

Open Console with Z8G4 Upgrade Instruction

Service Documentation



5844697-1EN

Rev 1

© 2020, GE 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, Copyright © 2020 by General Electric Company, Inc. All rights reserved.

This page intentionally left blank.

IMPORTANT PRECAUTIONS

LANGUAGE

<p>警告 (ZH-CN)</p>	<ul style="list-style-type: none"> • 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。
<p>VÝSTRAHA (CS)</p>	<ul style="list-style-type: none"> • 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 vlivem elektrického proudu, respektive vlivem mechanických či jiných rizik.
<p>ADVARSEL (DA)</p>	<ul style="list-style-type: none"> • 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.
<p>WAARSCHUWING (NL)</p>	<ul style="list-style-type: none"> • 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.
<p>WARNING (EN)</p>	<ul style="list-style-type: none"> • 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.

<p>HOIATUS (ET)</p>	<ul style="list-style-type: none"> • Käesolev teenindusjuhend on saadaval ainult inglise keeles. • Kui klienditeeninduse osutaja nõuab juhendit inglise keelest erinevas keeles, vastutab klient tõlketeenuse osutamise eest. • Ärge üritage seadmeid teenindada enne eelnevalt käesoleva teenindusjuhendiga tutvumist ja sellest aru saamist. • Käesoleva hoiatuse eiramine võib põhjustada teenuseosutaja, operaatori või patsiendi vigastamist elektrilöögi, mehaanilise või muu ohu tagajärjel.
<p>VAROITUS (FI)</p>	<ul style="list-style-type: none"> • 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.
<p>ATTENTION (FR)</p>	<ul style="list-style-type: none"> • 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 équipements tant que le manuel service 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>	<ul style="list-style-type: none"> • 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.
<p>ΠΡΟΕΙΔΟΠΟΙΗΣΗ (EL)</p>	<ul style="list-style-type: none"> • Το παρόν εγχειρίδιο σέρβις διατίθεται στα αγγλικά μόνο. • Εάν το άτομο παροχής σέρβις ενός πελάτη απαιτεί το παρόν εγχειρίδιο σε γλώσσα εκτός των αγγλικών, αποτελεί ευθύνη του πελάτη να παρέχει υπηρεσίες μετάφρασης. • Μην επιχειρήσετε την εκτέλεση εργασιών σέρβις στον εξοπλισμό εκτός εάν έχετε συμβουλευτεί και έχετε κατανοήσει το παρόν εγχειρίδιο σέρβις. • Εάν δε λάβετε υπόψη την προειδοποίηση αυτή, ενδέχεται να προκληθεί τραυματισμός στο άτομο παροχής σέρβις, στο χειριστή ή στον ασθενή από ηλεκτροπληξία, μηχανικούς ή άλλους κινδύνους.

<p>FIGYELMEZTETÉS (HU)</p>	<ul style="list-style-type: none"> • Ezen karbantartási kézikönyv kizárólag angol nyelven érhető el. • 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>	<ul style="list-style-type: none"> • Þessi þjónustuhandbók er eingöngu fáanleg á ensku. • 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>	<ul style="list-style-type: none"> • Il presente manuale di manutenzione è disponibile soltanto in inglese. • Se un addetto alla manutenzione richiede il manuale in una lingua diversa, il cliente è tenuto a provvedere direttamente alla traduzione. • Si proceda alla manutenzione dell'apparecchiatura solo dopo aver consultato il presente manuale ed averne compreso il contenuto • 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.
<p>警告 (JA)</p>	<ul style="list-style-type: none"> • 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。
<p>경고 (KO)</p>	<ul style="list-style-type: none"> • 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.

<p>BRDINJUMS (LV)</p>	<ul style="list-style-type: none"> • Šī apkalpes rokasgrāmata ir pieejama tikai angļu valodā. • Ja klienta apkalpes sniedzējam nepieciešama informācija citā valodā, nevis angļu, klienta pienākums ir nodrošināt tulkošanu. • Neveiciet aprīkojuma apkalpi bez apkalpes rokasgrāmatas izlasīšanas un saprašanas. • Šī brīdinājuma neievērošana var radīt elektriskās strāvas trieciena, mehānisku vai citu risku izraisītu traumu apkalpes sniedzējam, operatoram vai pacientam.
<p>ĮSPĖJIMAS (LT)</p>	<ul style="list-style-type: none"> • Šis eksploatavimo vadovas yra prieinamas tik anglų kalba. • Jei kliento paslaugų tiekėjas reikalauja vadovo kita kalba – ne anglų, numatyti vertimo paslaugas yra kliento atsakomybė. • Nemėginkite 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.
<p>ADVARSEL (NO)</p>	<ul style="list-style-type: none"> • 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.
<p>OSTRZEŻENIE (PL)</p>	<ul style="list-style-type: none"> • Niniejszy podręcznik serwisowy dostępny jest jedynie 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.
<p>ATENÇÃO (PT-BR)</p>	<ul style="list-style-type: none"> • Este manual de assistência técnica só se encontra disponível em inglês. • Se qualquer outro serviço de assistência técnica, que não a gems, solicitar estes manuais noutro idioma, é da responsabilidade do cliente fornecer os serviços de tradução. • Não tente reparar o equipamento sem ter consultado e compreendido este manual de assistência técnica. • O não cumprimento deste aviso pode por em perigo a segurança do técnico, operador ou paciente devido a choques elétricos, mecânicos ou outros.

<p>ATENÇÃO (PT-PT)</p>	<ul style="list-style-type: none"> • 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 noutra idioma, é da responsabilidade do cliente fornecer os serviços de tradução. • Não tente reparar o equipamento sem ter consultado e compreendido este manual de assistência técnica. • O não cumprimento deste aviso pode colocar em perigo a segurança do técnico, do operador ou do paciente devido a choques eléctricos, mecânicos ou outros.
<p>ATENȚIE (RO)</p>	<ul style="list-style-type: none"> • 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.
<p>ОСТОРОЖНО! (RU)</p>	<ul style="list-style-type: none"> • 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.
<p>UPOZORENJE (SR)</p>	<ul style="list-style-type: none"> • Ovo servisno uputstvo je dostupno samo na engleskom jeziku. • Ako klijentov serviser zahteva neki drugi jezik, klijent je dužan da obezbedi prevodilacke usluge. • Ne pokušavajte da opravite uređaj ako niste pročitali i razumeli ovo servisno uputstvo. • Zanemarivanje ovog upozorenja može dovesti do povređivanja servisera, rukovaoca ili pacijenta usled strujnog udara ili mehanickih i drugih opasnosti.
<p>UPOZORNENIE (SK)</p>	<ul style="list-style-type: none"> • Tento návod na obsluhu je k dispozícii len v angličtine. • Ak zákazníkovi poskytovateľ služieb vyžaduje iný jazyk ako angličtinu, poskytnutie prekladateľských služieb je zodpovednosťou zákazníka. • Nepokúšajte sa o obsluhu zariadenia skôr, ako si neprečítate návod na obsluhu a neporozumiete mu. • Zanedbanie tohto upozornenia môže vyústiť do zranenia poskytovateľa služieb, obsluhujúcej osoby alebo pacienta elektrickým prúdom, do mechanického alebo iného nebezpečenstva.

<p>ATENCION (ES)</p>	<ul style="list-style-type: none"> • Este manual de servicio sólo existe en inglés. • 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.
<p>VARNING (SV)</p>	<ul style="list-style-type: none"> • 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.
<p>DIKKAT (TR)</p>	<ul style="list-style-type: none"> • Bu servis kilavuzunun sadece ingilizcesi mevcuttur. • Eğer müşteri teknisyeni bu kilavuzu ingilizce dışında bir başka lisandan talep ederse, bunu tercüme ettirmek müşteriye düşer. • Servis kilavuzunu okuyup anlamadan ekipmanlara müdahale etmeyiniz. • Bu uyarıya uyulmaması, elektrik, mekanik veya diğer tehlikelerden dolayı teknisyen, operatör veya hastanın yaralanmasına yol açabilir.
<p>ПРЕДУПРЕЖДЕНИЕ (BG)</p>	<ul style="list-style-type: none"> • Това упътване за работа е налично само на английски език. • 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 пациент в резултат на токов удар или механична или друга опасност.
<p>警告 (ZH-HK)</p>	<ul style="list-style-type: none"> • 本服務手冊僅提供英文版本。 • 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。
<p>警告 (ZH-TW)</p>	<ul style="list-style-type: none"> • 本維修手冊僅有英文版。 • 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。

<p>UPOZORENJE (HR)</p>	<ul style="list-style-type: none"> • Ovaj servisni priručnik dostupan je na engleskom jeziku. • 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.
<p>OPOZORILO (SL)</p>	<ul style="list-style-type: none"> • Ta servisni priručnik je na voljo samo v angleškem jeziku. • 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.

DAMAGE IN TRANSPORTATION

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

To file a report:

- Call 1-800-548-3366 and use option 6.
- Fill out the GIQ workflow for any items missing, damaged, OBF/FOI for in process installs:
http://supportcentral.ge.com/ProcessMaps/form_new_request.asp?prod_id=268679&form_id=573167&node_id=1916016&map_id=&reference_id=&reference_type
- 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, 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 GEMS CQA Process to report all omissions, errors, and defects in this publication.

Revision History

Revision	Date	Reason for change
1	06/04/20	Initial Release.

Revision History

This page intentionally left blank.

Table of Contents

Preface

Publication Conventions 17

Section 1.0

Safety & Hazard Information 17

1.1 Text and Character Representation..... 17
1.2 Graphical Representation 18

Section 2.0

Publication Conventions 19

2.1 General Paragraph and Character Styles..... 19
2.2 Page Layout..... 19
2.3 Computer Screen Output/Input Character Styles 20
2.4 Buttons, Switches and Keyboard Inputs (Hard & Soft Keys)..... 20

Chapter 1

Installation Overview..... 21

Section 1.0 System Requirement..... 21

Section 2.0 Overview 21

Section 3.0 Material List 21

3.1 Console Upgrade Kit..... 21
3.2 For Non-ASiR OpenOC - ASiR Upgrade Kit with SW..... 22
3.3 Recon Enhancement Package 22
3.4 In-Room Monitor Upgrade Kit..... 22
3.5 CF Memory Card for GLU..... 22

Section 4.0 Flowchart 23

Chapter 2

Upgrade Procedure 25

Section 1.0 Prerequisite..... 25

Section 2.0 Preparative..... 25

2.1 Software Version Checking 25

Section 3.0 Save System State 26

Section 4.0 Record System Information 26

4.1 Record AW Option Information..... 26
4.2 Record PPS Server Information 26
4.3 Record All Remote Host Network Information 28
4.4 Record Product Network Filters (PNF) Information 31
4.5 Record AW IP for Direct Information 32
4.6 Record Hardware Information..... 33

Section 5.0 Remove Customer Information / Re-Configure Console	33
Section 6.0 Console with Z800/Z820/Z840 Removal and OpenOC Console with Z8G4 Installation.....	33
6.1 Console with Z800/Z820/Z840 Host PC Removal	33
6.2 OpenOC with Z8G4 Host Computer Installation	34
6.2.1 Unpack OpenOC with Z8G4 Host Computer	34
6.2.2 Console Cable Connections.....	36
6.2.3 Console Cover Installation	45
Section 7.0 CF Card Replacement	46
Section 8.0 System Configuration	47
Section 9.0 Restore System State and Install Options	48
9.1 Restore System State	48
9.2 Install Options	48
Section 10.0 Flash Download	49
Section 11.0 Convert Protocol.....	51
11.1 Configure System Information on SUSE.....	51
Section 12.0 Finalization	54
12.1 ASiR Installation (If Purchased)	54
12.1.1 Check GPU Card	54
12.1.2 Check GPU ECC State	54
12.1.3 ASiR Option Installation	56
12.2 System Checking	56
12.3 Save System State.....	56
12.4 Disposing The Old Console	56
12.5 Sending The Product Locator Card.....	58

Preface

Publication Conventions

Please become familiar with the conventions used within this publication before proceeding.

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

A few examples are below. They include paragraph prefixes and modified text styles.



CAUTION
Pinch Points
Loss of Data
Sharp Objects

Caution is used when a hazard exists that 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



DANGER
EXCESSIVE
VOLTAGE
CRUSH
POINT

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


- ELECTROCUTION
- CRUSHING
- RADIATION



WARNING
ROTATING
EQUIPMENT
BARE WIRES

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-command motion.


 **NOTICE**
Equipment Damage Possible

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 crash
- Internal mechanical damage, such as to the x-ray tube
- Coasting the rotor through resonance.

It's important that the reader not ignore hazard statements in this document.

1.2 Graphical Representation

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

ELECTRICAL



LASER



MECHANICAL



HEAT



RADIATION



PINCH



Some others make you aware of specific procedures that should be followed.

AVOID STATIC ELECTRICITY



TAG AND LOCK OUT



WEAR EYE PROTECTION



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 and 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.

2.2 Page Layout

The diagram illustrates two pages from a manual. The left page is labeled 'Publication Part Number & Revision Number' and the right page is labeled 'Publication Title'. Callouts point to various elements:

- Header: 'GE Mission 5 remote (Remotes) (Z8G4) v1.0' and 'ZELUS REMOTE INTERCOM X 4B-2B876S G1-C'.
- Section Headers: '3.2.2 4B-2B876S Intercom Circuit Board' and '3.2.4 Remote Intercom X Board'.
- Text: 'USE TAG AND LOCK OUT PROCEDURE.' and '3.2.5 Remote Intercom X Board Test Points'.
- Footers: 'Revision 3.0 - 3/2016' and 'Chapter 11 - Safety'.
- Symbols: A triangle with an exclamation point and a circle with an 'A'.

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 Character Styles

Within this publication different character styles are used to indicate computer input and output text. Character (input, output, and variable) styles are used and applied to the text within a paragraph so as to indicate directions. Computer screen output and input is also formatted using mono (fixed width) spaced fonts.

Example: This paragraph denotes computer 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.
Fixed Output

Example: *This paragraph denotes computer screen output that is variable. Its output varies from application to application. Variable output is sometimes found placed between greater than and lesser than operators. For example: <variable_ouput>*
Variable Output

Example: **This paragraph denotes fixed input. It's typed input that will not vary from application to application. Fixed text the user is required to supply as input.**
Fixed Input

Example: *This paragraph denotes computer input that can vary from application to application. Variable text the user is required to supply as input. Variable input sometimes is placed between greater than and lesser than operators. For example: <variable_input>. In these cases, the (<>) operators are dropped prior to input. Exceptions are noted in the text.*
Variable Input

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: 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.
Hard Keys

Example: 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.
Soft Keys

Chapter 1

Installation Overview

Section 1.0 System Requirement

OpenOC with HP Z8G4 Upgrade Kits are available for the following system configuration:

- Optima CT520 DoD System with NIO16 Console Z800 / Z820 Host Computer
- Optima CT520 DoD System with OpenOC Z840 Host Computer
- Optima CT540 System with NIO16 Console Z800 / Z820 Host Computer
- Optima CT540 System with OpenOC Z840 Host Computer
- Optima Advance System with NIO16 Console Z820 Host Computer

Section 2.0 Overview

This upgrade instruction describes the procedures of NIO16 Console with Z800/Z820 host computer and OpenOC with Z840 host computer upgrade to OpenOC with Z8G4 host computer. If the site need to upgrade from CTT to SUSE, please manually record the following information due to this information is not carried forward by restoring system state.

- PPS Server Info
- All remote Host Network Information
- PNF Information
- AW IP for direct connect
- Option Information Licenses

Section 3.0 Material List

3.1 Console Upgrade Kit

Verify that the contents of upgrade kit are correct according to the material list below.

Upgrade Kits	Optima CT540 (Global)	Optima CT540 (China)	Optima CT520 (Global)	Optima CT520 (China)	Optima Advance (China)
	B76762DA	B77192DA	B76832DA	B77172DA	B77032DA
OpenOC16 (Z8G4)	B76692DA	B77062DA	B76692DA	B77062DA	B77072DA
TP	B76972DA (MDD)	B76972DA (MDD)	B77002DA (MDD)	B77002DA (MDD)	TP & SW: B76822DA
SW	B76702DA (HW)	B76702DA (HW)	B76812DA (HW)	B76812DA (HW)	
Upgrade Instruction	B76752DA	B76752DA	B76752DA	B76752DA	B76752DA
GSCB	B79942CB	B79942CB	B79942CB	B79942CB	B79942CB

3.2 For Non-ASiR OpenOC - ASiR Upgrade Kit with SW

If customer hopes to upgrade OpenOC16 to ASiR function, please order B76712DA for site.

ASiR Upgrade Kit	GEHW BCAT
	B76712DA
OpenOC16 ASiR Collector	5845299

For site already with OpenOC16, upgrade from Non-ASiR to ASiR (Only available for OpenOC16 with Z8G4 host computer system).

3.3 Recon Enhancement Package

Recon Enhancement could only be selected when Non-ASiR function.

Recon Enhancement Package	GEHW BCAT
	B76722DA
Recon Enhancement	B77322DA
GPU Fluoro for OpenOC16	B76732DA

3.4 In-Room Monitor Upgrade Kit

This kit is applicable to the site which equipped with the analog In-Room Monitor (B7710RN/ B7710LN) and need to upgrade to digital solution.

In-Room Monitor DP UPG kit	GEHW BCAT
	B7710AU
In Room Monitor Upgrade for B7710LN_RN	5718585

3.5 CF Memory Card for GLU

For Optima Elite (CTT 11BW46.3 or before), it needs to replace the CF Memory Card to upgrade the GLU-15 to GLU-2.

CF Memory Card for GLU	GEHW BCAT
	B75002DA

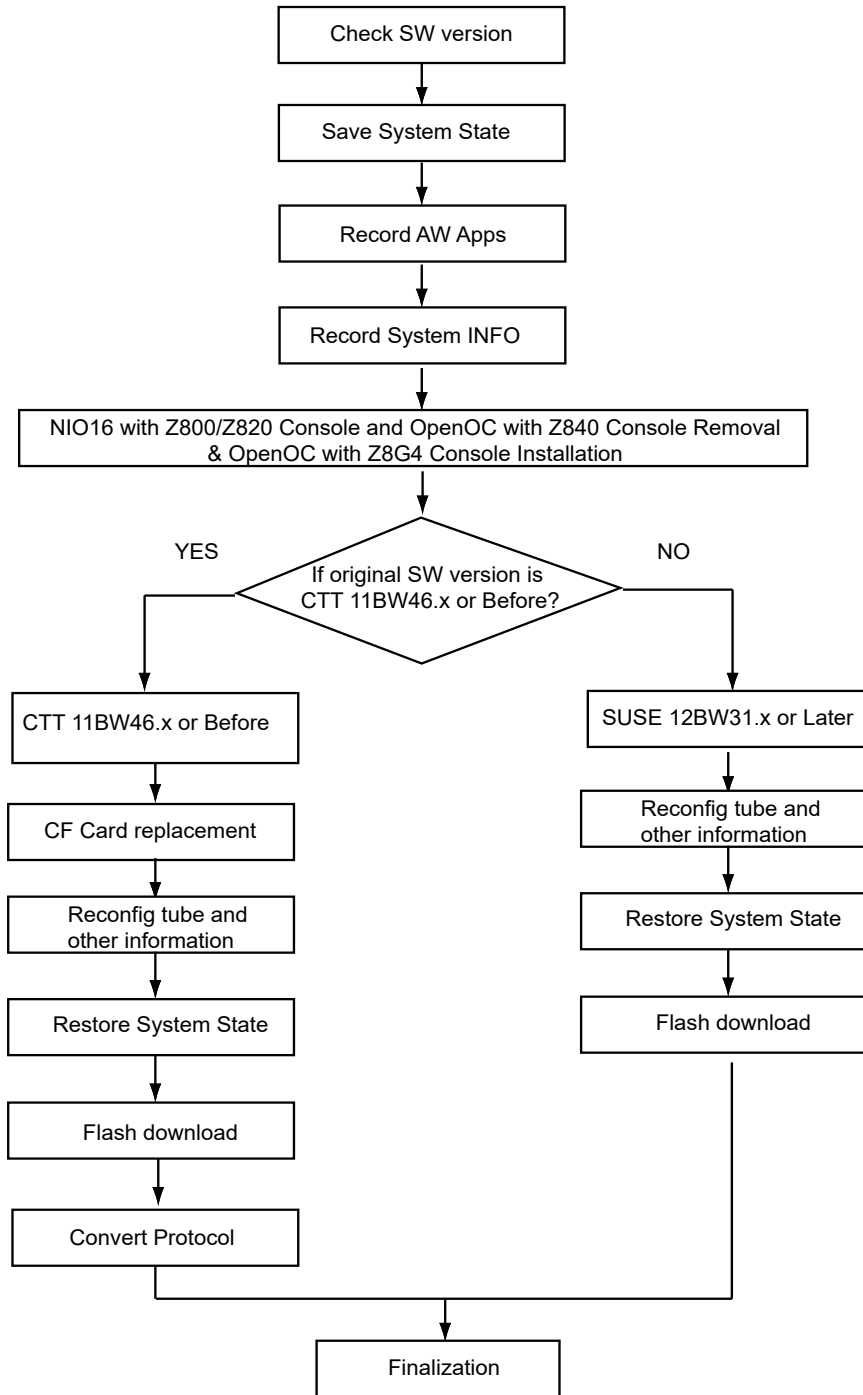
Note: CF card will only be shipped to the IB with SW version 11BW46.3 or CTT platform.

Section 4.0 Flowchart

The illustration below shows the main flow of the upgrade procedures.

Note: Please don't change the ctuser password before flash download.

Figure 1-1 Process Flowchart



1 – Upgrade Procedure

This page intentionally left blank.

Chapter 2

Upgrade Procedure

Section 1.0 Prerequisite

Please refer to the latest service methods to understand detailed hardware and software installation procedure (Service Method is provided on SIMS Content Viewer).

- Optima CT520 with DoD: Service Method 5437372-8EN_r12 or later.
- Optima CT540: Service Method 5350501-8EN_r24 or later.
- Optima Advance: Service Method 5437372-8EN_r12 or later.
- ASiR Installation manual: 5769390-1EN

Section 2.0 Preparative

2.1 Software Version Checking

Note: Refer to the latest service method about LFC procedure to understand detailed save state procedure and other information saving procedures.

- 1.) Open a Unix Shell, type:
`{ctuser@hostname} swhwinfo`
- 2.) Record Product Name and Software Version.
- 3.) There are three kinds of software version, refer to [Table 2-1](#).

System	Console Type	Software Version	OS Software
Optima CT520 DoD	NIO16 Console with Z800	12BW31.11	SUSE Platform
	NIO16 Console with Z820	14BW25.xx	SUSE Platform
	OpenOC Console with Z840	17BW24.xx/18BW42.xx	SUSE Platform
Optima CT540	NIO16 Console with Z800	11BW46.3	CTT Platform
	NIO16 Console with Z820	14BW25.xx	SUSE Platform
	OpenOC Console with Z840	17BW24.xx/18BW42.xx	SUSE Platform
Optima Advance	NIO16 Console with Z820	18BW39.xx	SUSE Platform

Table 2-1 Software Version Information



NOTICE

The software version 14BW25.xx, 17BW24.xx and 18BW42.xx all support the Optima CT540 Liquid Bearing tube. But 17BW24.xx and 18BW42.xx only support OpenOC16 with Z840 host computer.

Section 3.0 Save System State

If a Save State was just completed, it can be omitted here.

Note: When performing Save/Restore System State, make sure there is **ONLY** one USB storage device plugged in USB ports of both Console and Media Tower simultaneously, otherwise it may result in incorrect data storage.

- 1.) Insert the USB media in any of the console's USB ports.
- 2.) Select [Service Desktop]-> [Utilities].
- 3.) Select [System State - USB] for USB media. The System State Save/Restore screen appears.
- 4.) Select [All] to select all the calcs, characterization, etc.
- 5.) Select [Save].
- 6.) If USB is ready, select [Yes].
- 7.) When completed select [Dismiss].
- 8.) Remove System State USB media from USB port.

Section 4.0 Record System Information

4.1 Record AW Option Information

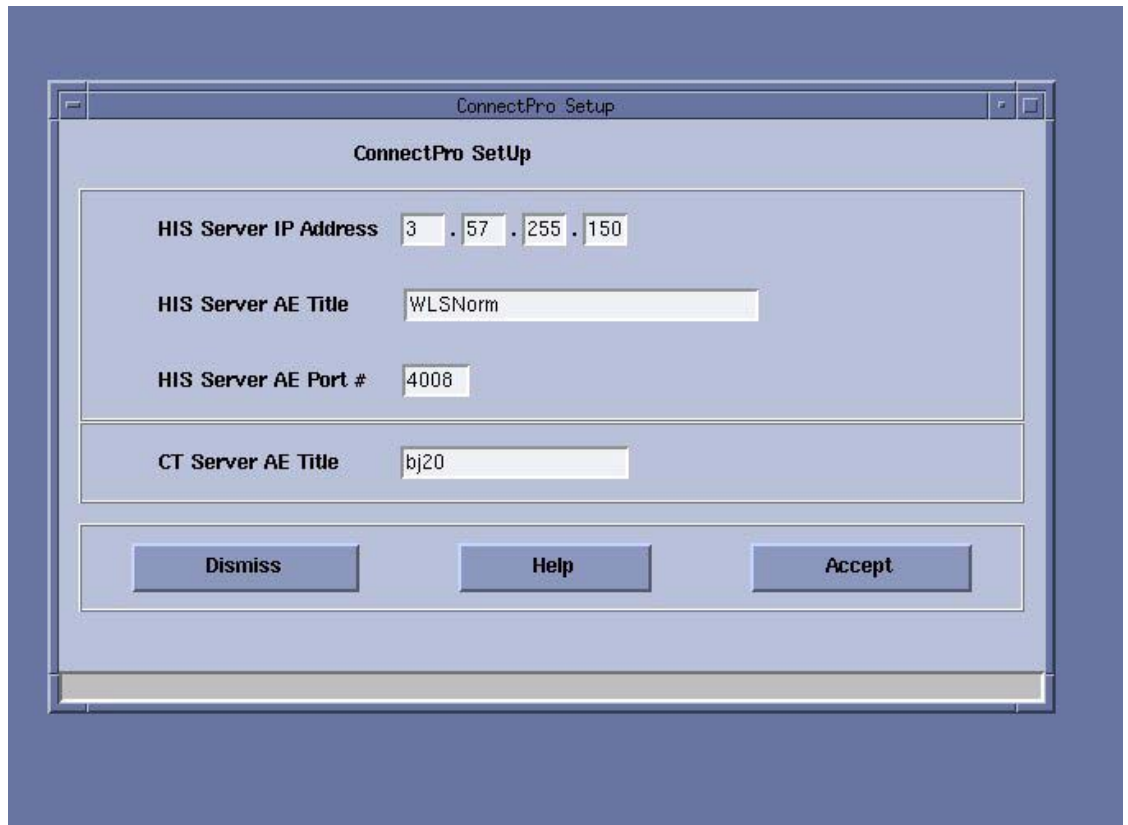
- 1.) Open a Unix Shell, type **swokinstall -p**.
- 2.) Write down if you have any of the following options installed. After the OC upgrade you will need to install NanoCloud AWS and go to the e-License Tool to gather the new keys. See [Table 2-2](#) is the NanoCloud AWS option list.

Option Name	B-Cat on Z8G4
<i>Volume viewer</i>	M81521XE
<i>AutoBone Xpress</i>	M81521FN
<i>VessellQ Xpress</i>	B77121WC
<i>CT Perfusion 4Neuro</i>	B77021RA
<i>CardIQ Xpress (Only for Optima CT540)</i>	B79821RE

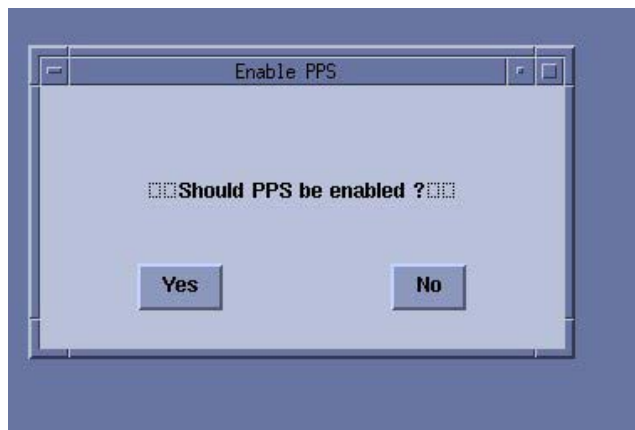
Table 2-2 NanoCloud AWS Option List

4.2 Record PPS Server Information

- 1.) Open a Unix Shell:
{ctuser@hostname} installhisris
- 2.) Press <ENTER>, the following illustration appeared, record the data then press [Accept].

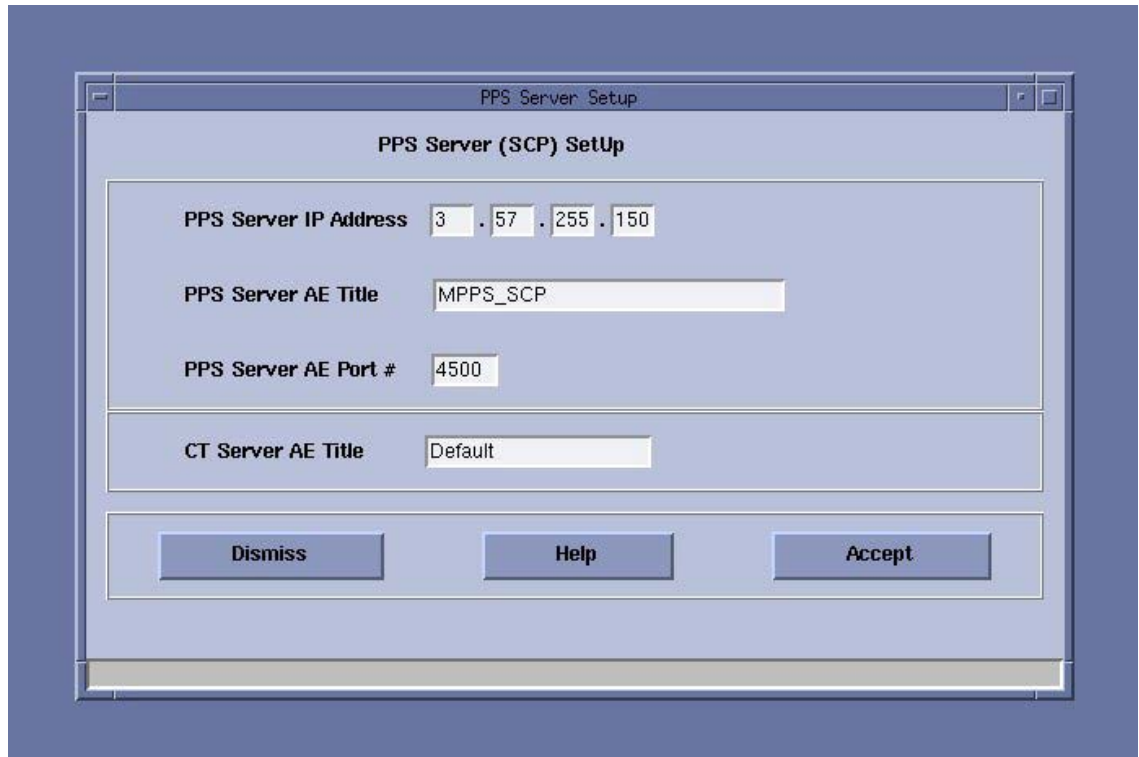


3.) "Should PPS be enabled?" is popped up. Select [Yes].



Note: Discuss with customer if they have HIS/RIS and PPS server installed or not, if yes, then select [Yes]; if no, then select [No].

4.) Record PPS data then press [Accept].

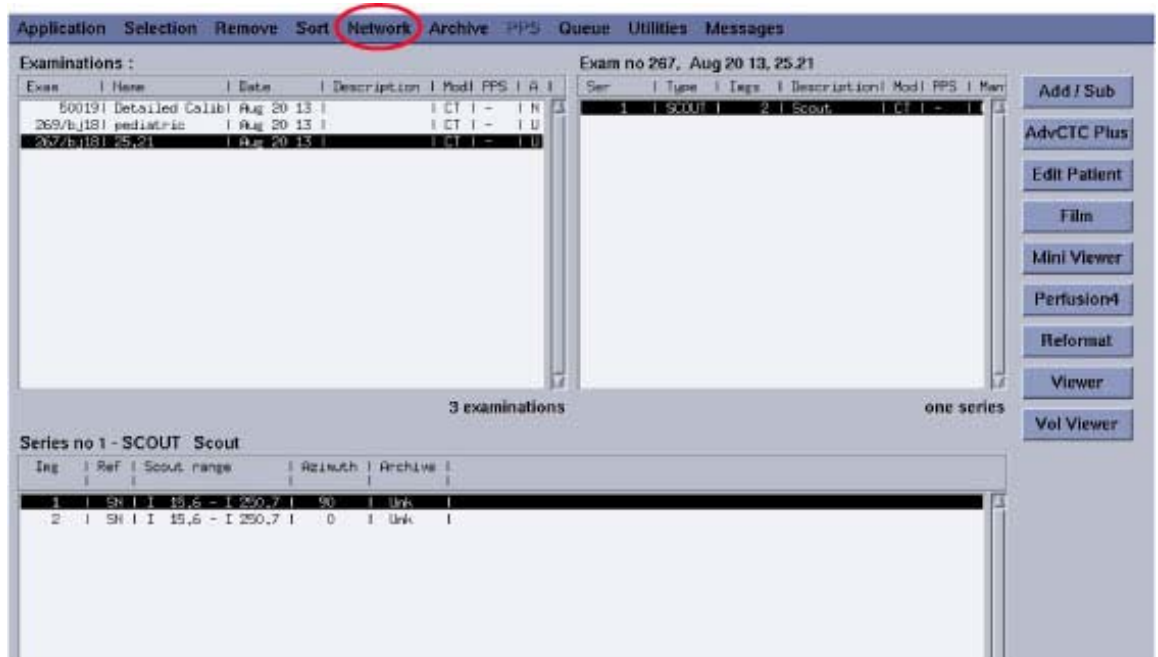


4.3 Record All Remote Host Network Information

1.) Select [ImageWorks] from the desktop.

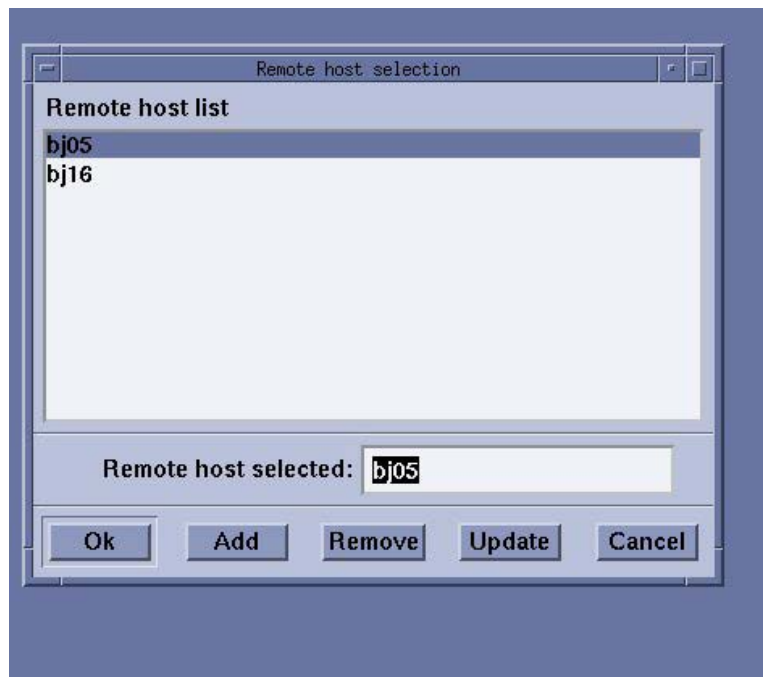


2.) Select [Network]



3.) Click [Select remote host] on the Network list menu

4.) Select Remote host from the Remote host list, then click [update].



5.) Record the Network information as below.

Remote host parameters

Host name	bj05
Network address	3.36.231.115
Network protocol	DICOM
Port number	4006
AE Title	bj05
Comment	No Comment

Archive Node: Auto Yes No

Access to local host:

send images? Yes No

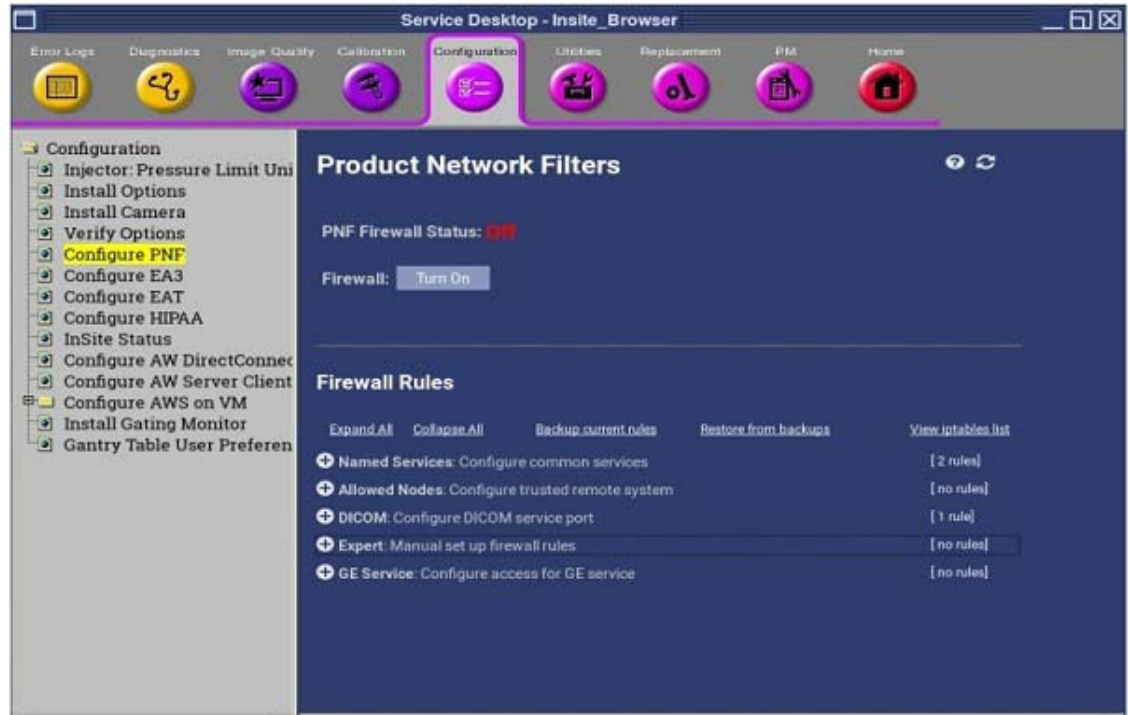
query/retrieve images? Yes No

Custom search? On Off

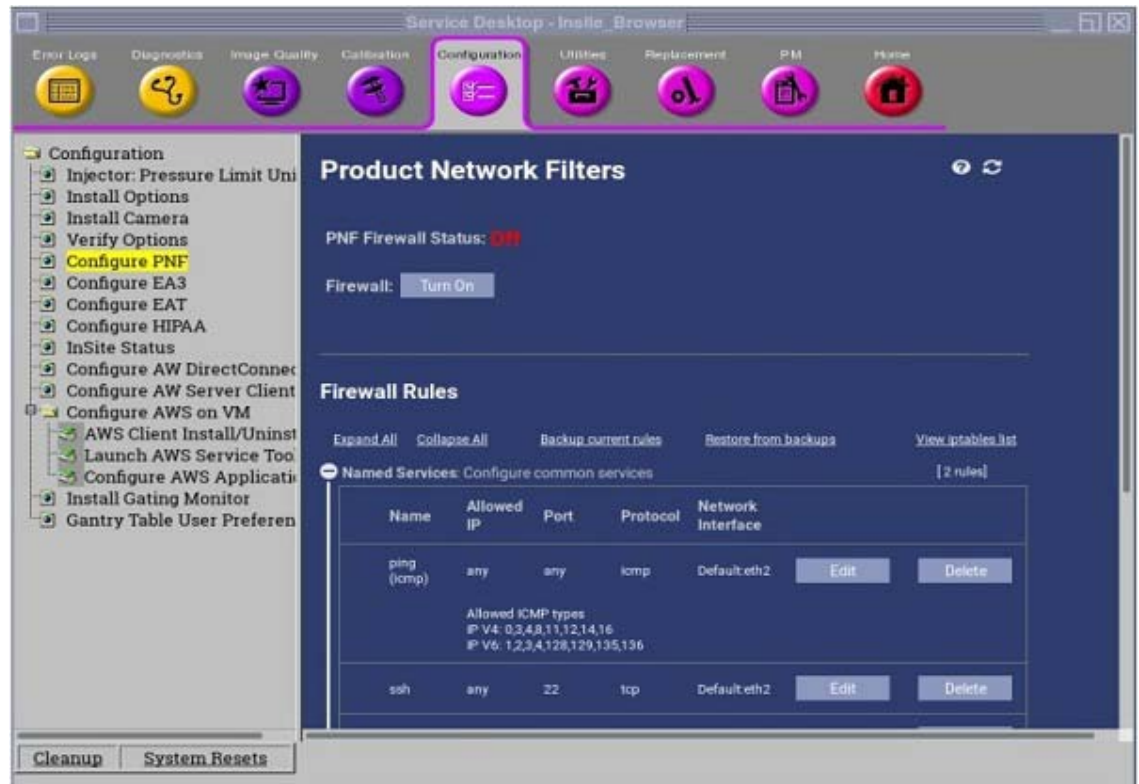
Save Cancel

4.4 Record Product Network Filters (PNF) Information

- 1.) Select the [SERVICE DESKTOP].
- 2.) Select in sequence: Configuration → Configure PNF



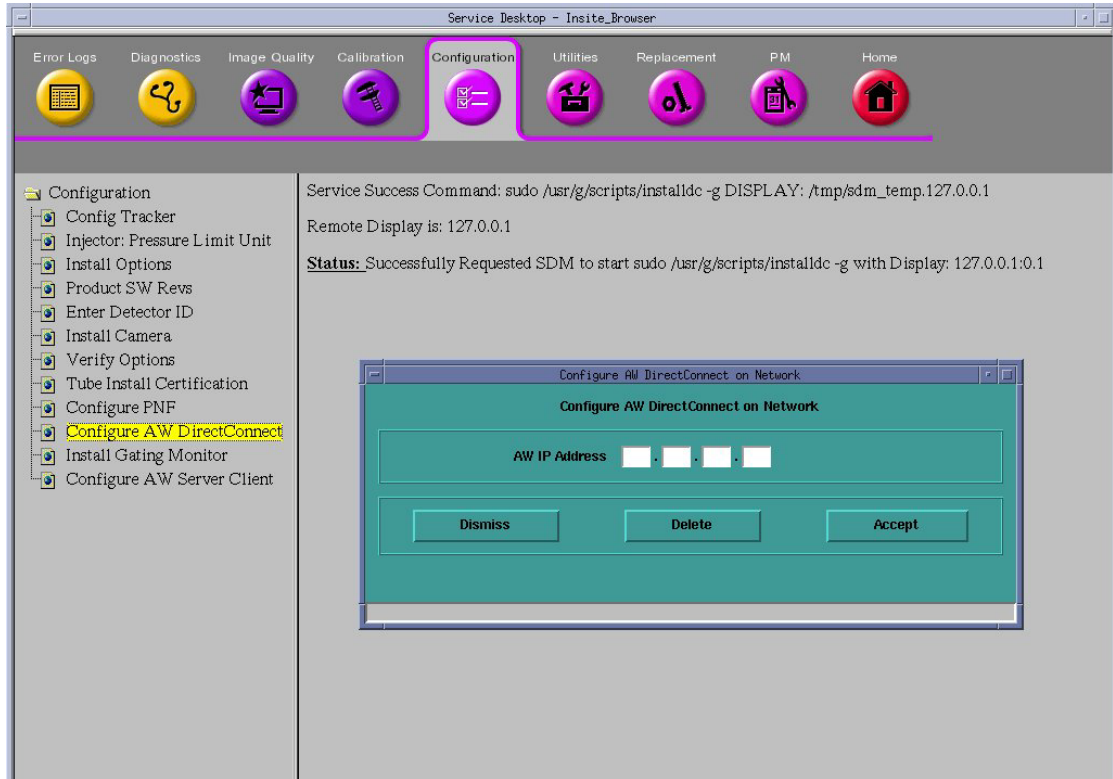
- 3.) Record PNF information.



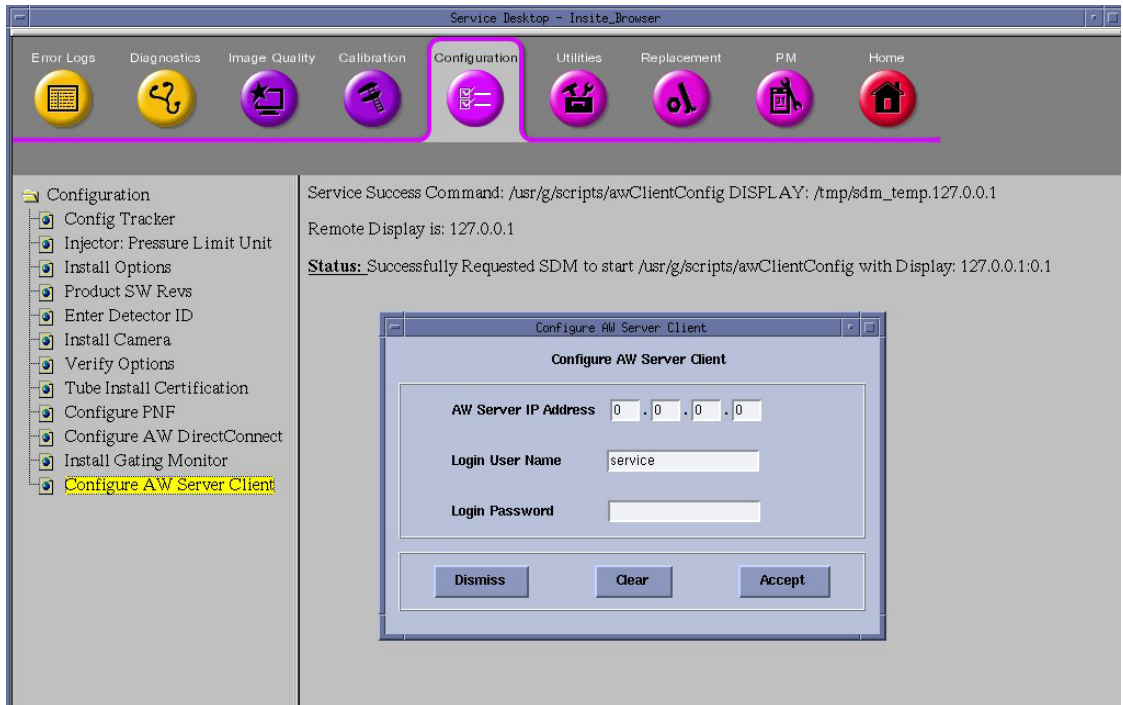
2 – Upgrade Procedure

4.5 Record AW IP for Direct Information

- 1.) Select the [SERVICE DESKTOP].
- 2.) Select in sequence: Configuration → Configure AW DirectConnect and record AW IP address



- 3.) Select in sequence: Configuration → Configure AW Server Client and record AW server INFO



4.6 Record Hardware Information

Record Table/Tube/DAS/PDU type information, these information will be used during new SW LFC when need to select hardware configuration.

Section 5.0 Remove Customer Information / Re-Configure Console

To maintain data and patient privacy, it is necessary to erase all Personal Healthcare Information (PHI) from the system before it is uninstalled. Perform the following as the last step before shutting down the console.

- 1.) Reset (Erase) the Image Database on the system. Delete the exams from ImageWork manually.
- 2.) Reset (Erase) the Scan Database on the system. Follow instructions found in the **Service Methods -> Software -> Software Installation Procedure -> System Configuration (Reconfig)**.
 - On the **System** Tab of the System Configuration Utility, perform the following:
 - a.) Remove the customer name, replace with [GEMS]
 - b.) Remove the Service ID, replace with [GEMS]
 - c.) Under Recreate Database, select [YES]
 - On the **Network** Tab of the System Configuration Utility, perform the following:
 - a.) Remove the site specific network information (ex: Names), replace with [GEMS]
 - b.) Remove the site specific network information (ex: IP Addresses) in Network Settings and Advance Options
- 3.) Select **[ACCEPT]** button.

Note: The Reset (Erase) of the Image and Scan Databases will remove PHI information from the system but may not meet local regulations for data removal/deletion. If local regulations require specific data removal/deletion criteria, follow local procedures for PHI removal from system.

- 4.) After completion of System Configuration (reconfig), reboot the system.
 - a.) Select **[OK]** on the Autostart disabled popup message
 - b.) Open a terminal window and type: **st**
 - c.) When the system is booted into Applications mode, select **[IMAGE WORKS]**
 - d.) Confirm that patient image data is not present

Section 6.0 Console with Z800/Z820/Z840 Removal and OpenOC Console with Z8G4 Installation

6.1 Console with Z800/Z820/Z840 Host PC Removal



NOTICE Make sure to follow all Lockout/Tagout requirements while performing this procedure. Refer to Equipment Service - Lockout-Tagout-PPE procedure.

- 1.) Shut down the system and power off the Operator Console power switch.
 - 2.) Switch OFF the breaker in the Power Distribution Box (hospital supply).
- Note: If there is UPS, switch OFF the UPS output.
- 3.) Visually verify proper labeling of each cable and disconnect all console rear cables.
 - 4.) Disconnect the cables between the old console and system (Gantry, PDU and local hospital network).
 - 5.) Remove the old OC aside.

6.2 OpenOC with Z8G4 Host Computer Installation

6.2.1 Unpack OpenOC with Z8G4 Host Computer

Please read details about OpenOC installation procedure in Service Manuals.

- 1.) Unpack console packaging.
 - a.) Release eight latches and remove the packaging covers.

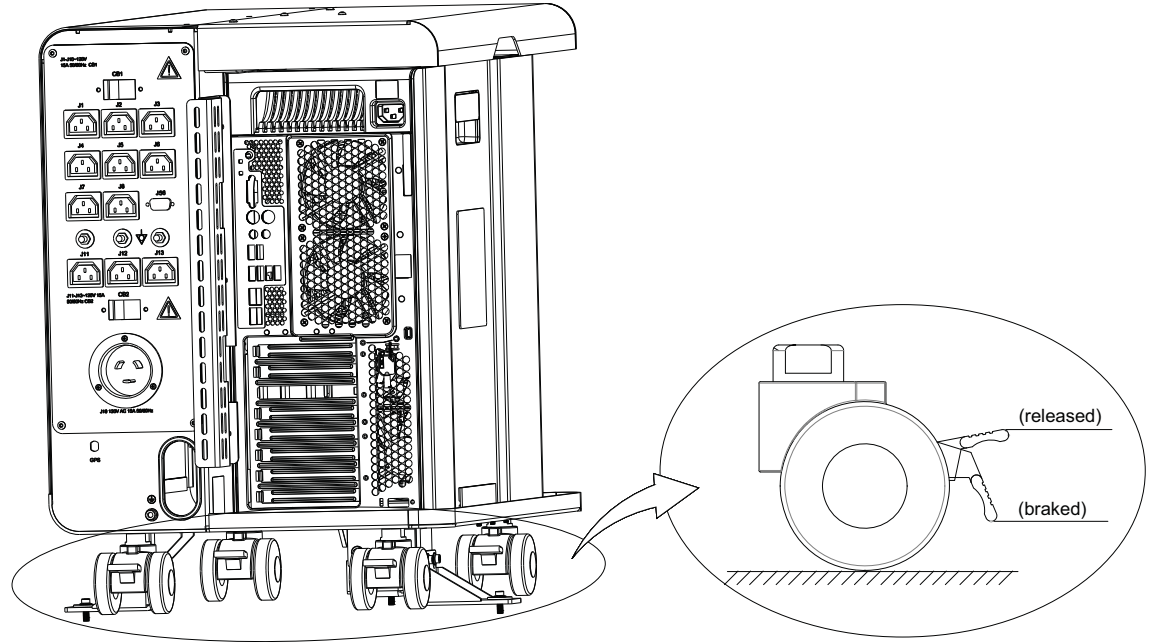
Figure 2-1 Console Packaging Removal



- b.) Remove all packaging and discard per local requirement
- 2.) Move console to installation location.

- 3.) Adjust console position, and then pedal four brakes to prevent console from sliding.

Figure 2-2 Brake (Example)



- 4.) If customer has purchased ASiR with OpenOC upgrade kit, then go to [Step 5](#); otherwise, go to section [6.2.2](#), on page 36.
- 5.) For detailed GPU Card install procedure, please refer to **GPU Fluoro Prerequisite Installation Manual (5771958-1EN)**.
- 6.) If site need meet local regulatory or customer requirement, please find the seismic bracket (5357148-3) from the upgrade kit and install on the console.
- 7.) Remove the side access panel by unscrewing its three screws from left side of Z8G4.

Figure 2-3 Side Access Panel



6.2.2 Console Cable Connections

Figure 2-4 Optima CT520 System Interconnect Diagram (with Z8G4)

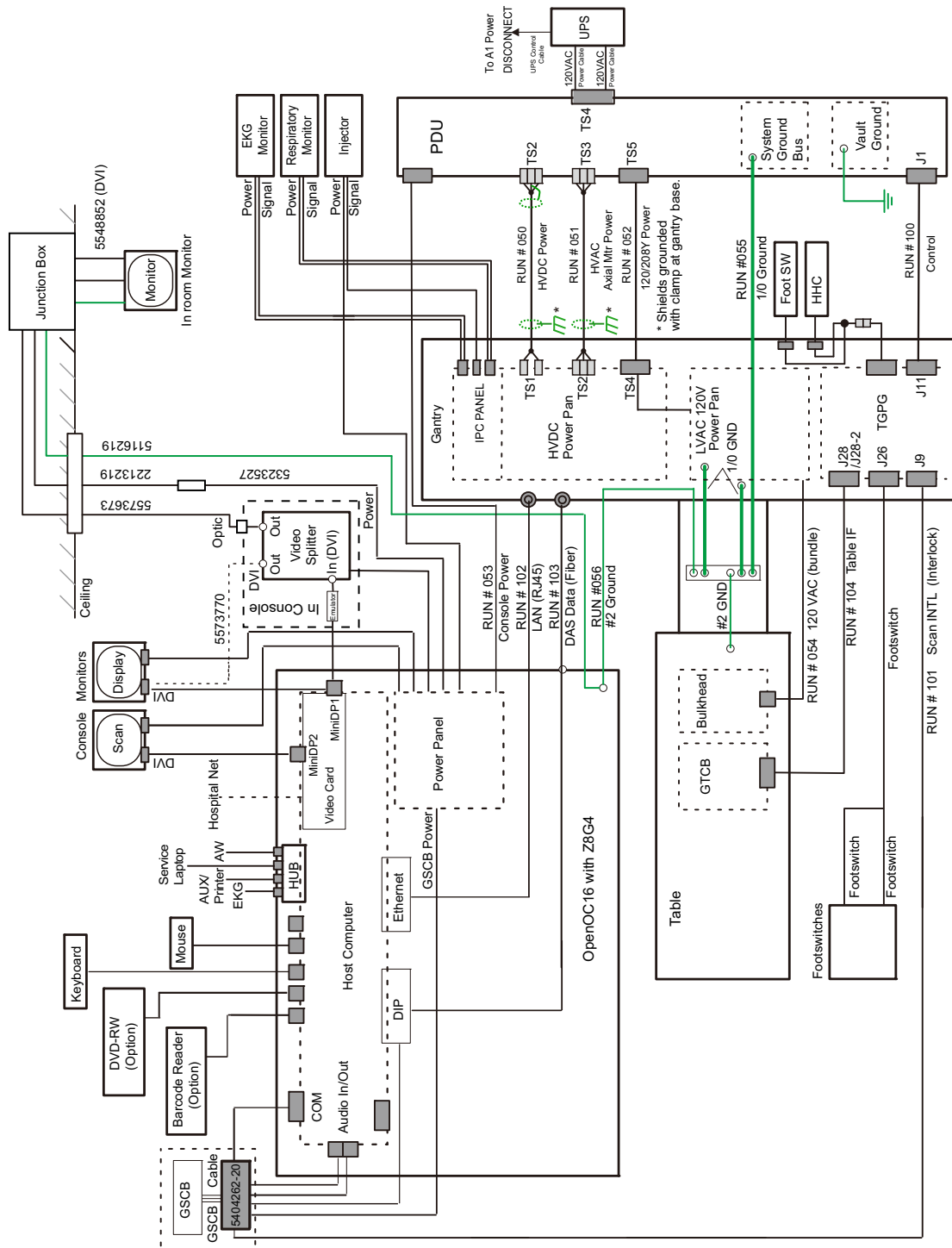
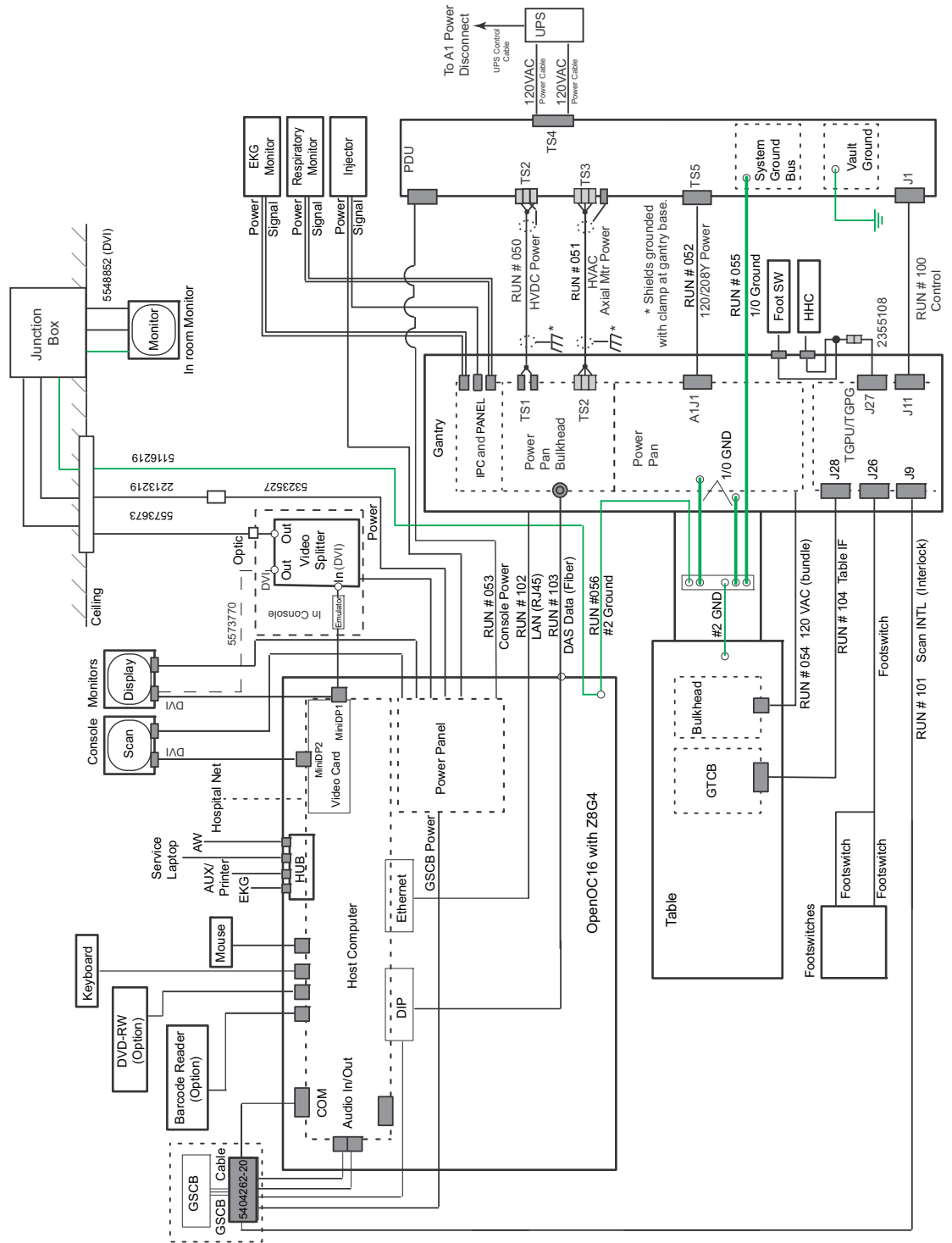


Figure 2-5 Optima CT540 System Interconnect Diagram (with Z8G4)

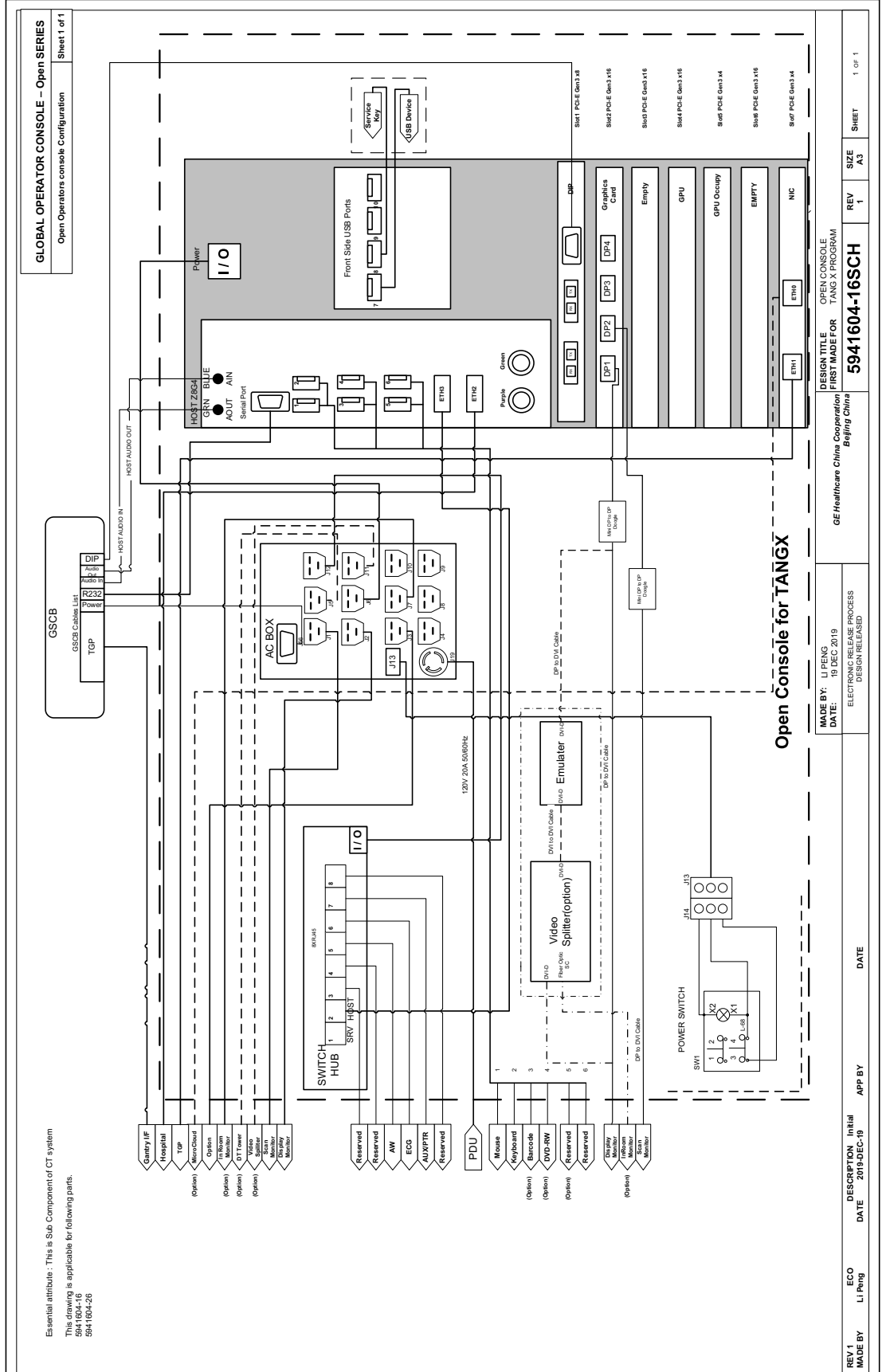


2 – Upgrade Procedure

Table 2-3 System Interconnect Cables for Console

NO.	DESCRIPTION	PART NUMBER	
		LONG CABLES	SHORT CABLES
53	LVAC Power Cable - PDU To Operator's Console Outlet	2343531	2343531-2
56	Ground, Raceway to Console	2371450-3	2371450-4
101	Signal Cable - Gantry to Console	5419981	5419981-2
102	Signal Cable (Ethernet) - Gantry to Console	5432020	
103	Data Cable (Fiber Optic) - Gantry to Console	5432019	

Figure 2-6 OpenOC Console Interconnect (with Z8G4)



GLOBAL OPERATOR CONSOLE – Open SERIES
 Open Operators console Configuration
 Sheet 1 of 1

Essential attribute: This is Sub Component of CT system
 This drawing is applicable for following parts:
 5941604-2B

REV 1	ECO	DATE	DESCRIPTION	APP BY	DATE
MADE BY	LI Peng	2019-DEC-19	2019-DEC-19		
ELECTRONIC RELEASE PROCESS DESIGN RELEASED					
MADE BY: LI PENG DATE: 19 DEC 2019					
ELECTRONIC RELEASE PROCESS DESIGN RELEASED					
DESIGN TITLE OPEN CONSOLE FIRST MADE FOR TANG X PROGRAM					
5941604-16SCH					
GE Healthcare China Cooperation Beijing China					
REV	1	SIZE	A3	SHEET	1 OF 1

Terminale Revision A-1

This document was created using VSD. Source Material is stored on the CT Product Engineering CAD database.

2 – Upgrade Procedure

Figure 2-7 Z8G4 Host Computer Port Label

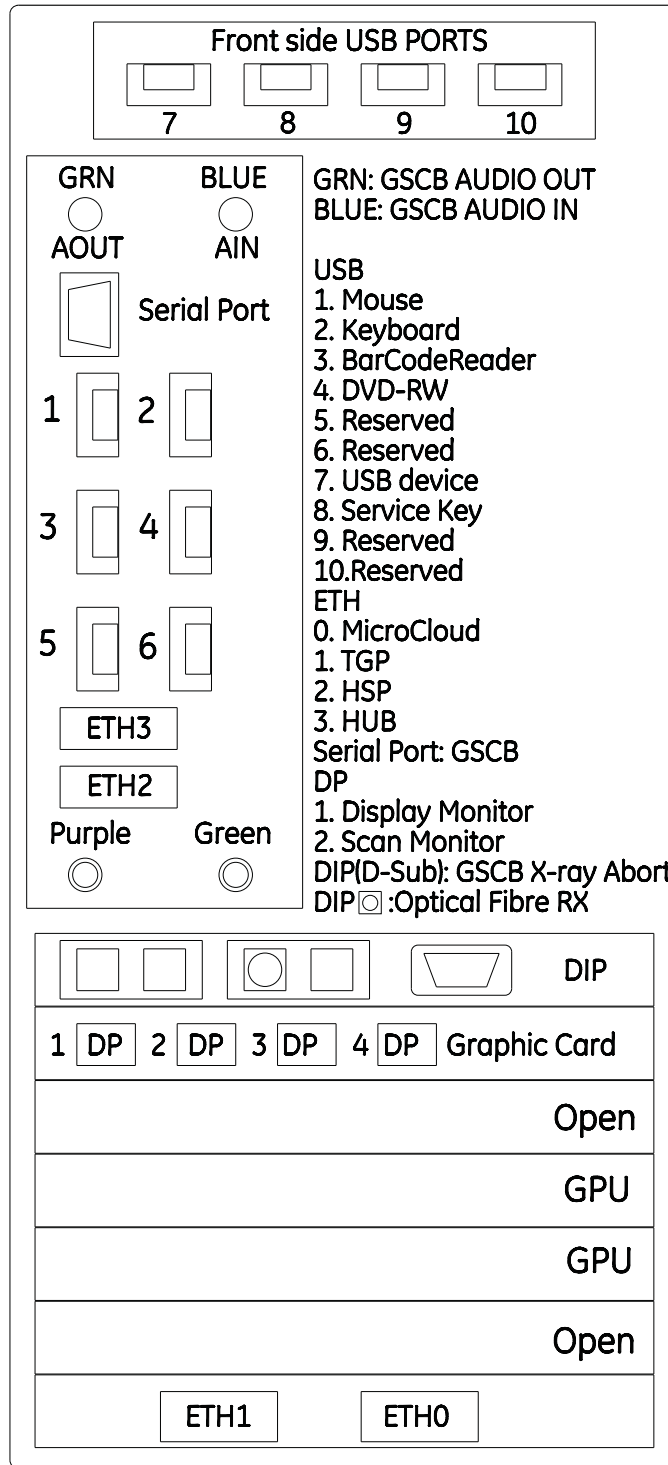


Figure 2-8 OpenOC AC Box Assignments



Number	Description
J1	Scan Monitor Power Connection
J2	Display Monitor Power Connection
J3/J4	Option
J5	DT Tower Power Connection
J7	In-Room Monitor
J11	Video Splitter
J12	Switch Hub
J13	Injector Power Connection
J56	GSCB Power Connection

Table 2-4 AC Box Outlet Assignments

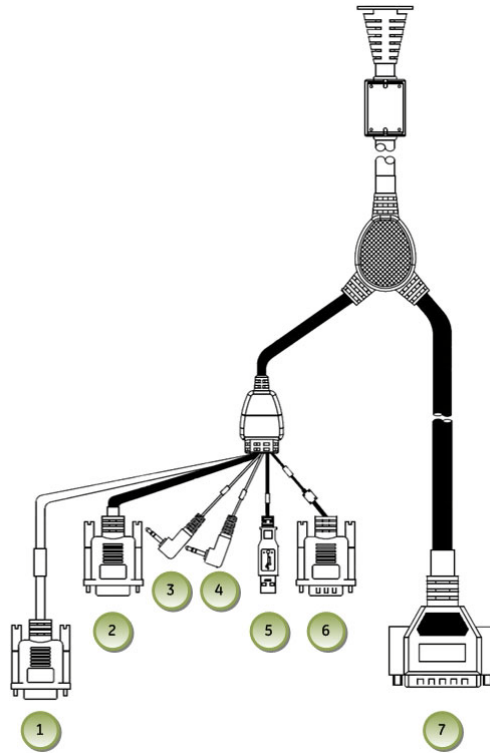
- 1.) Connect the Keyboard and Mouse cables to OpenOC Z8G4 Host Computer.

DESCRIPTION	PART NUMBER	CABLE LENGTH	QTY
USB Extension Cable (Mouse)	5458346	3500 mm	1
USB Extension Cable (Keyboard)	5431909	3500 mm	1

Table 2-5 Cable Extension

- 2.) Connect GSCB cables connectors to OpenOC AC Box and Z8G4 Host Computer according to [Figure 2-9](#) and [Table 2-6](#)

Figure 2-9 GSCB Connections



ITEM	DESCRIPTION
1	GSCB - Black DB-9 (Female) Connector Host Computer DIP
2	GSCB - Gray DB-9 (Female) Connector Host Computer RS232
3	GSCB - Green Audio Connector Host Computer Audio Out (Green)
4	GSCB - Blue Audio Connector Host Computer Audio In (Blue)
5	GSCB - USB Connector Reserved
6	GSCB - Black DB-9 (Male) Connector AC Box J56
7	GSCB - Black DB-25 (Male) Connector TGP Gantry Cable

Table 2-6 GSCB Cables

3.) Connect LCD Monitor cable connectors to OpenOC AC Box and Z8G4 Host Computer.

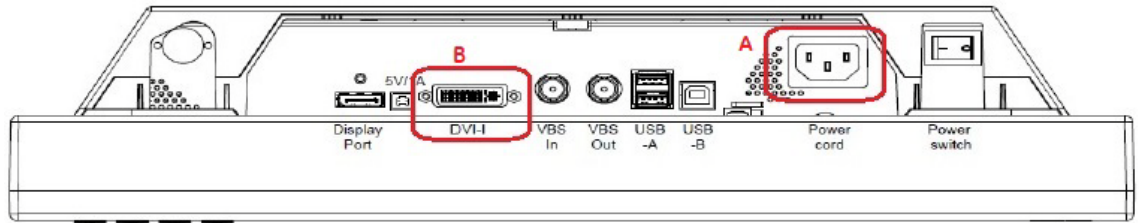
DESCRIPTION	PART NUMBER	CABLE LENGTH	QTY
Scan Monitor Power Cable	5478299-5	3050 mm	1
Image Monitor Power Cable	5478299-6	3050 mm	1
Monitor Video Cable (DP to monitor DVI)	5408703-2	3000 mm	2
Monitor Video Cable (MiniDP to DP)	5795077	250mm	2

Table 2-7 Monitor Cables for Z8G4

Figure 2-10 Monitor Cables for Z8G4



Figure 2-11 HP LCD Monitor



Item	Description
A	Power Cable Connection
B	DVI Video Connection

Table 2-8 Monitor Connections

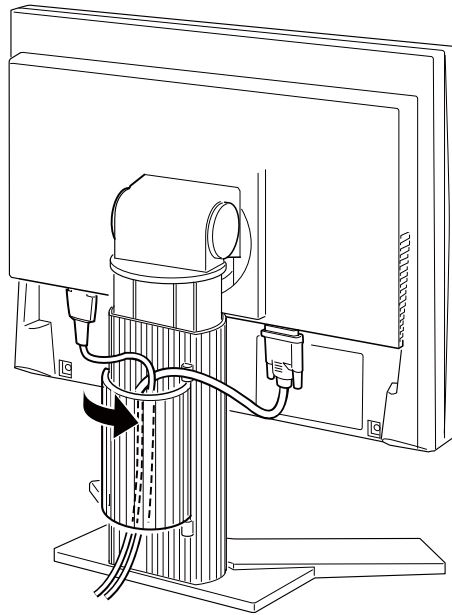
Scan Monitor

- Video cable: from Host PC miniDP to DP (5795077), and DP to monitor DVI (5408703-2 or the existing in site)
- Power cable: AC Box J1 to Monitor power

Image Monitor

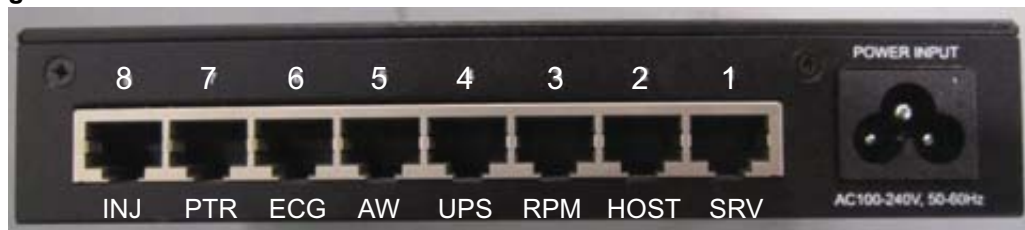
- Video cable: from Host PC miniDP to DP (5795077), and DP to monitor DVI (5408703-2 or the existing in site)
- Power cable: AC Box J2 to Monitor power

Figure 2-12 Cable Routing and Keeper



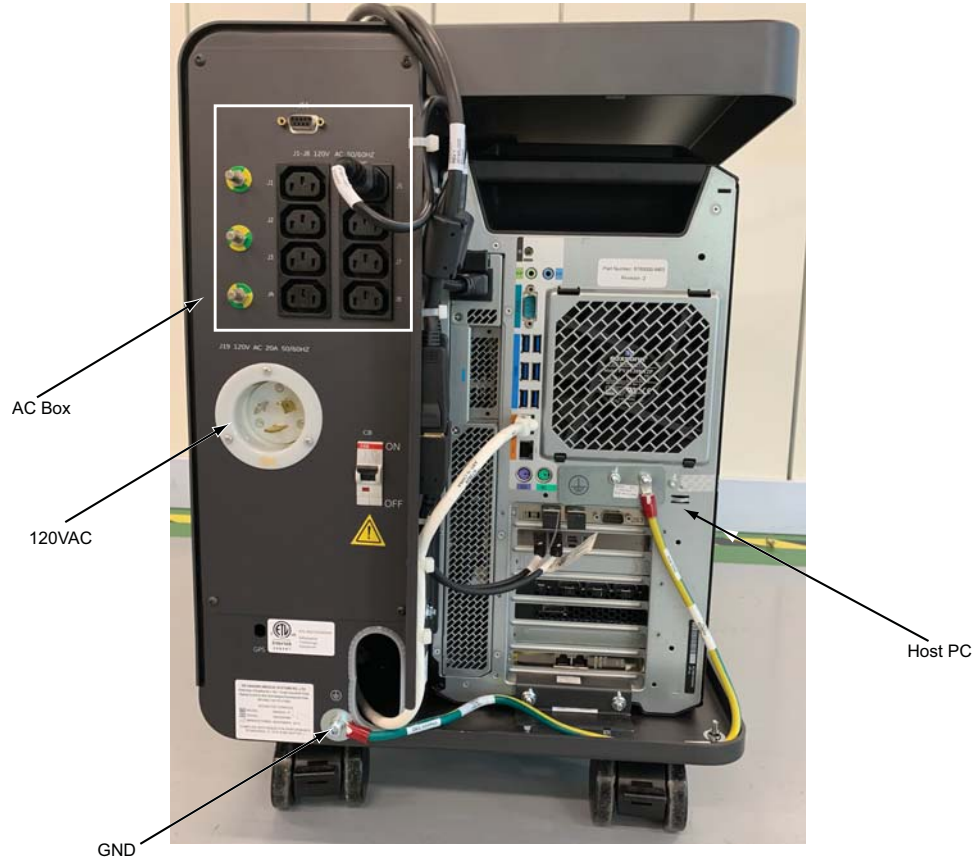
- 4.) Remove OpenOC right side cover and plug cables into Switch Hub on console if required.
- 5.) Connect other cables to Z8G4 Host Computer according to [Figure 2-7](#), then install right side cover of console.

Figure 2-13 Switch Hub Connections



- 6.) Connect the Power Cable and Ground Cable to the OpenOC Panel.

Figure 2-14 OpenOC Rear View with AC BOX



6.2.3 Console Cover Installation

Please refer to **Service Methods -> Replacement -> Open Console -> Open Console with Z8G4 -> Console Cover Removal and Installation** to Install console covers.

Section 7.0 CF Card Replacement

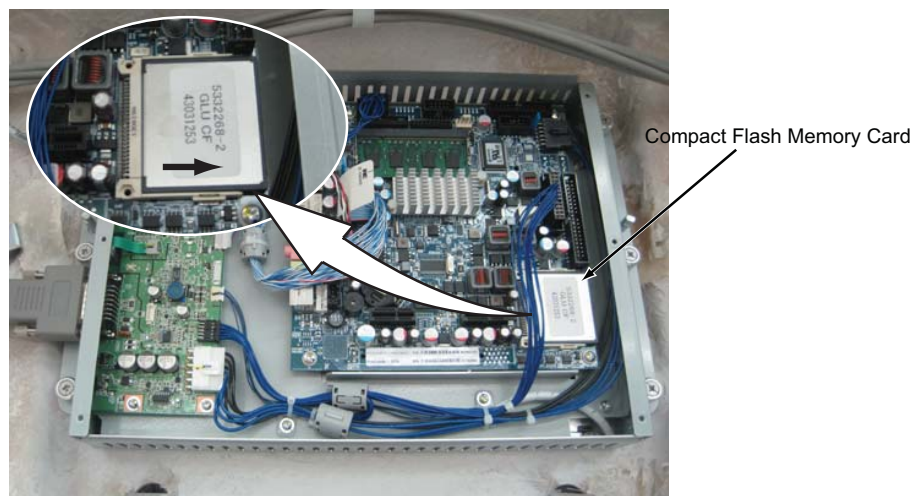
- If the software version checked in [2.1, Software Version Checking](#) is CTT 11BW46.x or before, go ahead the following steps.
 - If the software version checked in [2.1, Software Version Checking](#) is SUSE 12BW31.11 or later, skip this section and go to the next section: [Section 8.0, System Configuration](#)
- 1.) Remove the right side gantry cover.
 - 2.) Turn off the Axial Drive, 120VAC and HVDC switches on the Gantry Service Switch Panel.
 - 3.) Remove the gantry left side, top, scan window and front covers.
 - 4.) Remove the GLU Cover by unscrewing its six screws.

Figure 2-15 GLU Cover Removal



- 5.) Slide the old CF Card out of the Slot in the direction of arrow as shown below.

Figure 2-16 CF Card Removal



- 6.) Insert the new CF card into slot of the LCD Unit Board
- 7.) Reinstall the GLU cover.

Section 8.0 System Configuration

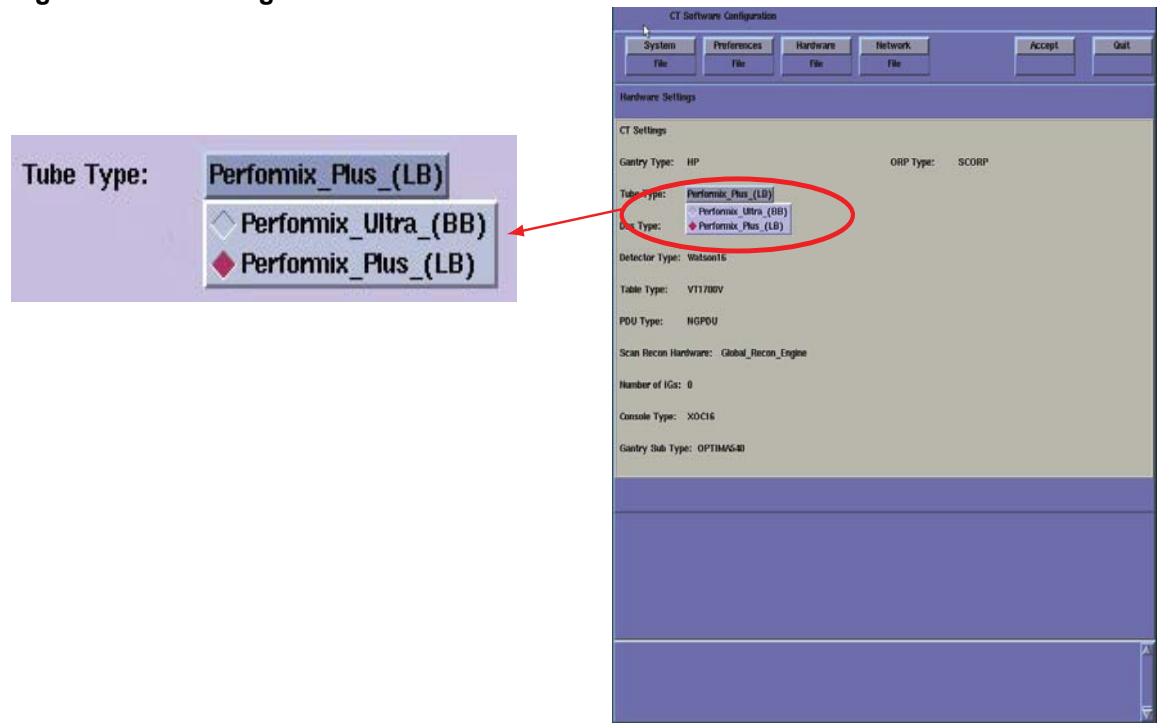
Reconfig tube and other information as site configuration

- 1.) Move the cradle all the way out of the gantry and lower to its lowest point.
- 2.) Shutdown App by **[Service Desktop]->[Utilities]->[Application Shutdown]**.
- 3.) After application shutdown completed, open a shell terminal to become root by typing "su -" and entering password.
- 4.) Run reconfig application by typing "reconfig".
- 5.) Click on **[Hardware]** tab to reconfig GUI and select **[Tube Type]** to select the appropriate tube type information on site (see [Figure 2-17](#)). Click **[Accept]** on the reconfig GUI to save configuration.

Product	DAS Type	Detector Type	Tube
Optima CT520	VYPER_KL_DOD_16	VYPER 16	Default
Optima Advance	VYPER_KL_DOD_16	VYPER 16	Default
Optima CT540	Pancake DAS (default)	Waston (default)	BB or LB based on site Tube type

Table 2-9 System Hardware Info

Figure 2-17 Reconfig Tube



2 – Upgrade Procedure

Section 9.0 Restore System State and Install Options

9.1 Restore System State

- 1.) Insert a previously saved System State USB Media in the USB ports.
- 2.) Wait until the USB Media is ready.
- 3.) Select the [Service] icon to access the CSD (Common Service Desktop).
- 4.) Select: [Utilities].
- 5.) Select: [System State - USB] for USB Media. The System State Save/Restore screen appears.
- 6.) Select [All].
- 7.) Select [Restore]. The Restore System State box appears.
- 8.) Select [Yes]. A message at the end of the System State Log window should display: Restore System State Completed Successfully.

Note: If Dose Check option is installed, Dose Audit tool starts up when Reconfig Info or Protocol is selected. That shows Configuration and Protocol summary. Press [Quit] to continue.

- 9.) Select [Yes] when the Scan Hardware Reset pop-up appears.
- 10.) When completed, select [Dismiss].
- 11.) Remove System State USB Media from USB port and place in a safe location.
- 12.) Reboot the Operators Console by selecting [Shutdown] Desktop, then select [Restart] in the Attention Window.
- 13.) Verify Restore System State.

9.2 Install Options



NOTICE All options need to apply new e-license through e-license website (<http://elicense.gehealthcare.com/elicense/>) when OC upgrade to Z8G4 Computer.

Note: 1024 Image Matrix is not available for China Market.

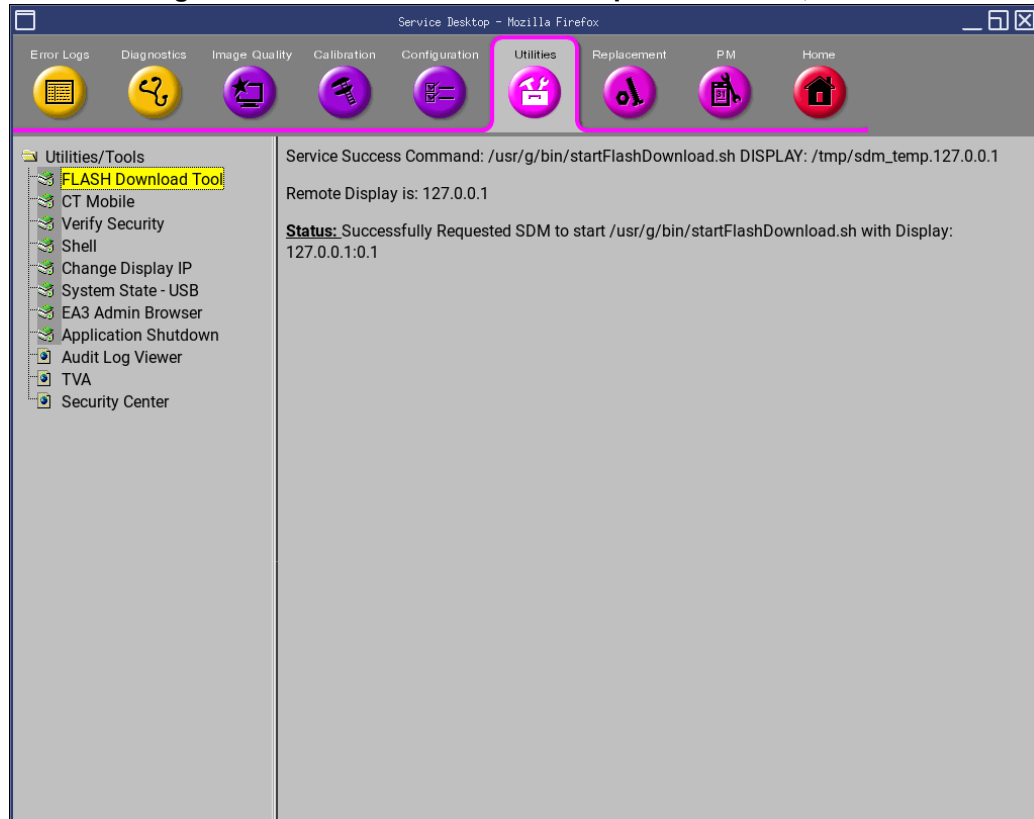
- 1.) Install the required options (except the AW options recorded in [4.1, Record AW Option Information](#)) by the license you got from <http://elicense.gehealthcare.com/elicense/>.
- 2.) For AW options (Recorded in [4.1, Record AW Option Information](#)):
 - a.) Run the script to remove the old option button which be restored in section 9.1, on page 48:
Type: ***remove_aw_apps_on_console***
 - b.) Install the NanoCloud AWS, refer to ***Service Methods -> Installation -> Option -> NanoCloud AWS Installation*** to Install NanoCloud AWS.

Section 10.0 Flash Download

Note: The Flash Download takes anywhere from 5-30 minutes, depending on which subsystems require updates.

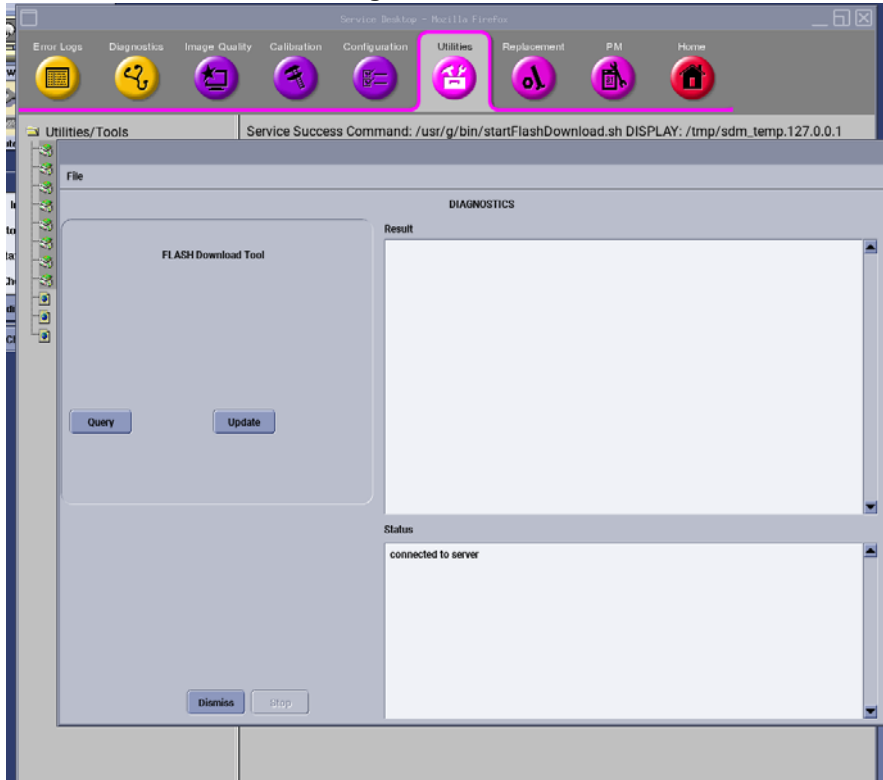
- 1.) Perform the Flash Download Utility found on the Common Service Desktop - Utilities Tab, select [Flash Download].

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



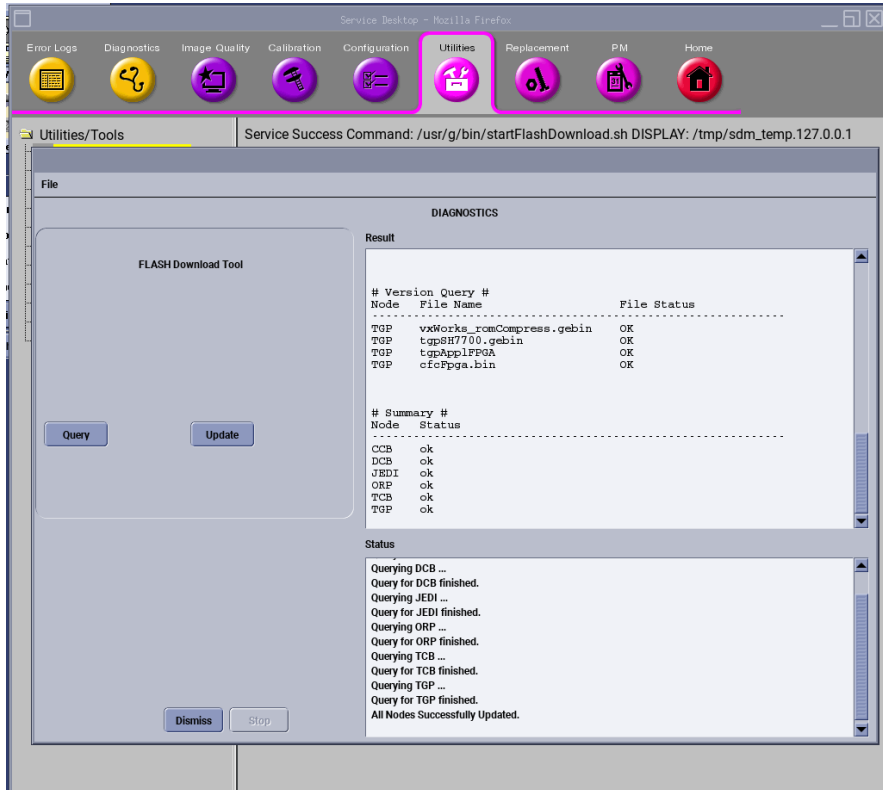
- 2.) When the Flash Download Window opens, Select [Update].

Figure 2-19 Flash Download Windows



- 3.) Once the Gantry Hardware Flash Downloads successfully, select [Dismiss].

Figure 2-20 Flash Download Successfully



- 4.) Close the Common Service Desktop.

Section 11.0 Convert Protocol

- If the software version checked in [2.1, Software Version Checking](#) is CTT 11BW46.x or before, go ahead the following steps.
- Otherwise, directly skip to [Section 12.0, Finalization](#).

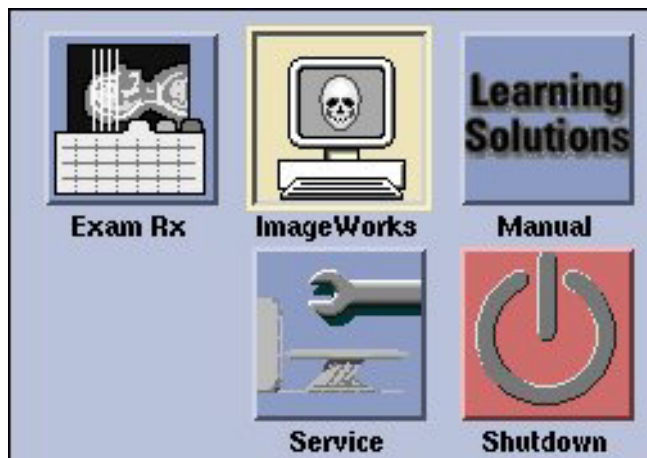
It's necessary for protocol conversion because the protocol of CTT system is not available in SUSE system.

- 1.) Open a Unix Shell, type:
{ctuser@hostname} **su -**
Passwrod: **#bigguy**
- 2.) [root@hostname] # **/usr/g/scripts/conv_proto** <Enter>
- 3.) Input **y** then press [Enter] to convert protocols.
Do you want to convert protocols? [Y/N]
- 4.) Below information should show if the convert protocols successfully:
Success, process finished.

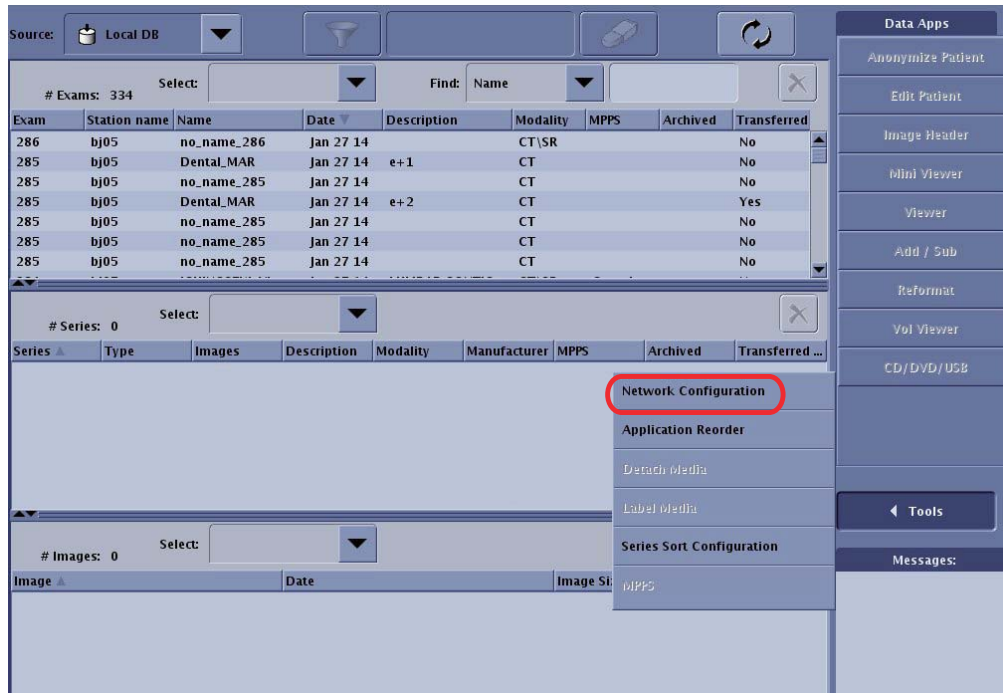
Note: After finishing the user protocol convert, make sure every protocol can be opened by protocol management and save the current system state to another new media.

11.1 Configure System Information on SUSE

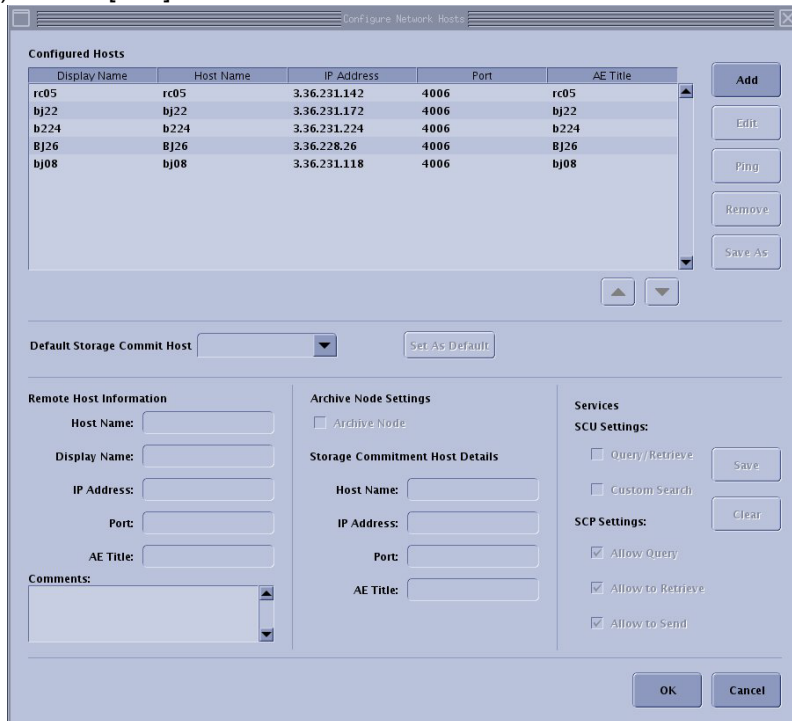
- If the software version checked in [2.1, Software Version Checking](#) is CTT 11BW46.x or before, go ahead the following steps.
 - If the software version checked in [2.1, Software Version Checking](#) is SUSE 12BW31.11 or later, skip this section and go to the next section: [Section 12.0, Finalization](#)
- 1.) Configure PPS server information. Please refer to [4.2, on page 26](#)
 - 2.) Configure all remote network information
 - a.) Select [ImageWorks] from the desktop.



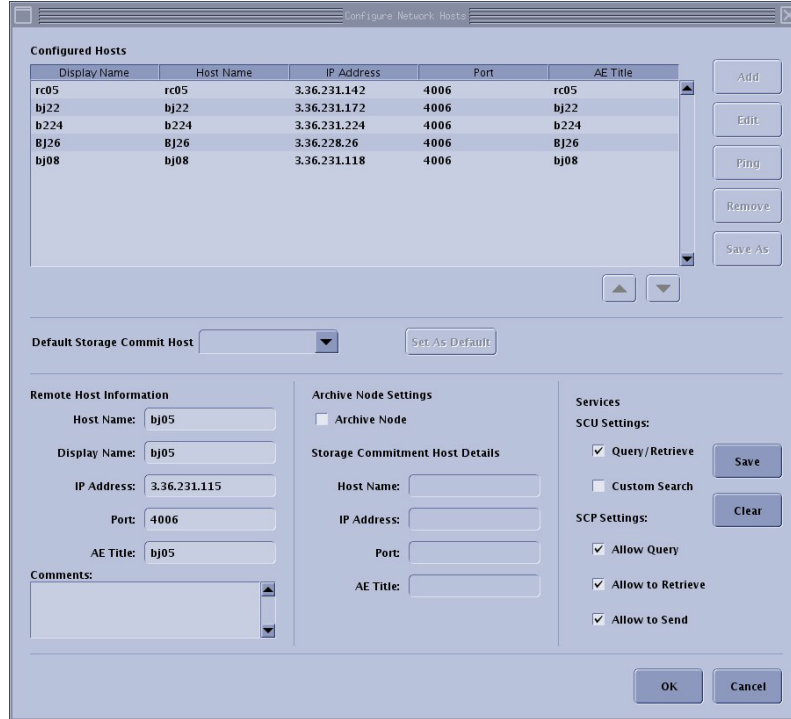
- b.) Select in sequence: Tools-> Network Configuration



c.) Select [Add]

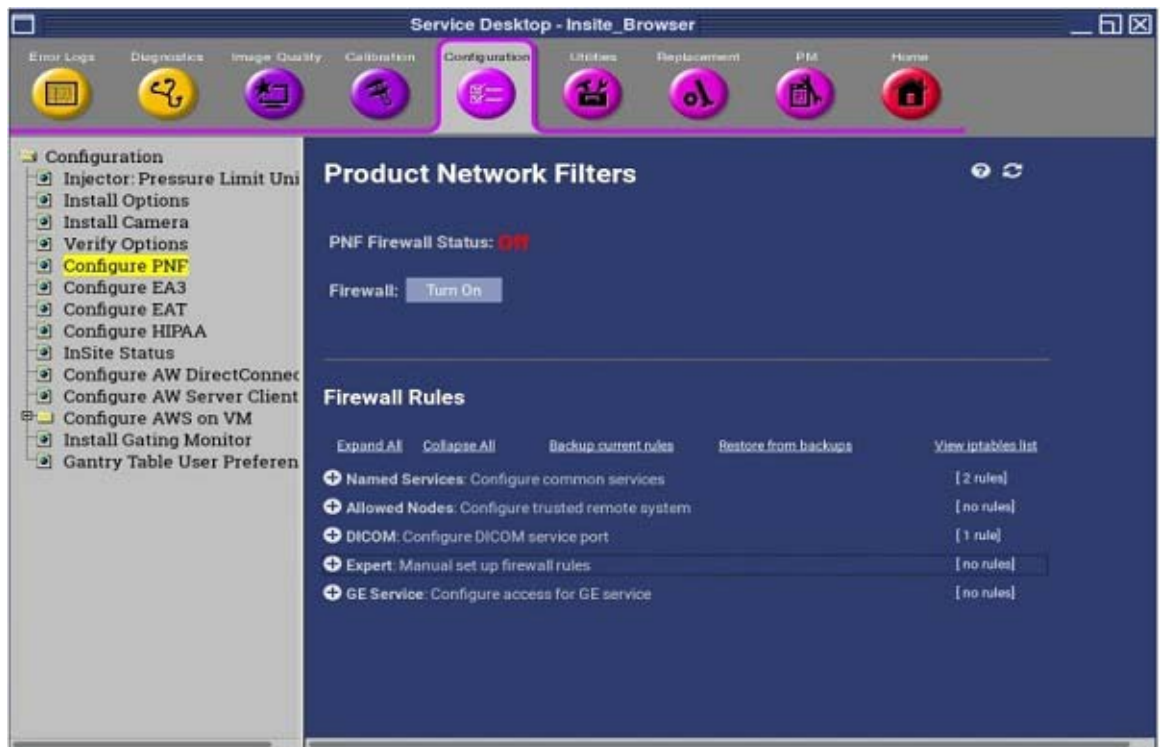


d.) Input the Host Name then press [Enter].



3.) Configure PNF information

- a.) Select the Service Desktop
- b.) Select in sequence: Configuration -> Configure PNF



2 – Upgrade Procedure

4.) Configure AW IP for direct information, Please refer to 4.5, on page 32

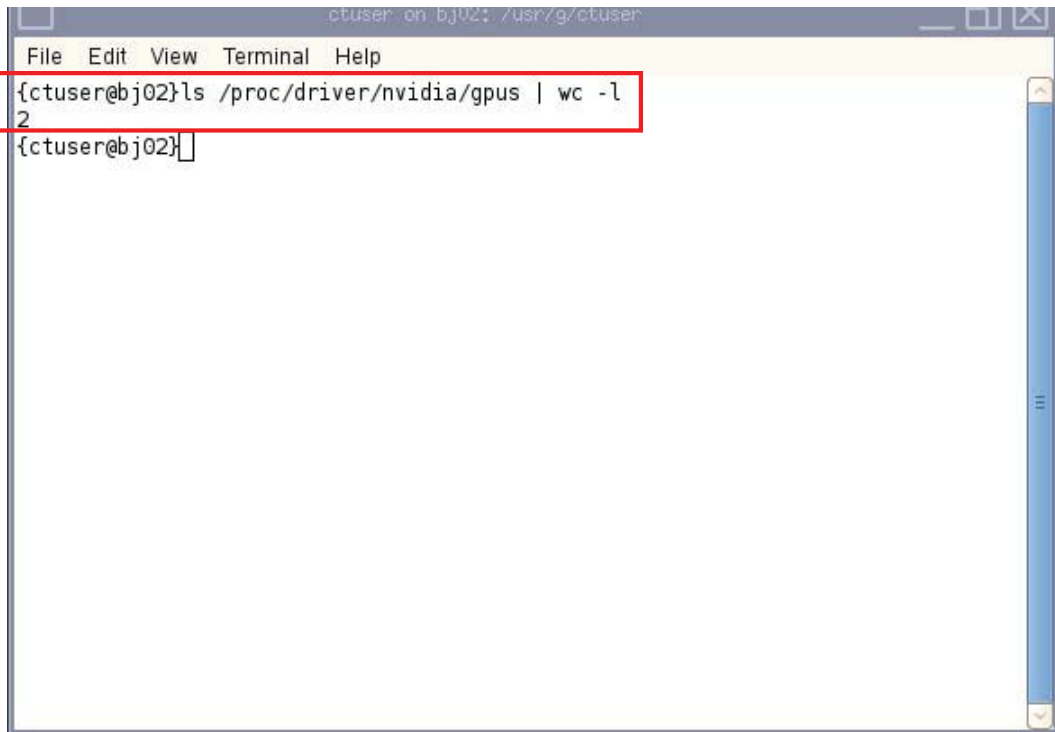
Section 12.0 Finalization

12.1 ASiR Installation (If Purchased)

Note: If customer does not purchase ASiR option, please skip this section

12.1.1 Check GPU Card

Open a shell, then type: `ls /proc/driver/nvidia/gpus | wc -l`.



```
ctuser on bj02: /usr/g/ctuser
File Edit View Terminal Help
{ctuser@bj02}ls /proc/driver/nvidia/gpus | wc -l
2
{ctuser@bj02}
```

- If "2" displays, the Recon GPU card is installed.
- If "1" displays, the Recon GPU card is un-installed.

12.1.2 Check GPU ECC State

Ensure GPU ECC state is **ON**.

- 1.) Open a Unix shell and log on as root.
- 2.) Type: `su -` [ENTER].
- 3.) Type the root password [ENTER].
- 4.) Type: `nvidia-smi` [ENTER].
- 5.) Check GPU ECC status as below:

- If the GPU ECC is **ON**, below is what the output would look like (boxed in green):

```

Terminal
File Edit View Search Terminal Help
[root@ct99 ~]# nvidia-smi
Thu May 7 09:36:03 2020

+-----+
| NVIDIA-SMI 418.56      Driver Version: 418.56      CUDA Version: 10.1      |
+-----+-----+
| GPU  Name           Persistence-M| Bus-Id        Disp.A | Volatile Uncorr. ECC |
| Fan  Temp  Perf    Pwr:Usage/Cap|      Memory-Usage | GPU-Util  Compute M. |
+-----+-----+-----+-----+
|   0   Quadro RTX 5000      Off      | 00000000:15:00:0 Off |          0          |
| 34%   31C   P8         9W / 230W | 17MiB / 15077MiB |    0%          Default |
+-----+-----+-----+-----+
|   1   Quadro P620        Off      | 00000000:2D:00:0 On  |          N/A         |
| 34%   38C   P8         N/A / N/A | 138MiB / 1999MiB |    0%          Default |
+-----+-----+-----+-----+

+-----+
| Processes:                      GPU Memory |
| GPU      PID  Type  Process name                      Usage    |
+-----+-----+-----+-----+
|    0     4966  G    /usr/bin/Xorg_recon                9MiB    |
|    0     11373  G    /usr/g/recon/bin64/image_generation 6MiB    |
|    1     3631  G    /usr/bin/Xorg                      135MiB  |
+-----+

[root@ct99 ~]#
    
```

- If the GPU ECC is **OFF**, below is what the output would look like (boxed in red):

```

Terminal
File Edit View Search Terminal Help
[root@ct99 ~]# nvidia-smi
Thu May 7 09:57:10 2020

+-----+
| NVIDIA-SMI 418.56      Driver Version: 418.56      CUDA Version: 10.1      |
+-----+-----+
| GPU  Name           Persistence-M| Bus-Id        Disp.A | Volatile Uncorr. ECC |
| Fan  Temp  Perf    Pwr:Usage/Cap|      Memory-Usage | GPU-Util  Compute M. |
+-----+-----+-----+-----+
|   0   Quadro RTX 5000      Off      | 00000000:15:00:0 Off |          0          |
| 34%   33C   P8        10W / 230W | 17MiB / 16095MiB |    0%          Off    |
|                               |                   |           Default |
+-----+-----+-----+-----+
|   1   Quadro P620        Off      | 00000000:2D:00:0 On  |          N/A         |
| 34%   46C   P8         N/A / N/A | 138MiB / 1999MiB |    0%          Default |
+-----+-----+-----+-----+

+-----+
| Processes:                      GPU Memory |
| GPU      PID  Type  Process name                      Usage    |
+-----+-----+-----+-----+
|    0     4900  G    /usr/bin/Xorg_recon                9MiB    |
|    0     10046  G    /usr/g/recon/bin64/image_generation 6MiB    |
|    1     3585  G    /usr/bin/Xorg                      135MiB  |
+-----+

[root@ct99 ~]#
    
```

- 6.) How to turn ECC back on:
 - a.) Type: **nvidia-smi -g 0 --ecc-config=1** [ENTER]

b.) A message will show that ECC is enable and a reboot is required:

```
[root@ct99 ~]# nvidia-smi -g 0 --ecc-config=1
Enabled ECC support for GPU 00000000:15:00.0.
All done.
Reboot required.
[root@ct99 ~]# █
```

c.) After reboot, check that the ECC is ON according to previous steps.

12.1.3 ASiR Option Installation

- 1.) Un-install Neuro 3D Filter option if needed. (This option conflicts with ASiR Application.)
- 2.) Install ASiR Application software (shipped with B76712DA) using Option Install menu.
- 3.) Confirm that system started up normally.
- 4.) Install the Recon Enhancement Option software (shipped with B76722DA) using Option Install menu.

12.2 System Checking

Perform *Quality Assurance Test* of Functional Checks on Service Methods, make sure all of them pass.

12.3 Save System State

Refer to [Section 3.0, Save System State](#) to save the new system state after system function is normal.

12.4 Disposing The Old Console

The old console has components that are needed to cover FRU shortages, so please **RETURN** the de-installed console to GPRS Harvest team. Follow the normal local return process to return the console.

- 1.) Package the old console with the shipping material.
- 2.) Mark type of the old console on the outside of the box. (Example: GOC4, LCGOC, AIO, TIO or NIO)
- 3.) Transporter ships the de-installed console to:
 - **For AM**
Return Ship to:
GE Repair Operations Center
Attn: Asset Recovery Leader, Harvest
120 West Opus Drive, Suite J Component Harvest
Oak Creek, WI 53154
 - **For Europe**
Stick the harvest return sticker (see below) on the OC box
Geodis Logistics – Harvest
Bat EVL2 Quai 48 – ZI la pièce de la remise
Route de Corbeil – CD26 – 91090 Lisses – France

<h1>HARVEST Upgrade</h1>	
Upgrade Name	<input type="text"/>
Country	<input type="text"/>
System ID	<input type="text"/>
Order/SO	<input type="text"/>
FSE SSO	<input type="text"/>
Ship to Address	
Geodis Logistics/Harvest	
Bat EVL2 - Porte A1 Quai 9 à 13 - ZI de la remise	
Route de Corbeil CD26 - 91090 Lisses - FRANCE	
Contact : JP Lechat +33 6 72 18 60 32	

- **For ASIA**
 - **Site in Japan**

Kyosai Technos Co.Ltd.
4-25-2 Atago Tama-City, Tokyo,
206-0041 Japan
 - **Site in China**

China Repair Center (CRC)
1 Yongchang North Road Beijing Economic & Technology Development Area,
Beijing P.R.China 100176
 - **Site in India**

Attn: Harvest Centre
C/O DHL Supply Chain India Pvt Ltd,
New Survey Number 131,
Doddahullur Village,
Kasaba Hobli Hoskote Taluk,
Bangalore - 562114
- **For LATAM**
 - **Brazil:**

Av. Dr. Marcos Pentead de Ulhoa Rodrigues, 690-Galpão 8A
Pq.Jubran Cep-06460-040
Barueri-SP
Phone: +55 (11) 3206-733
 - **Argentina:**

OCASA Soluciones Logísticas
Echeverría 1262/64
C1428DQN – C. A. de Buenos Aires
(54 11) 4785-8585

12.5 Sending The Product Locator Card

- 1.) Fill in the blanks on the Product Locator Card provided in this kit.
- 2.) Send the Product Locator Card to the appropriate address provided below.

Address for GEMS-AM sites:

Send to the address printed on the Product Locator Card.

Address for GEMS-E sites:

Send to the address printed on the Product Locator Card.

Address for GEMS-A sites:

Send to the local PLS or Service Administrator.

www.gehealthcare.com

