Number and select **[Accept]** if a pop-up appears.
7. If Flash Download is unsuccessful, perform hardware reset, then try Flash Download tool again.
8. Once the Gantry Hardware Flash Downloads successfully, select **[Dismiss]**.

## 4.3. Restore System State

1. Insert the "Before SP2" System State DVD-RAM into the SCSI Tower DVD drive.
2. Wait until the DVD drive is ready (i.e., front panel DVD drive LED is no longer lit).
3. Select **[System State]** under the Common Service Desktop **[Utilities]** tab.
4. Select **[All]**.
5. Select **[Restore]**.
6. Select **[Yes]**.
7. Verify that the 'Restore' of the System State was successful. If not, Restore the System state again. A message at the end of the Restore should display:  
*Save/ Restore System State; Completed Successfully.*
8. When completed, select **[Cancel]**.
9. When completed select **[Dismiss]**.

## 4.4. Filament Calibration (LS HP60, BSD-Power, and BSD-Select systems only)

1. Select **[Generator Tool – JEDI]** under the Common Service Desktop **[Diagnostics]** tab.
2. Select **[Restore Runtime Parameters]**.
3. Select **[OK]**.
4. Verify that Restore Runtime Parameters was successful. A message at the end of the Save should display.  
*Runtime Parameters successfully restored to Generator.*
5. When completed, select **[OK]**.
6. Select **[Filament Cal]**.

7. Select [Scan].
8. Verify that "Filament Cal" was successful.
9. Close the Common Service Desktop window at the upper left corner of the screen.

## 4.5. Sanity Scans

1. Perform a Scout scan.
2. Perform a Helical scan.
3. Perform an Axial scan.
4. Verify that the scans perform successfully.

## 4.6. Installing previously applicable Service Packs and Patches

Removal of Service Pack 2.0 will return the system to its original base software (i.e. 07MW11.10, 07MW18.4, or 07BW08.4). At this point, please **INSTALL ALL PREVIOUSLY APPLICABLE SERVICE PACKS AND/OR PATCHES TO YOUR SYSTEM (i.e. Service Pack 1.0/Service Pack 1.5/Hino JEDI Cradle Patch/BSD Lite M4 Patch)**. Please refer to the specific instructions for each one of these Service Packs/Patches for further detail on how to install them.

## APPENDIX A: LANGUAGE RECONFIG AND STATION NAME

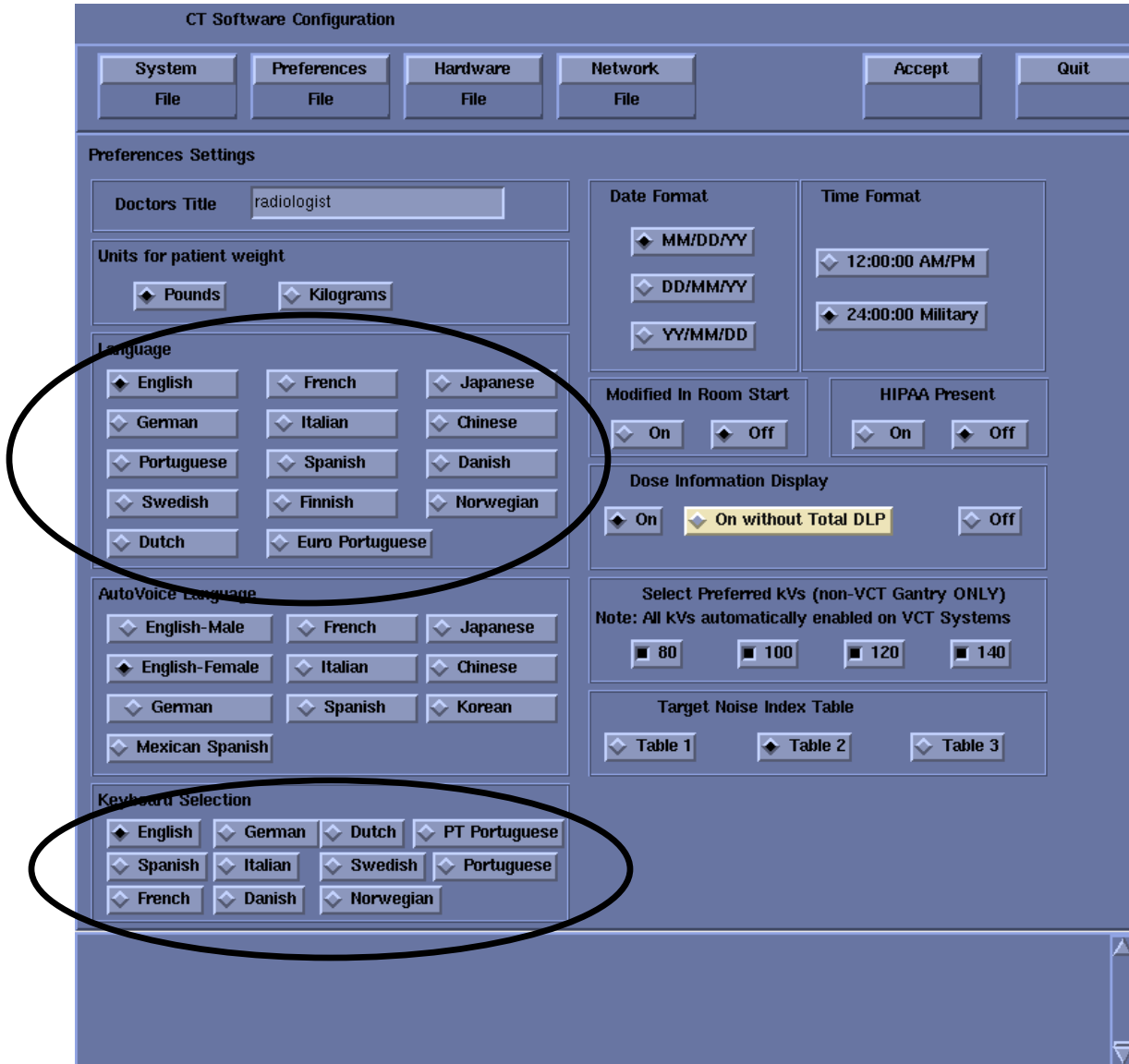
This section outlines the steps necessary to reconfigure the system into a different UI language, keyboard selection, and setting the station name. Please note that this section is only executed if the customer requests to have the system reconfigured to a new language and/or set the *Station Name*.

**DO NOT perform this section if the customer makes no such request. DO NOT ask/notify the customer regarding these new languages. DO NOT ask the customer if they would like to reconfigure their system into a new language.**

**NOTE:** Please note that certain applications (AutoBone, Advanced Vessel Analysis, CardIQ Pro, CardIQ Plus, CardEP, CTC Pro, CTC Plus, and Dentascan) are not supported by European Portuguese, Danish, Dutch, Finnish, Norwegian, and Swedish.

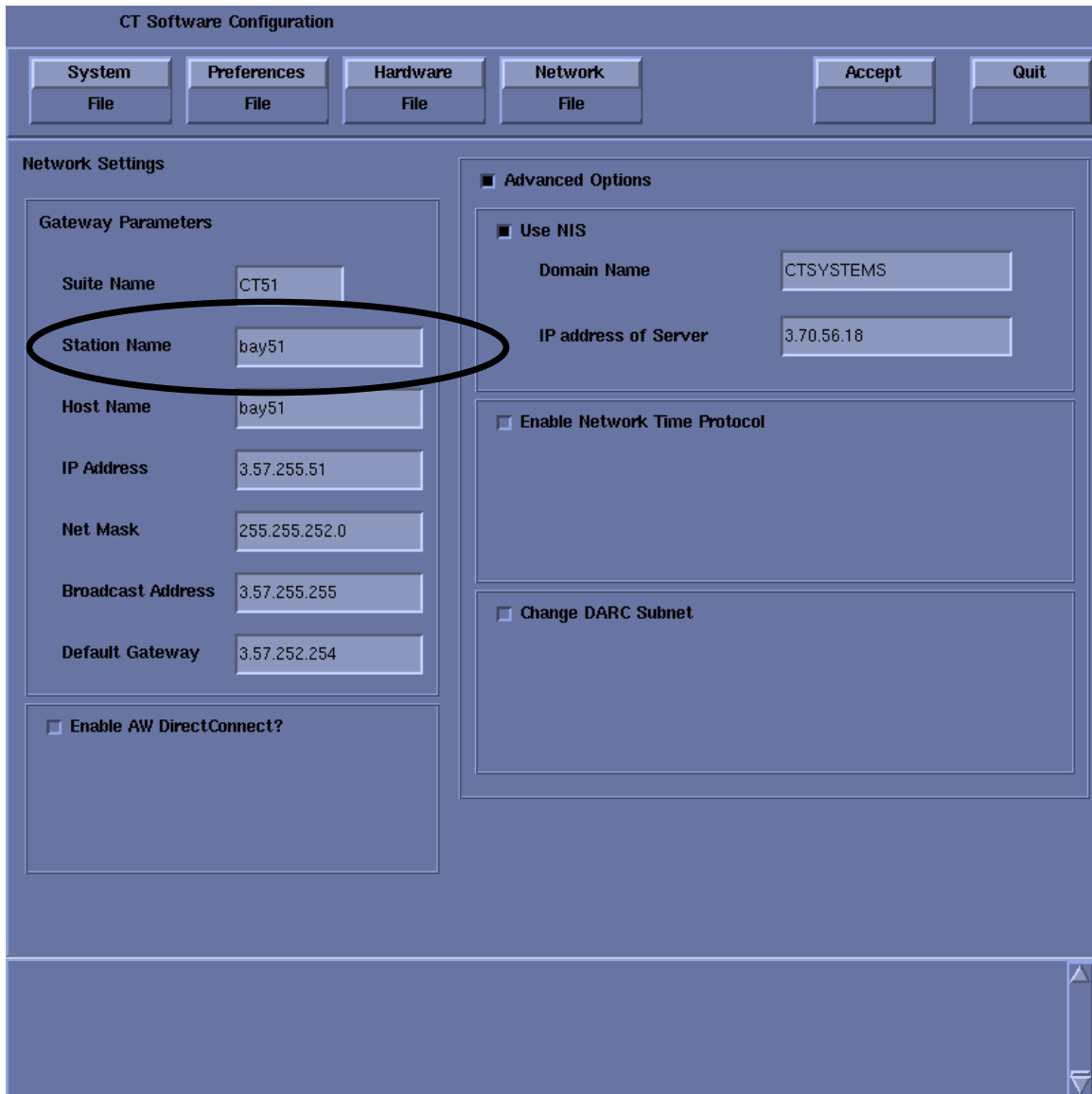
**NOTE:** If this section is performed anytime after Service Pack 2 is installed, a Save System State in the "SP2 System State" is required.

1. Open a Unix Shell.
2. Verify Application software is down. If Application software is not down, select **[Application Shutdown]** under the Common Service Desktop **[Utilities]** tab.
3. Wait approximately 1-2 minutes for Application software to go down
4. Become root:  
        {ctuser@hostname} **su -**  
        Password: **#bigguy**
5. As root on the Host type:  
        [root@hostname ~]# **reconfig**
6. Select **[config]**.
7. In the **[Preferences]** tab, new languages are available. Select the customer's desired language.
8. In the **[Preferences]** tab, select the **keyboard selection** based on the keyboard language.



10. Proceed to step 11 to setup *Station Name*.

11. Select the [Network] Tab.



12. Enter the *Station Name* using the following guidelines:
  - The *Station Name* identifies the text that will be stored in the DICOM attribute "Station Name" (DICOM TAG 0008,1010) in all CT images created. Some pacs systems may use the Station Name attribute or system tracking for identification of the scanner where the CT images were generated. Typically, the Host Name and Station Name will be the same.
  - *Station Name* MUST NOT exceed 16 Characters
  - *Station Name* MUST only contain the following characters: a through z, A through Z, 0 through 9, - and \_
  - *Station Name* will default to the Host Name if left blank.
13. Select the **[Accept]** tab. When prompted to reboot, select **[Yes]**.  
**NOTE:** Please wait until Reboot is completely finished before moving on to the next step.  
**NOTE:** The Gantry must be connected to the Operator Console during the reboot process.
14. Please return to the section you were previously working on.

## APPENDIX B: SERVICE PACK 2 INSTALLATION FROM SOFTWARE DOWNLOAD DIRECTORY

**ATTENTION:** If you're installing Service Pack 2 from the download directory, make sure to verify the size of the file in the directory before proceeding. The file downloaded should be 148MB in size. If the file size is not correct, it is possible that the Service Pack did not download correctly. Please try to download again. To check the size of the file downloaded, use the following commands:

1. Type: `ls -al /usr/g/ctuser/sw_download/patches`
2. Output displayed:  
`-rwxrwxrwx 1 ctuser users 148672212 Jun 10 14:07 07MW11.10_H1_H2_GEHCSERVICEPACK2.0-2-26.i386.rpm*`

This section is for those sites that should have Service Pack 2.0 auto-downloaded on the system, but **DO NOT**. The steps below describe the process of enabling the ProDiags and Auto-Download features:

1. Confirm that site is on the FMI 25407 Effectivity List
2. Verify that site is Broadband connected with Insite™ connectivity
3. Become root:
4. Check if ProDiags is already enabled:  
`[root@hostname ~]# crontab -l | grep -i prodiags`  
If an output similar to the following is displayed, then ProDiags is already enabled. Skip steps 5 and 6, and proceed with step 7. If you **DO NOT** see a similar output, then ProDiags is **NOT** enabled; proceed to step 5:

```
1,16,31,46 * * * * /usr/g/insite/bin/cronWrapper /usr/g/insite/ProDiags/bin/proDiagsCheck >/dev/null 2>&1
```

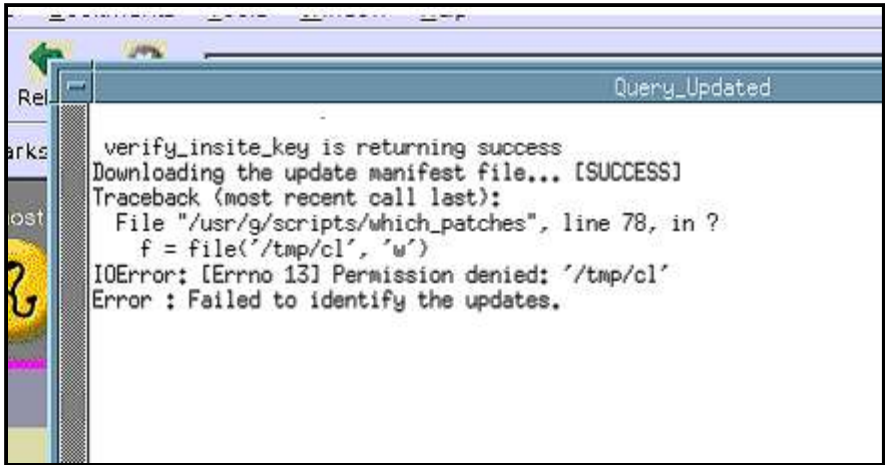
5. Enable ProDiags to use the default schedule and task settings:  
`[root@hostname ~]# cd ~insite/ProDiags/bin`  
`[root@hostname ~]# pd_install -auto`
6. Perform step 4 again to ensure that ProDiags was enabled successfully.
7. Open the Common Service Desktop
8. Select the **[Utilities]** tab
9. Select **[Update Management]**

**NOTE:** Service Key is required for onsite users to access Update Management Menu. Remote users coming in as insite do not need a Service Key.

10. Toggle the **[Enable/Disable Auto Download]** button until Auto-Download is enabled. The following output will be displayed when Auto-Download is enabled:

**"Auto Download of updates is enabled in this scanner"**

11. Select **[Query Updates]**
12. If the system displays the Service Pack 2.0 update, select **[Download Updates]** to download Service Pack 2. After the download is completed, close the Common Service Desktop and return to the section you were previously working on.
13. If after selecting **[Query Updates]**, you get an error message similar to the one below, proceed to the next steps to resolve it. **NOTE:** this error will be fixed with Service Pack 2.



14. You will need to change ownership of the following files:

**/tmp/cl**  
**/tmp/cl1**  
**/tmp/cl2**

Become root:

```
[insite@ncict1 patches]$ su - root
Password: enter root password
```

*Change directory to /tmp and list cl\* files. Note that ownership is likely root.*

```
[root@ncict1 ~]# cd /tmp
[root@ncict1 /tmp]# ls -al cl*
-rw-r--r-- 1 root root 9 Jun 30 11:16 cl
-rw-r--r-- 1 root root 2 Jun 30 11:16 cl1
-rw-r--r-- 1 root root 27 Jun 30 11:16 cl2
-rw-rw-rw- 1 insite root 733 Jul 1 10:21 clientdrv.trace
```

*Remove files cl cl1 cl2, answer yes to remove each one.*

```
[root@ncict1 /tmp]# rm -r cl cl1 cl2
rm: remove regular file `cl'? y
rm: remove regular file `cl1'? y
rm: remove regular file `cl2'? y
```

*Recreate cl, cl1, cl2 with ctuser ownership*

```
[root@ncict1 /tmp]# su - ctuser
{ctuser@ncict1}[1] touch /tmp/cl
{ctuser@ncict1}[2] touch /tmp/cl1
{ctuser@ncict1}[3] touch /tmp/cl2
```

Now note that ownership has changed to ctuser

```
{ctuser@ncict1}[4] cd /tmp
```

```
{ctuser@ncict1}[5] ls -al cl*
```

```
-rw-rw-r-- 1 ctuser users 0 Jul 1 15:51 cl  
-rw-rw-r-- 1 ctuser users 0 Jul 1 15:51 cl1  
-rw-rw-r-- 1 ctuser users 0 Jul 1 15:51 cl2  
-rw-rw-rw- 1 insite root 733 Jul 1 10:21 clientdrv.trace
```

15. Now retry to **[Query Updates]**

16. You may get a message stating, "**there are no relevant updates available**". This may mean that:

- The software revision of the scanner is not compatible with the Service Pack, is not the current revision or is not applicable.
- The Service Pack has already been loaded onto the scanner... check **/usr/g/ctuser/sw\_download/patches** directory to see if it is already there.
- The System ID was not loaded into the download server. This may be because the System ID was not on the effectivity list. It may also be that the site is not truly Broadband connected. Finally, the System ID may have been accidentally missed during download.
- If you think the System ID should have been downloaded to the server but it isn't, contact Gerry Bass or Abdallah Elsayed.

17. When you are finished with this appendix, please return to the section you were preciously working on.

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