

Console Upgrade Instruction

Service Documentation



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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
2	11/01/18	Chapter 1, Section 3.2 and 3.3: updated B75522DA and B75552DA BOM per PCM update Updated old console disposal address
1	10/22/18	Initial release

Revision History

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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 the layout of two pages from a manual. The left page is labeled 'Publication Part Number & Revision Number' and the right page is labeled 'Publication Title'. Both pages have a header with 'GE Mission 5 remote (Remotes 5810279-1EN, REVISION 2)' and 'Chroma, 5" Video Console Menu'. The left page contains sections for 'Intercom Circuit Board' and 'Rear Microphone', with a 'DANGER' symbol and 'USE TAG AND LOCK OUT PROCEDURE.' callout. The right page contains sections for 'Rear Intercom X Board' and 'Rear Intercom X Board Test Points', with a diagram of the board and a 'CAUTION' symbol. The footer of the left page shows 'Section 2.0 - Intercom' and the footer of the right page shows 'Chapter 11 - Safety'.

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

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

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

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

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

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

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

2.3 Computer Screen Output/Input 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: Fixed Output 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.

Example: Variable Output *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>*

Example: Fixed Input **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.**

Example: Variable Input *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.*

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

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

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

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

Chapter 1

Introduction

Section 1.0 System Requirement

OpenOC16 with HP Z840 Upgrade Kits are available for the following system configuration:

- Discovery CT590RT/Optima CT580 with TIO Console XW8600 Host Computer
- Discovery CT590RT/Optima CT580 and Discovery RT with NIO Console Z800 Host Computer
- Discovery RT with NIO Console Z840 Host Computer

Section 2.0 Overview

There are three upgrade kits included this instruction. The upgrade instruction is to guide FE how to upgrade console to open console with Z840 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 Open OC Z840 Upgrade Kit for TIO Console with XW8600

This upgrade kit apply for Discovery CT590RT/Optima CT580 with TIO Console XW8600 Host Computer.

Discovery CT590RT/Optima CT580 with SW version 11BW46.3+ SP1.x or SP2.x upgrade to OpenOC Z840 with SW version 17BW49.x

Detailed upgrade procedure refer to [Chapter 2, TIO Console Upgrade to OpenOC](#)

Console Upgrade Kit (B75282DA)

Console Upgrade Kit	GEHW BCAT
	B75282DA
RT Open OC GEHW	B75202DA
TP & SW Std Option Open OC	B75212DA
Open OC upgrade collector	B75592DA
DVD-RW Drive Tower	B75362CB
GSCB	B79942CB

3.2 Open OC Z840 Upgrade Kit for NIO Console with Z800

This upgrade kit apply for Discovery CT590RT/Optima CT580 and Discovery RT with NIO Console Z800 Host Computer

- Discovery CT590RT/Optima CT580 with SW version 11BW46.x and 13BW16.x and upgrade to OpenOC Z840 with SW version 17BW49.x
- Discovery RT with SW version 15BW19.x upgrade to OpenOC Z840 with SW version 17BW49.x

Detailed upgrade procedure refer to [Chapter 3, NIO Console with Z800 Upgrade to OpenOC](#)

Console Upgrade Kit (B75522DA)

Console Upgrade Kit	GEHW BCAT
	B75522DA
RT Open OC GEHW	B75202DA
TP & SW Std Option Open OC	B75212DA
DVD-RW Drive Tower	B75362CB
GSCB	B79942CB
Open OC upgrade instruction	B75532DA

3.3 Open OC Z840 Upgrade Kit for NIO Console with Z840

This upgrade kit apply for Discovery RT with NIO Console Z840 Host Computer

Discovery RT with Z840 with SW version 16BW32.x upgrade to OpenOC Z840 with SW version 17BW49.x

Detailed upgrade procedure refer to [Chapter 4, NIO Console with Z840 Upgrade](#)

Console Upgrade Kit (B75552DA)

Console Upgrade Kit	GEHW BCAT
	B75552DA
TP & SW Std Option Open OC	B75212DA
Open OC upgrade collector	B75562DA
DVD-RW Drive Tower	B75362CB

3.4 Multi Upgrade for site

If the site configuration doesn't included in the above table due to previous upgrade, please check the console type to decide if a console replacement is necessary.

Detailed upgrade procedure refer to [Appendix A, Multi Upgrade for Site](#)

Section 4.0 Flowchart

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

Figure 1-1 Process Flowchart for TIO Console XW8600 upgrade to OpenOC Z840

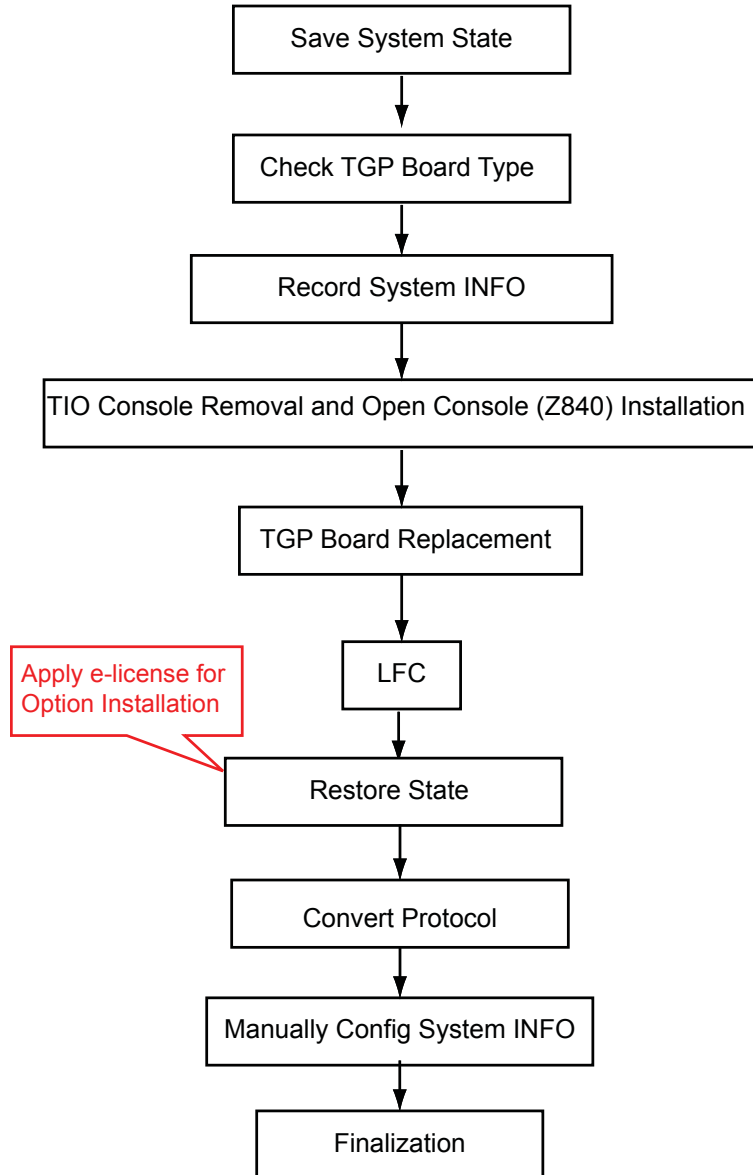


Figure 1-2 Process Flowchart for NIO Console Z800 upgrade to OpenOC Z840

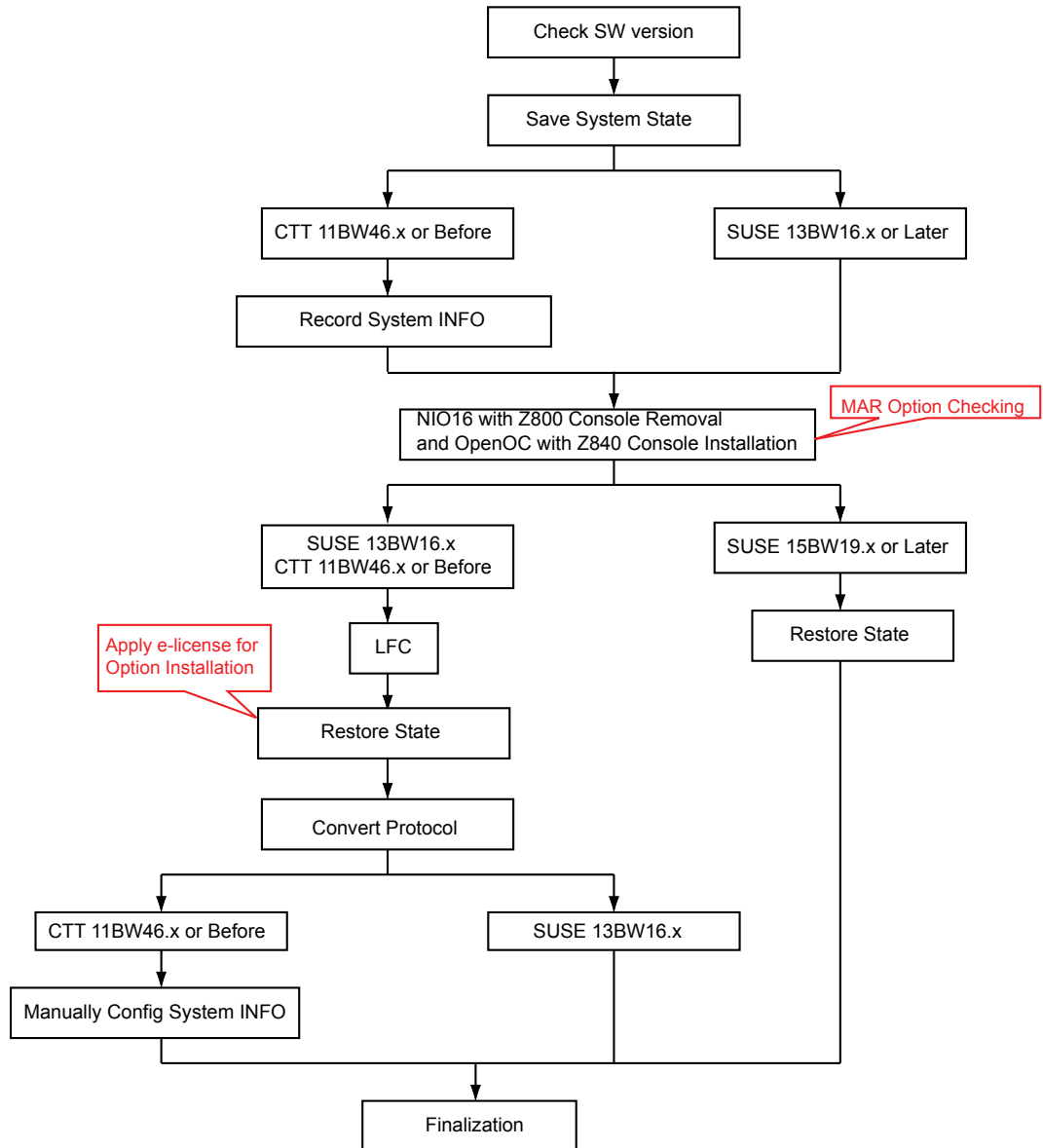
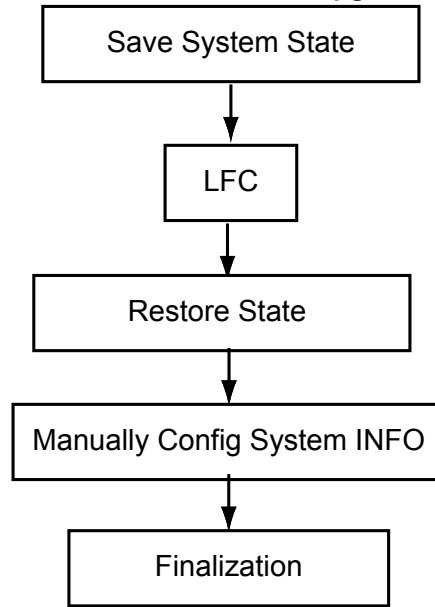


Figure 1-3 Process Flowchart for NIO Console Z840 upgrade to OpenOC Z840



Section 5.0 Upgrade Preparative

5.1 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.) Enter the cursor in the monitor screen, then click on the right button of the mouse to select [UnixShellLeft] or [UnixShellRight] in Utilities window.
- 2.) A unix shell window pops up and type the following command to check software and hardware config information:

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

- 3.) Record Product Name and Software Version.

Table 1-1 listed the upgrade product name with their related software version.

System	Software Version	Console Type	OS Software	Order Kit
Discovery CT590RT/ Optima CT580	11BW46.3	TIO Console with XW8600	CTT Platform	B75282DA
Discovery CT590RT/ Optima CT580	11BW46.3	NIO Console with Z800	CTT Platform	B75522DA
Discovery CT590RT/ Optima CT580	13BW16.x	NIO Console with Z800	SUSE Platform	
Discovery RT	15BW19.x	NIO Console with Z800	SUSE Platform	
Discovery RT	16BW32.x	NIO Console with Z840	SUSE Platform	B75552DA

Table 1-1 Software Version Information

Chapter 2

TIO Console Upgrade to OpenOC

Section 1.0 Preparative

Refer to the latest service methods (5366639-8EN) to understand detailed hardware and software installation procedure

Section 2.0 Save System State

Before proceeding with Save System State:

- Make sure to have formatted DVD-RAM disk. Make sure the DVD-RAM disk is not write-protected.

Or

- Have a FAT32 Formatted USB media (either Memory Stick or USB External Drive, minimum of 2 GB).

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 System State DVD-RAM media into the peripheral tower drive or USB media in any of the console's USB ports.
- 2.) Select [Service Desktop]-> [Utilities].
- 3.) Select [System State] for DVD-RAM media or [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 DVD-RAM or USB is ready, select [Yes].
- 7.) When completed select [Dismiss].
- 8.) Remove System State DVD-RAM media from the DVD Peripheral Tower or USB media from USB port. Label System State Backup Media appropriately and place in a safe location.

Section 3.0 Record System Information

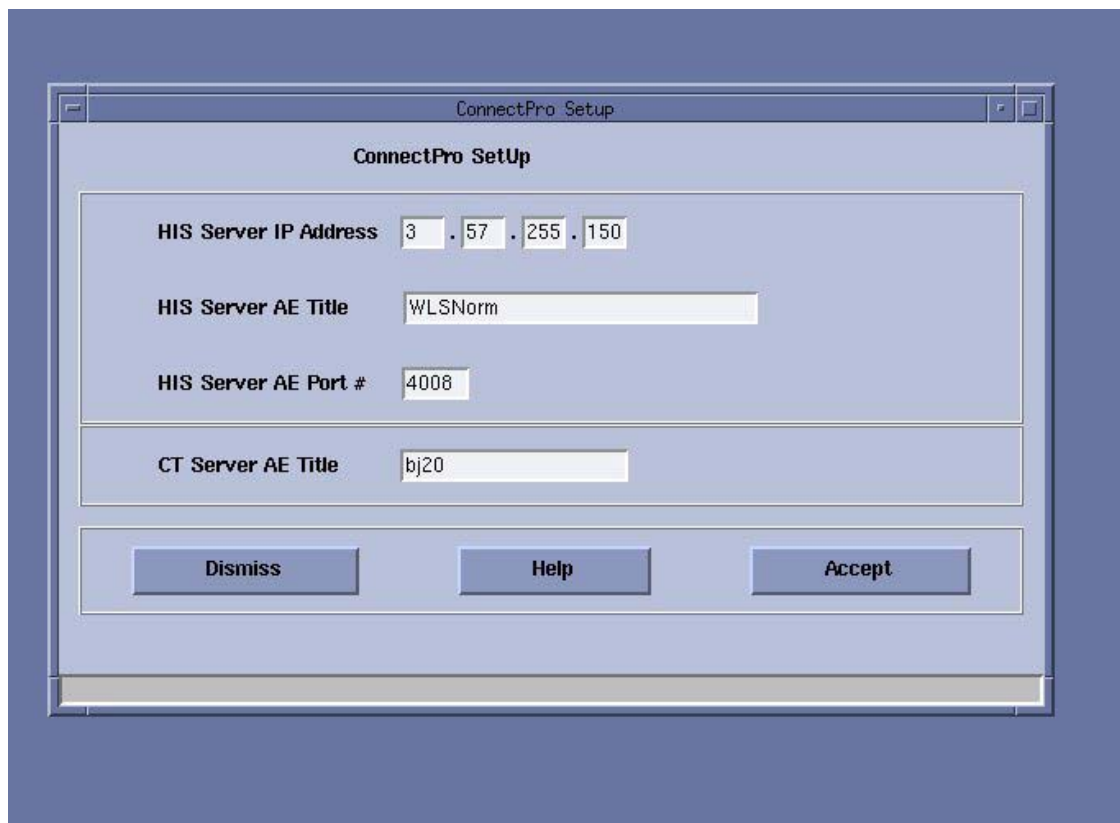
3.1 Check TGP Board Type

- 1.) Open a Unix Shell.
- 2.) Type: *rlogin tgp*, [Enter].
- 3.) Type: *boardShow*, [Enter].
- 4.) TGP board type will be displayed, **TGPU** or **TGPHD** (example *TGPHD* as below shown).

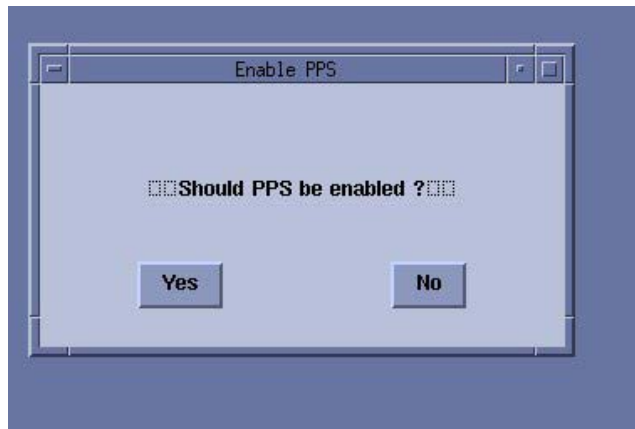
```
{ctuser@ct29}rlogin tgp  
  
-> boardShow  
Board: TGPHD  
value = 6 = 0x6  
-> █
```

3.2 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].

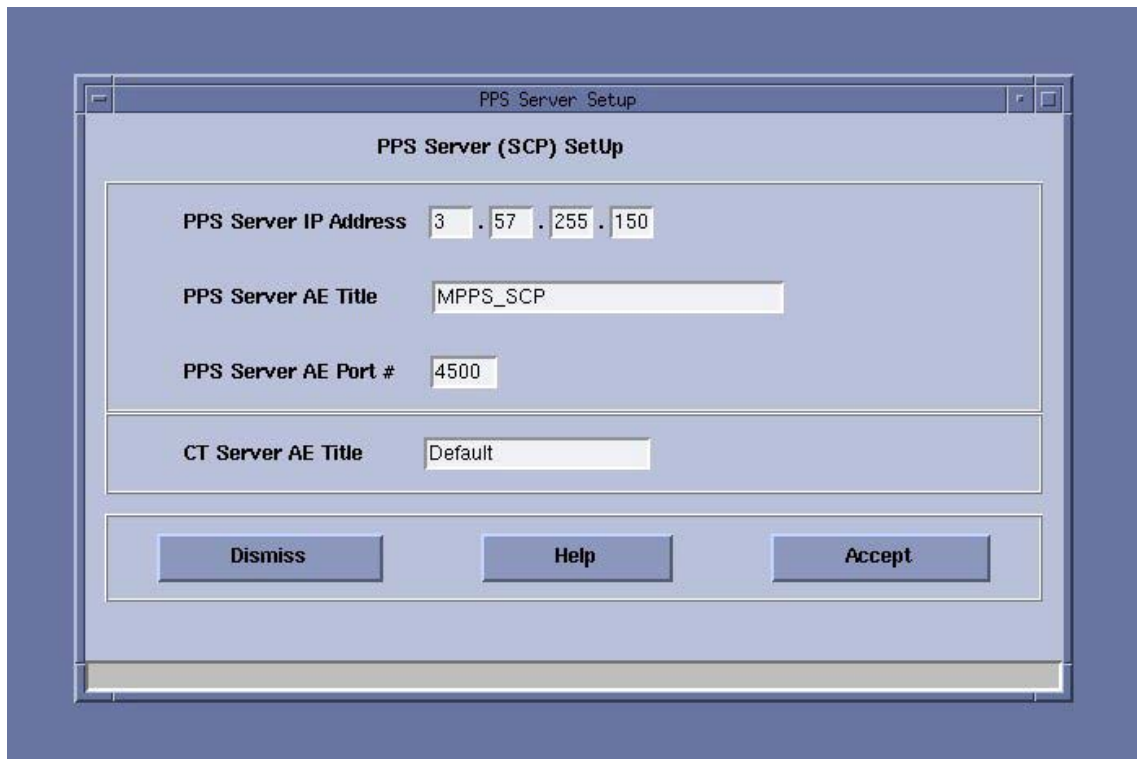


3.) "Should PPS be enabled?" is popped up. Select [Yes].



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].

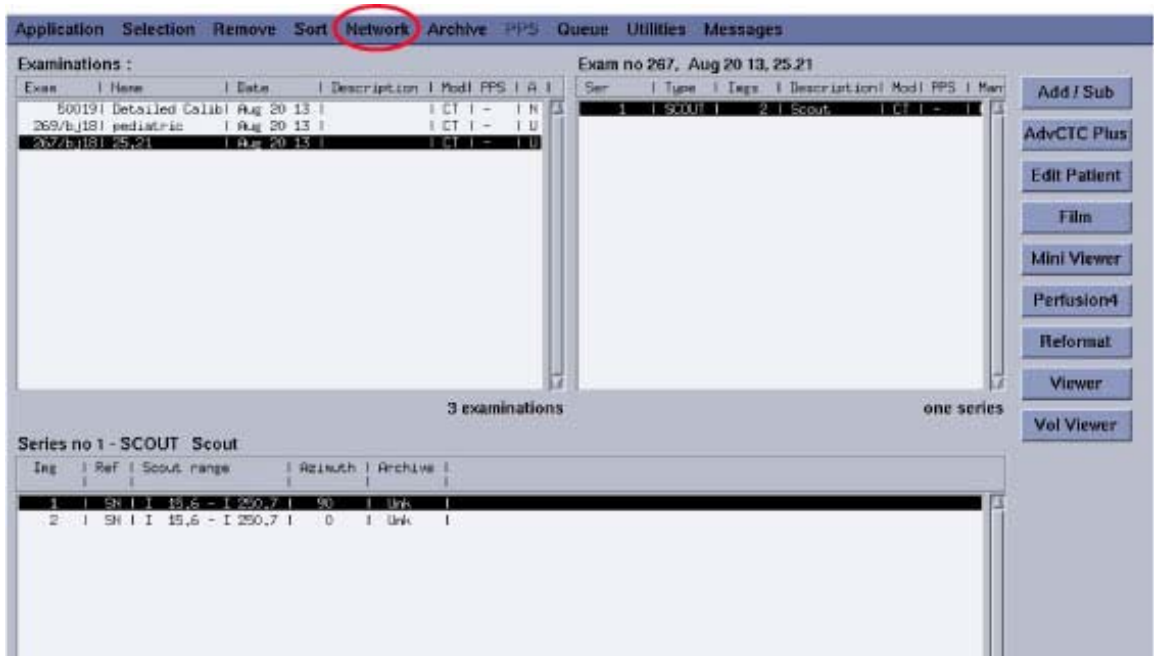


3.3 Record All Remote Host Network Information

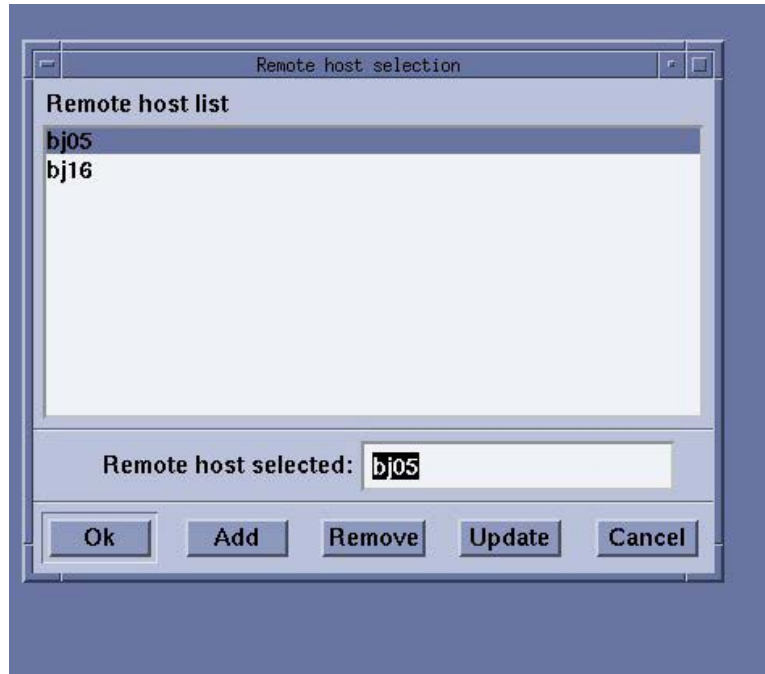
- 1.) Select [ImageWorks] from the desktop.



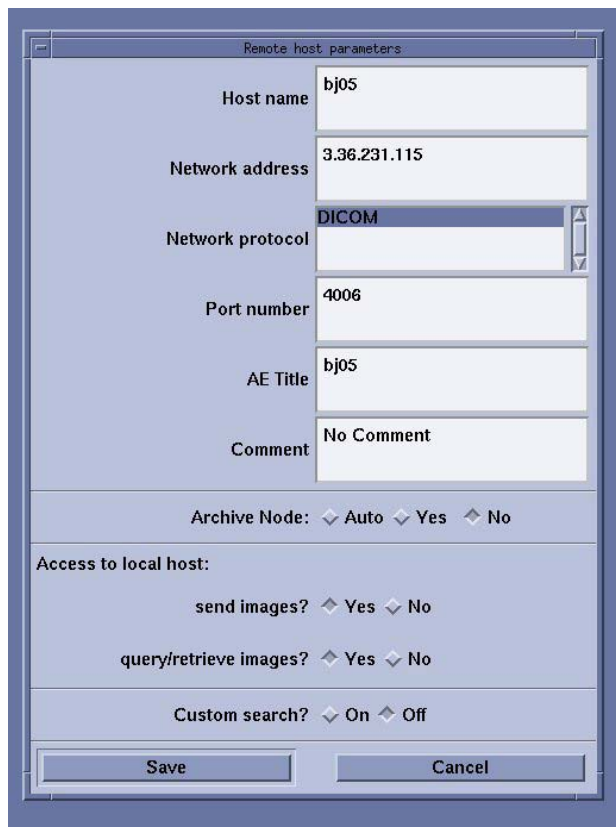
- 2.) Select [Network]



- 3.) Click [Select remote host] on the Network list menu
- 4.) Select Remote host from the Remote host list, then click [update].

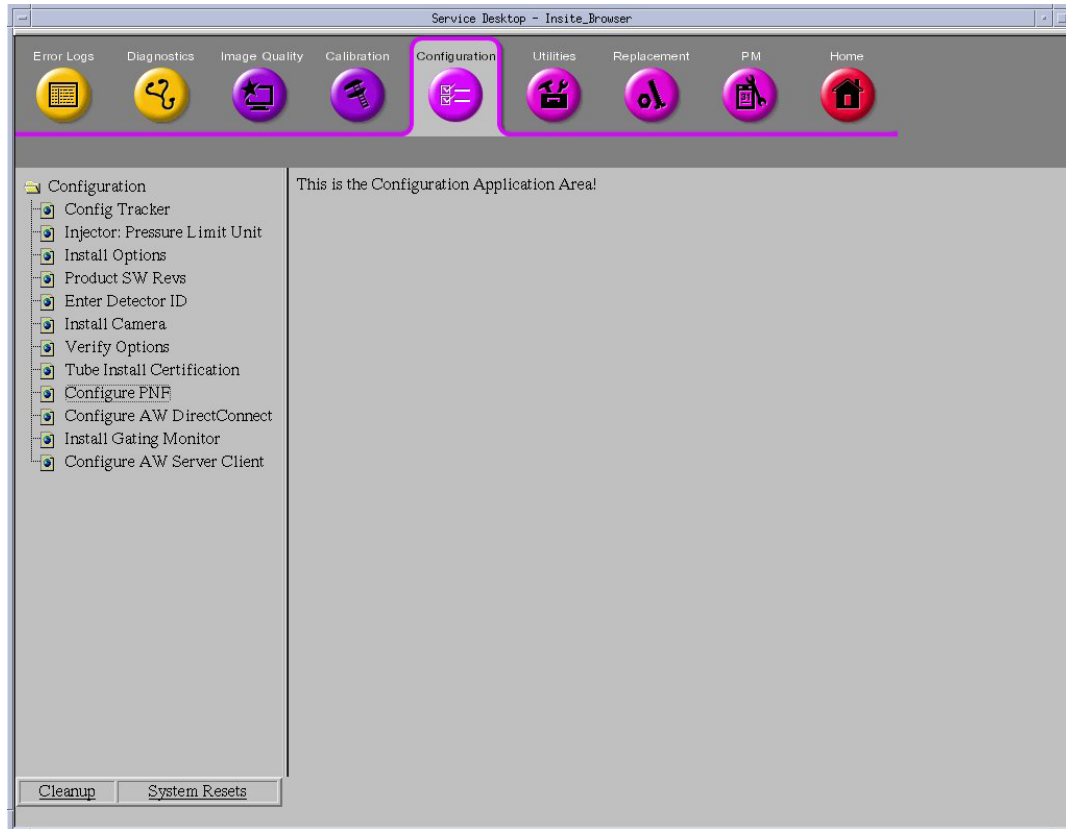


5.) Record the Network information as below.

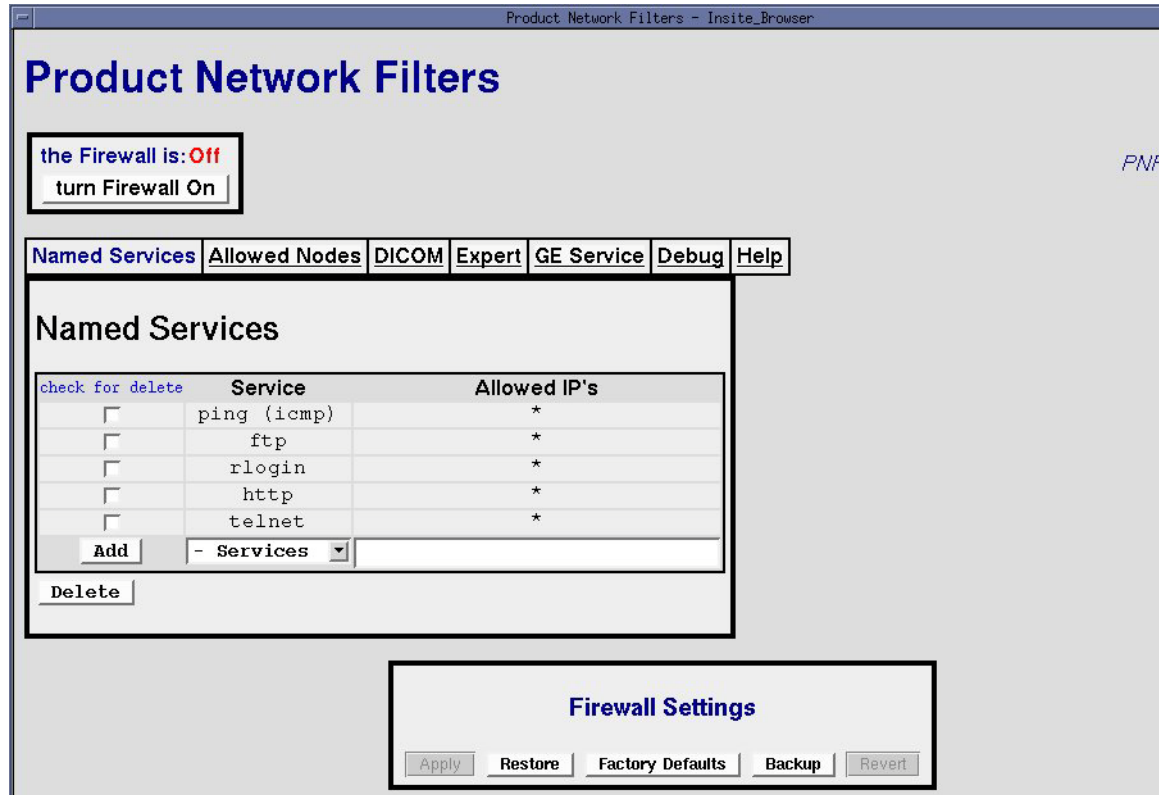


3.4 Record Product Network Filters (PNF) Information

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

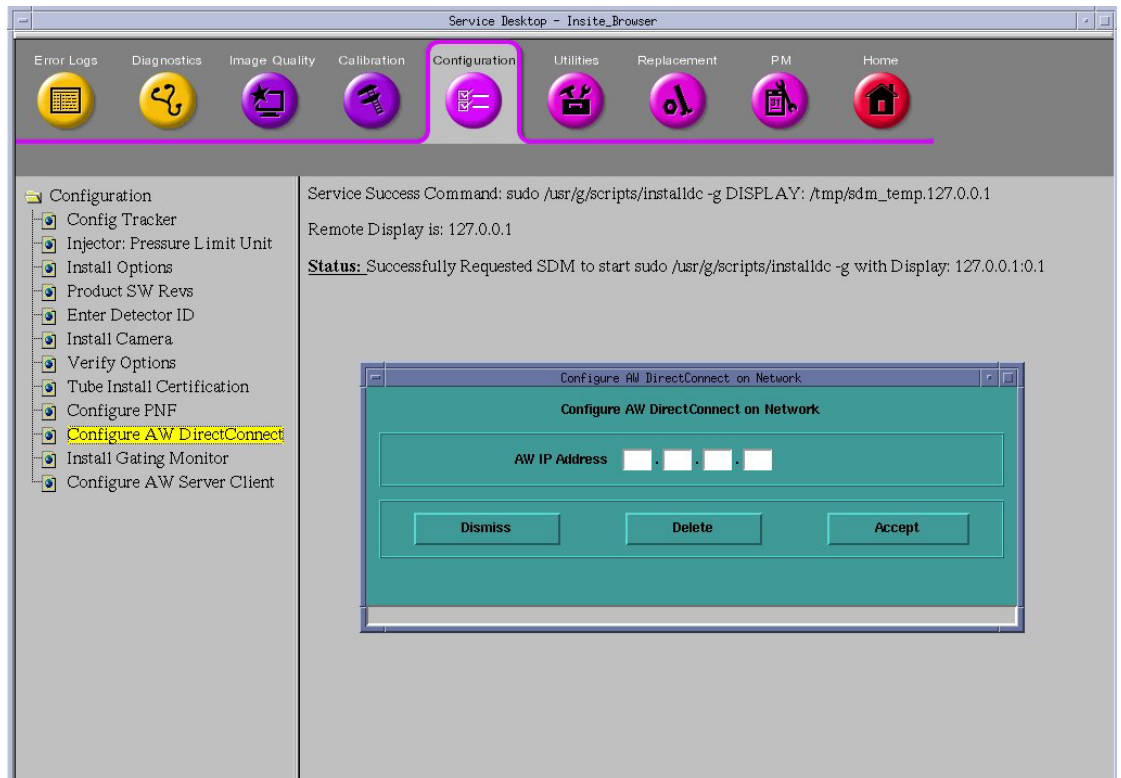


- 3.) Record PNF information.

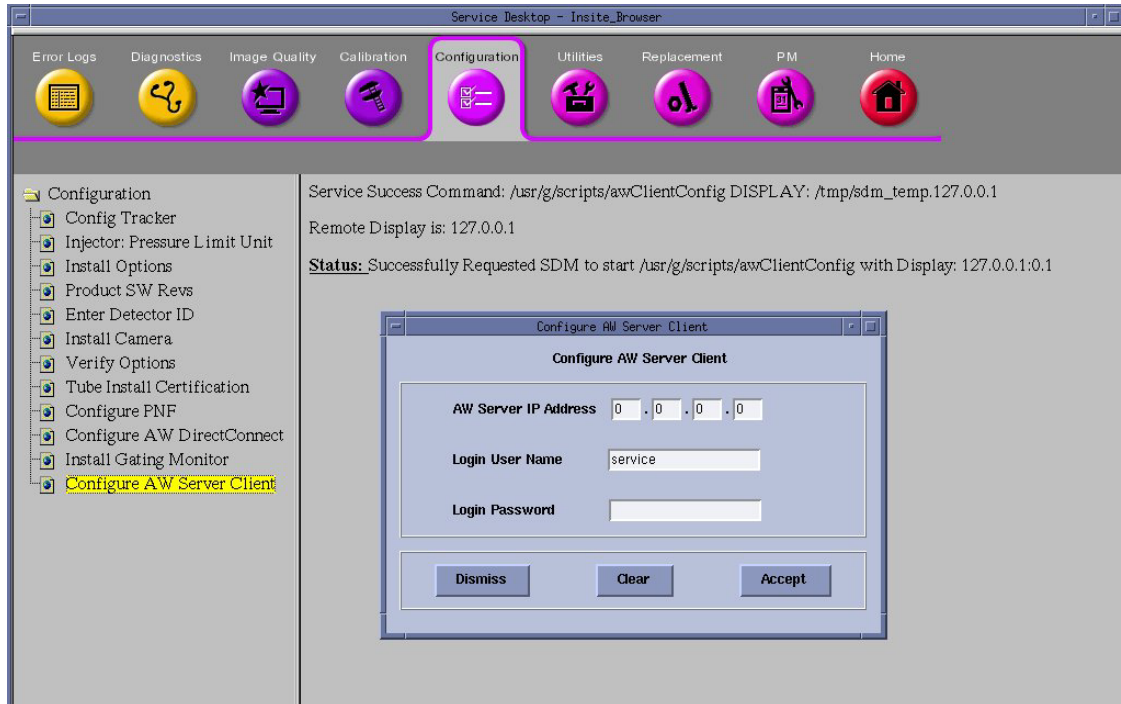


3.5 Record AW IP for Direct Information

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

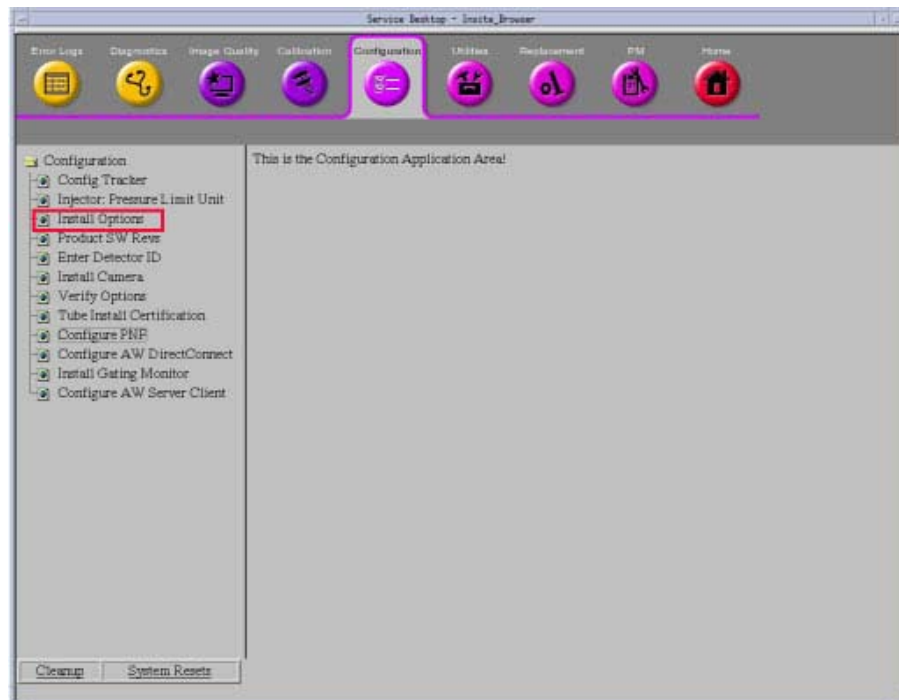


- 3.) Select in sequence: Configuration → Configure AW Server Client and record AW server INFO



3.6 Record Option Information Licenses

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



- 3.) View Option List and check whether include below 6 options, these six options need apply the new e-licence when system platform upgrade from CTT to SUSE.
- AutoBone Xpress on OC
 - Advanced Vessel Analysis Xpress on OC
 - Perf 4 Neuro on Xstream OC
 - Perf 4 Multi Organ on Xstream OC
 - Advantage CTC Pro for OC
 - SmartView Multi-Slice

B-CAT	Option Name (Installed in Site)	Flex String (CTT System)	Flex String (SUSE System)
B7870JD	AutoBone Xpress on OC	AutoBone	AutoBone_Xpress
B7870JC	Advanced Vessel Analysis Xpress on OC	AdvVesselAnalysis	AVA_Xpress
B7870HN	Perf 4 Neuro on Xstream OC	CTPerfusion4Neuro	CT_Perfusion_4D_Neuro
B7870HM	Perf 4 Multi Organ on Xstream OC	CTPerfusion4	CT_Perfusion_4D_MultiOrgan
B7864KL	Advantage CTC Pro for OC	CTColonoPro	CT_Colono_Pro3D_EC
B7868FM (Smartview 2D)	SmartView Multi-Slice	RealTimeCTFluoro	Enhanced_Real_Time_CT_Fluoro

Table 2-1 Compare Flex String Between CTT and SUSE System

Section 4.0 TIO Console Removal and OpenOC Installation

4.1 Old TIO Console 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 Console aside.

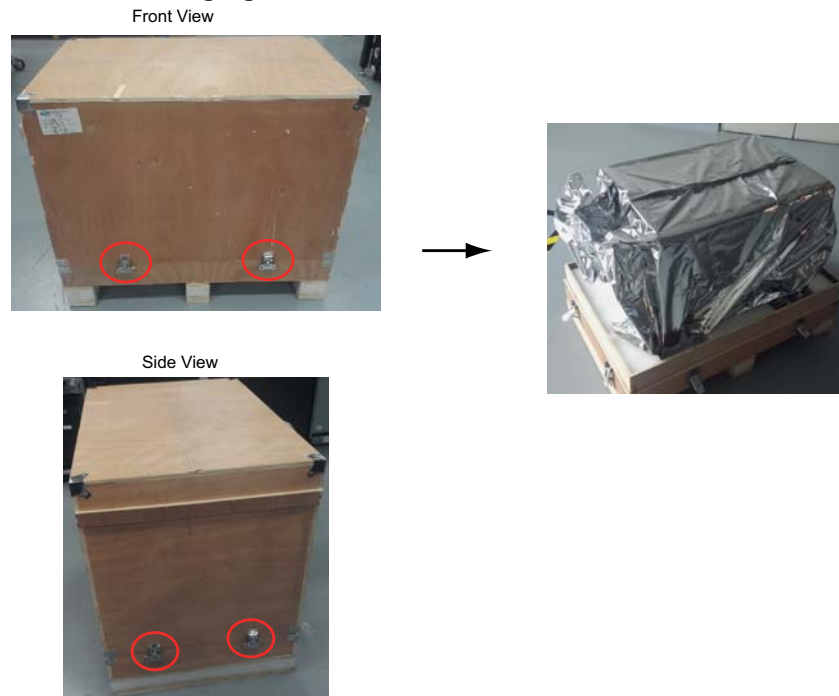
4.2 OpenOC16 with Z840 Host Computer Installation

4.2.1 Unpack OpenOC16 with Z840 PC

Please read detail about OpenOC16 installation procedure in Service Manuals

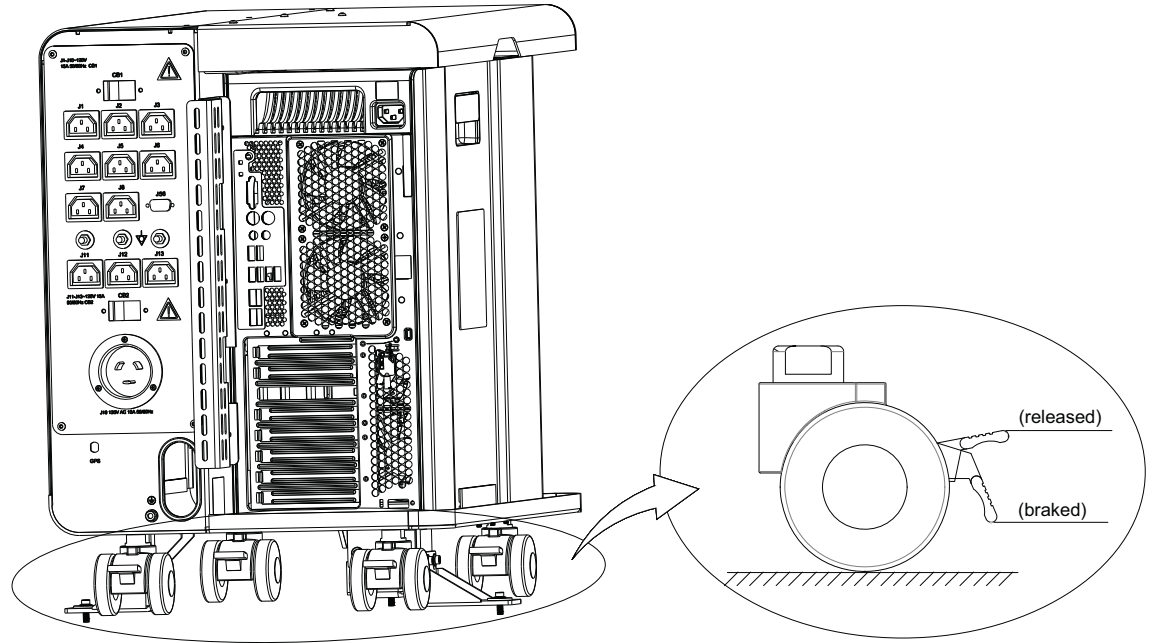
- 1.) Unpack console packaging.
 - a.) Released eight latches and remove the packaging covers.

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



4.2.2 GPU Card Installation

Please refer to **GPU Fluoro Prerequisite Installation Manual (5344368-1EN_r5 or later)** to install GPU Card (8770000-126, shipped with B79442CB) in Z840 Host Computer.

4.2.3 Memory Installation

Note: If the customer has purchased MAR Option and installed in old system, please order MAR Option Kit (B79602CB) for new system.

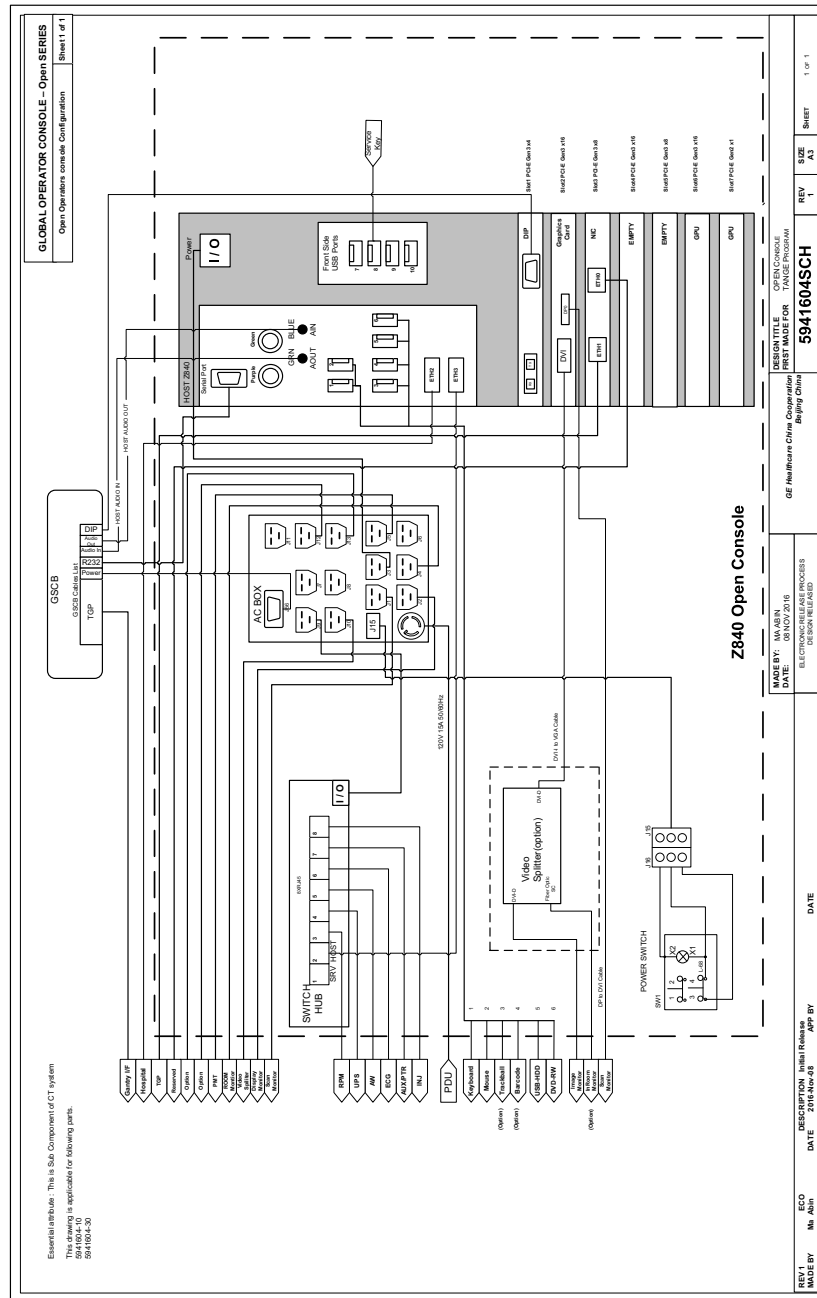
Please refer to MAR Option Installation Manual (5767680-1EN) to install Memory (8770000-100, shipped with B79602CB) in Z840 Host Computer.

4.2.4 Console Cable Connections

NO.	Description	Long Cable	Short Cable
53	LVAC Power Cable - PDU to Operator Console	2343531	2343531-2
56	Ground, Raceway to Operator Console	2371450-3	2371450-4
101	Signal Cable - Gantry to Operator Console	2333150	2333150-2
102	Signal Cable (Ethernet) - Gantry to Operator Console	2352714-2	2352714-3
103	Data Cable (Fiber Optic) - Gantry to Console	2117848-2	2117848-7

Table 2-2 System Cables for OC Connections

Figure 2-4 OpenOC16 Console Interconnect (with Z840)



This document was created using Visio. It is a Vector document on the CT Product Engineering (CTE) database.
 Version: Revision 1, 02/01/11

2 - Upgrade Procedure

Figure 2-5 Z840 Host Computer Port Label

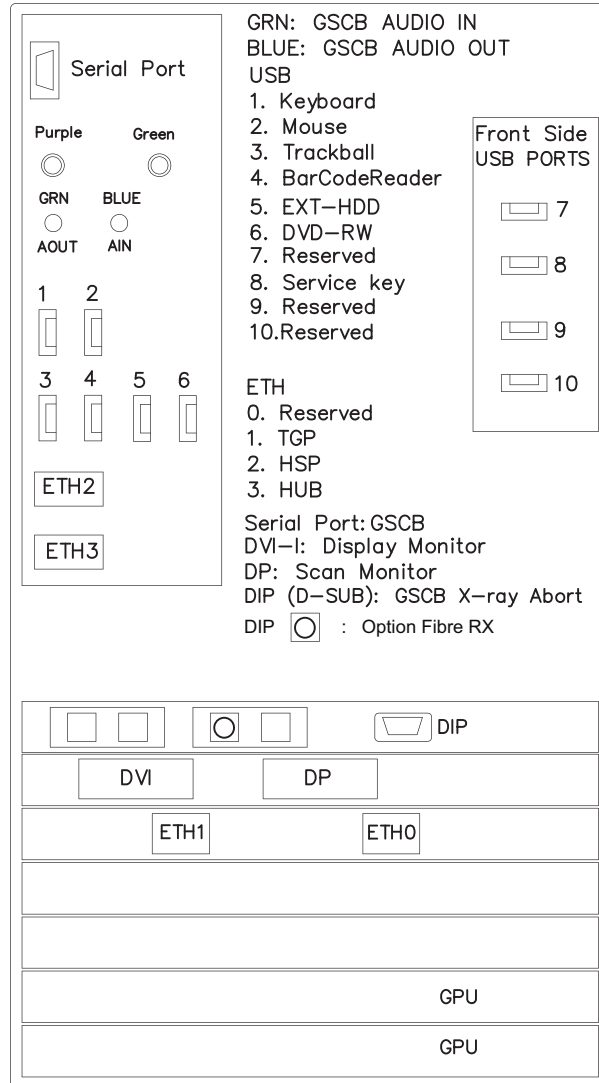


Figure 2-6 OpenOC16 AC Box Assignments



Number	Description
J1	Scan Monitor Power Connection
J2	Display Monitor Power Connection
J4	In-Room Monitor Connection
J5	Peripheral Media Tower Power Connection
J12	RPM Power Connection
J13	Injector Power Connection
J56	GSCB Power Connection

Table 2-3 AC Box Outlet Assignments

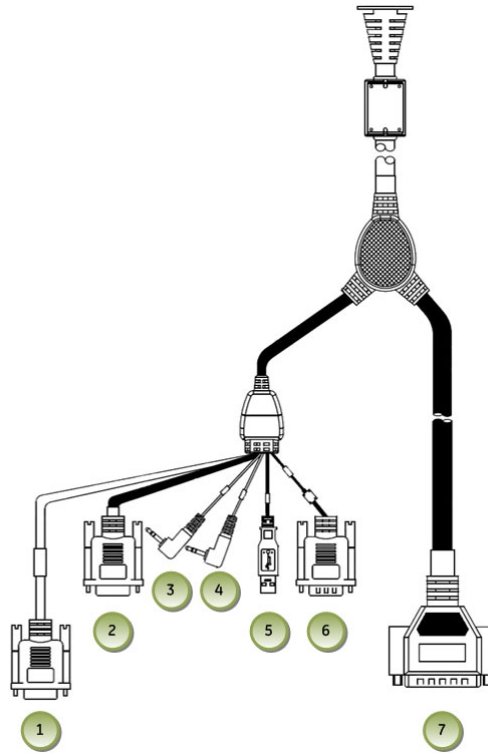
- 1.) Connect the Keyboard and Mouse cables to OpenOC16 Z840 Host Computer.

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

Table 2-4 Cable Extension

- 2.) Remove the old SCIM from the site, and take out the GSCB from the upgrade kit. Connect GSCB cable to OpenOC AC Box and Z840 Host Computer according to [Figure 2-7](#) and [Table 2-5](#)

Figure 2-7 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 2-5 GSCB Cables

- Remove the old Media Tower from the site and install the new Media Tower (5270510-22) shipped with Upgrade Kit. Connect Media Tower cables to Open Console AC Box and Z840 Host Computer.

DESCRIPTION	PART NUMBER	CABLE LENGTH	QTY
USB Cable (PMT)	5315370	2000 mm	2
PMT power cable	5432953-6	3050 mm	1

Table 2-6 Media Tower Cables

Figure 2-8 Media Tower Connections



- 1) Power for Media Tower
- 2) Power for MOD Drive
- 3) DVD-RW Drive
- 4) External USB
- 5) HDD External
SSA Key

4.) Connect LCD Monitor cable connectors to OpenOC16 AC Box and Z840 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
Scan Monitor Video Cable	5408703-2	3000 mm	1
Image Monitor Video Cable	5366259	3000 mm	1

Table 2-7 Monitor Cables for Z840

Scan Monitor

- Video cable: Z840 PC DP to Monitor DVI
- Power cable: AC Box J1 to Monitor power

Figure 2-9 Video Cable and Power Cable



Image Monitor

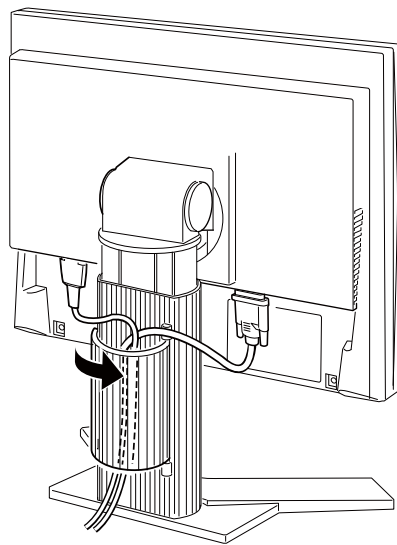
- Video cable: Z840 PC DVI to Monitor VGA
- Power cable: AC Box J2 to Monitor power

Figure 2-10 Video Cable and Power cable



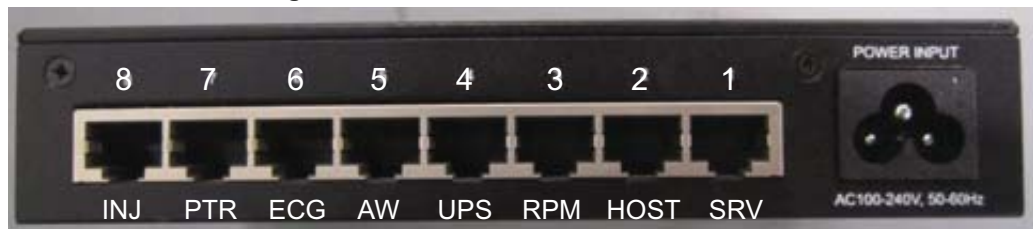
Route LCDs video cable and power cable.

Figure 2-11 Cable Routing and Keeper



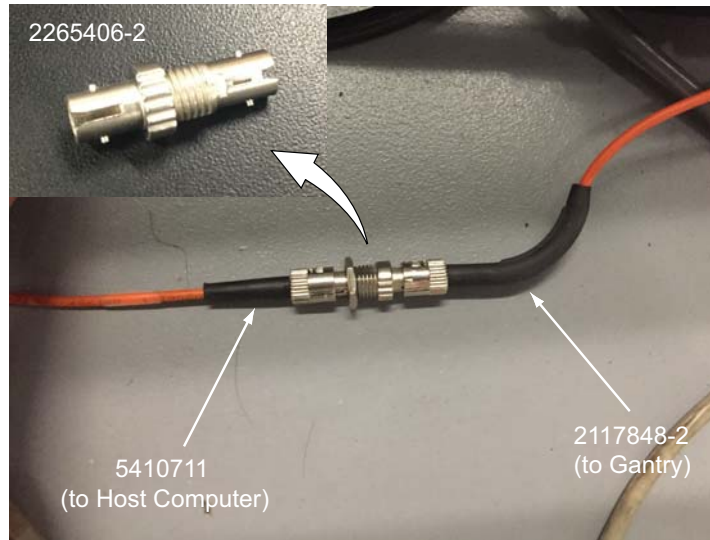
- 5.) Remove OpenOC16 right side cover and plug cables into Switch Hub on console if request.
- 6.) Connect other cables to Z840 Host Computer according to [Figure 2-5](#), then install right side cover of console.

Figure 2-12 Switch Hub Connections

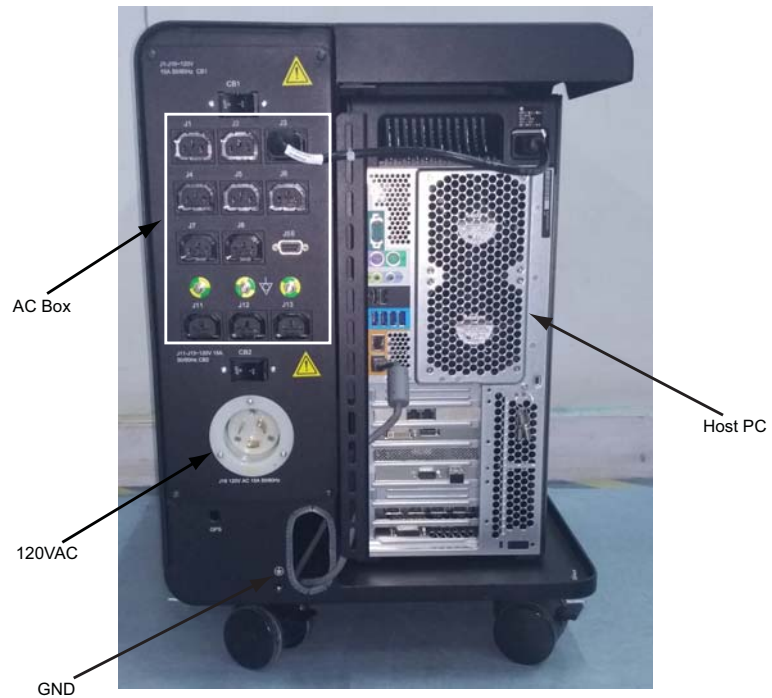


- 7.) Connect the Fiber Optical Cable (5410711) to the Z840 Host Computer, then connect it with the System Fiber Optical Cable.

Figure 2-13 Fiber Optical Cable Connection



- 8.) Connect the Power Cable and Ground Cable to the OpenOC16 Panel. See [Figure 2-14](#)
- Figure 2-14 OpenOC16 Rear View with AC BOX**



4.2.5 Console Cover Installation

Please refer to **Service Methods (5366638-2EN_r20 or later) -> Replacement ->OpenOC16 -> Console Cover Removal and Installation** to Install console covers.

Section 5.0 TGP Board Replacement

- If TGP type is **TGPU** checked in 3.1, [Check TGP Board Type](#), follow **Service Methods (5366638-2EN_r20 or later) -> Replacement -> Gantry-> ORP and TGPU/TGPG** to replace TGP board from TGPU to TGPLD. TGPLD board is included in upgrade kit (B70112DA), do not order replacement board.
- If TGP type is **TGPLD** checked in 3.1, [Check TGP Board Type](#), skip to [Section 6.0, Load From Cold Procedure](#)

Section 6.0 Load From Cold Procedure

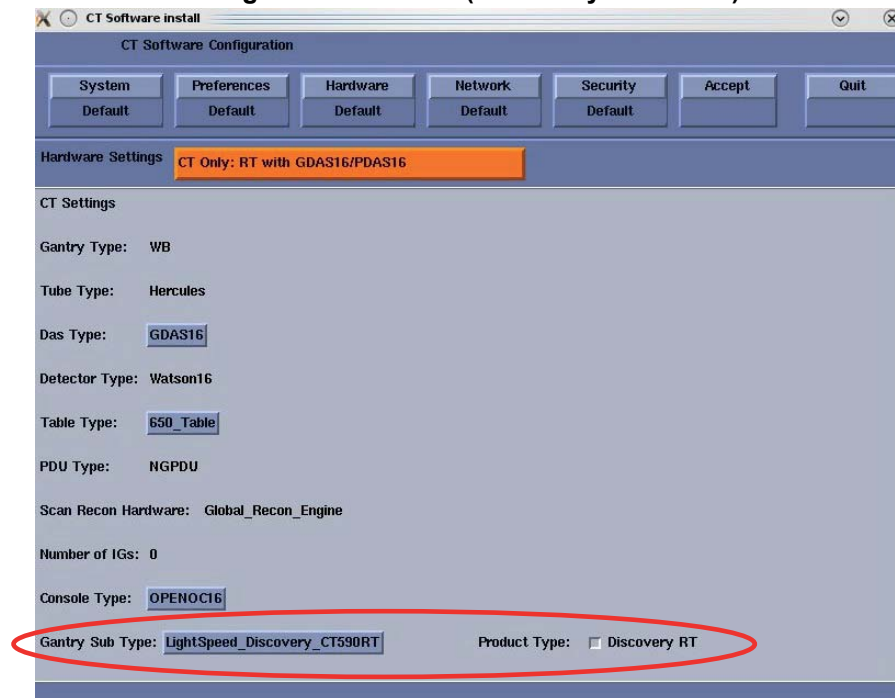
6.1 LFC Procedure

Detail LFC procedure refer to **Service Methods (5366638-2EN_r20 or later) -> Software -> LFC Procedure (17BW49.x)**

Note: Please check and select the correct **Gantry Sub Type** in CT Software Configuration -> Hardware after loading system INFO.

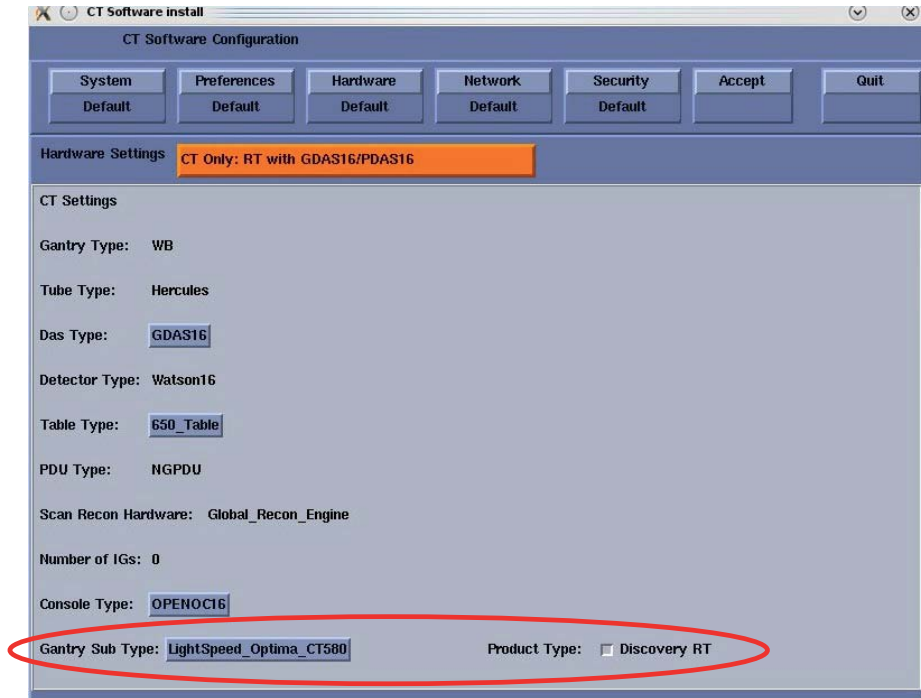
- **For Discovery CT590 RT**
MUST toggle Product Type - Discovery RT [OFF] and select "LightSpeed_Discovery_CT590RT" as Gantry Sub Type

Figure 2-15 Hardware Configuration Window (Discovery CT590 RT)



- **For Optima CT580**
MUST toggle Product Type - Discovery RT [OFF] and select "LightSpeed_Optima_CT580" as Gantry Sub Type.

Figure 2-16 Hardware Configuration Window (Optima CT580)



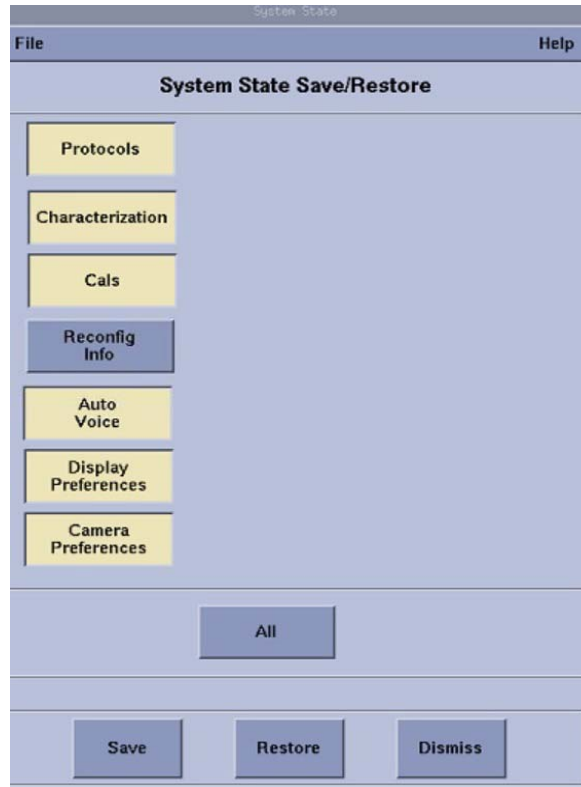
6.2 Restore System State



NOTICE All options need apply new e-license through e-license website (<http://eLicense.gehealthcare.com/eLicense/>) when OC upgrade to Z840 Computer. Please refer to option list recorded in 3.6, Record Option Information Licenses

- 1.) Insert a previously saved System State DVD-RAM Media into the Peripheral Tower DVD-RAM Drive or USB Media in the USB ports
- 2.) Wait until the DVD-RAM Drive or USB Media is ready
- 3.) Select the [Service] icon to access the CSD (Common Service Desktop).
- 4.) Select: [Utilities].
- 5.) Select: [System State] for DVD-RAM Media or [System State - USB] for USB Media. The System State Save/Restore screen appears.
- 6.) Select [All].
- 7.) Click [Reconfig Info] after select [All], See below illustration.

Note: Restoring The Info file will cause problems displaying the CSD (Common Service Desktop).



- 8.) Select [Restore]. The Restore System State box appears.
- 9.) Select [Yes].
- 10.) Verify that the "Restore" of System State was successful. If not, restore the System State again. A message at the end of the System State Log window should display: Restore System State Completed Successfully.

Note: Please ignore any SwOption Error information during restoring the System State

- 11.) When completed, select [Cancel].

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

- 12.) Select [Yes] when the Scan Hardware Reset pop-up appears.
- 13.) When completed, select [Dismiss].
- 14.) Remove System State DVD-RAM disk from the DVD Peripheral Tower or USB Media from USB port and place in a safe location.
- 15.) Reboot the Operators Console by selecting [Shutdown] Desktop, then select [Restart] in the Attention Window.
- 16.) Verify Restore System State
 - a.) Visually verify that the system has the correct configuration and preference settings by opening a Terminal Window.
 - b.) Execute script "reconfig" and manual reset system info.

6.3 Convert Protocol

- 1.) Open a Unix Shell, type:
{ctuser@hostname} **su -**
Password: **#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.

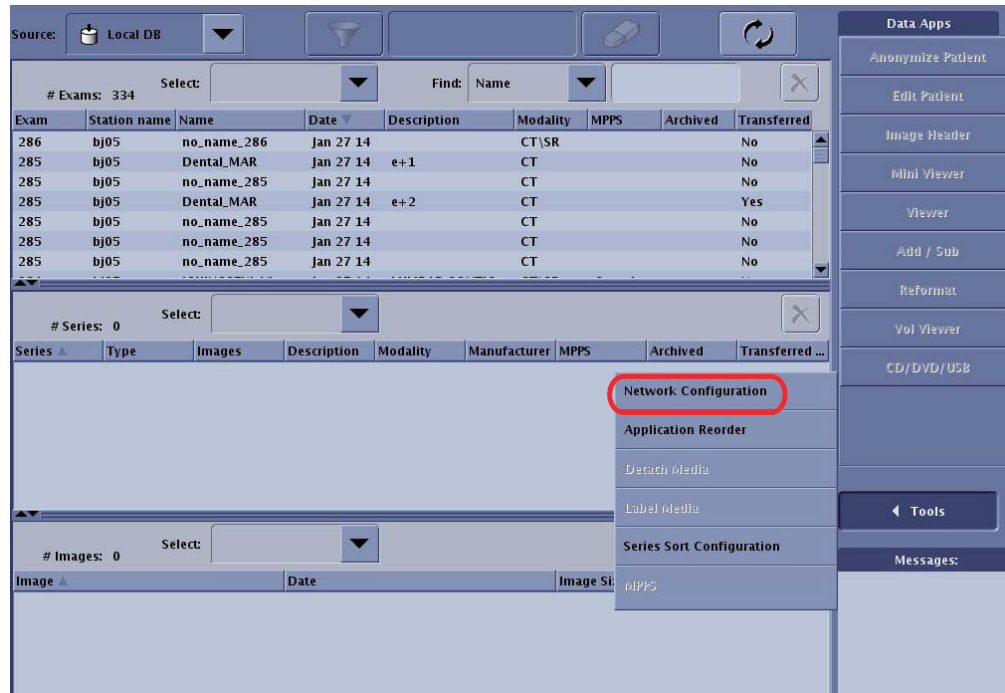
Note: After finishing the user protocol convert, make sure every protocol can be opened by protocol management and save the current system state to another new media.

6.4 Configure System Information on SUSE

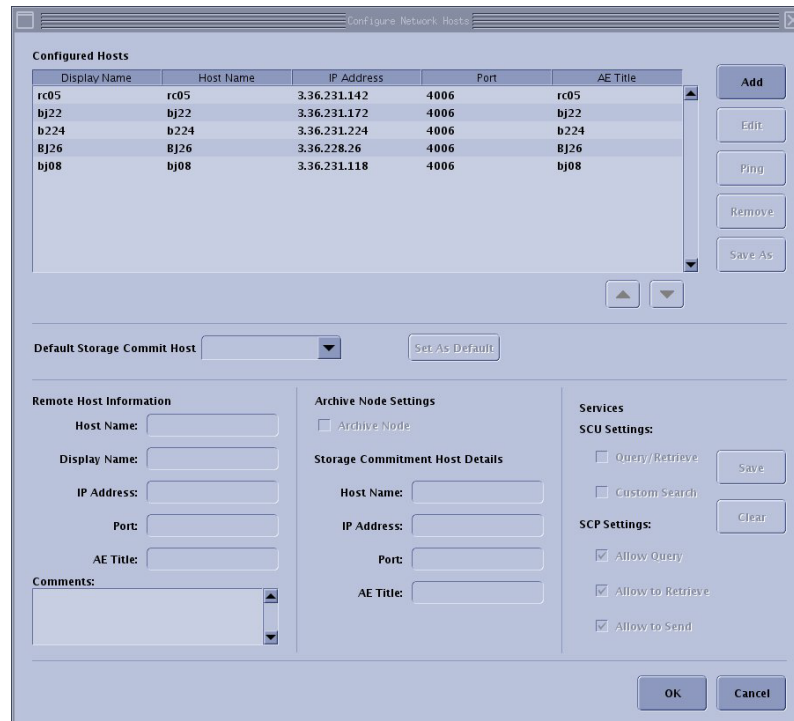
- 1.) Configure PPS server information. Please refer to [3.2, on page 30](#)
- 2.) Configure all remote network information
 - a.) Select [ImageWorks] from the desktop.



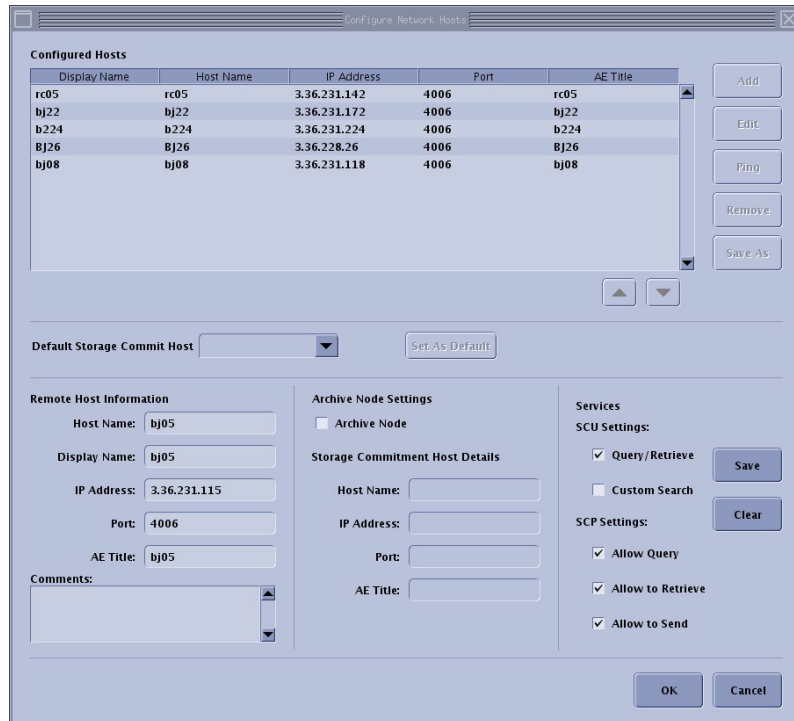
- b.) Select in sequence: Tools-> Network Configuration



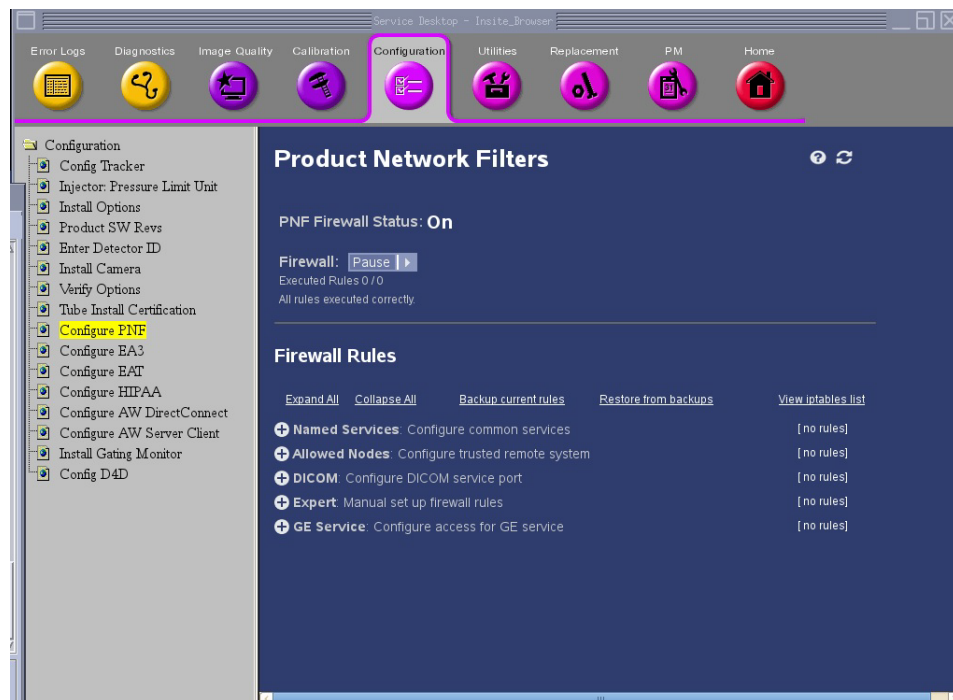
c.) Select [Add]



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



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



- 4.) Configure AW IP for direct information, Please refer to 3.5, on page 35

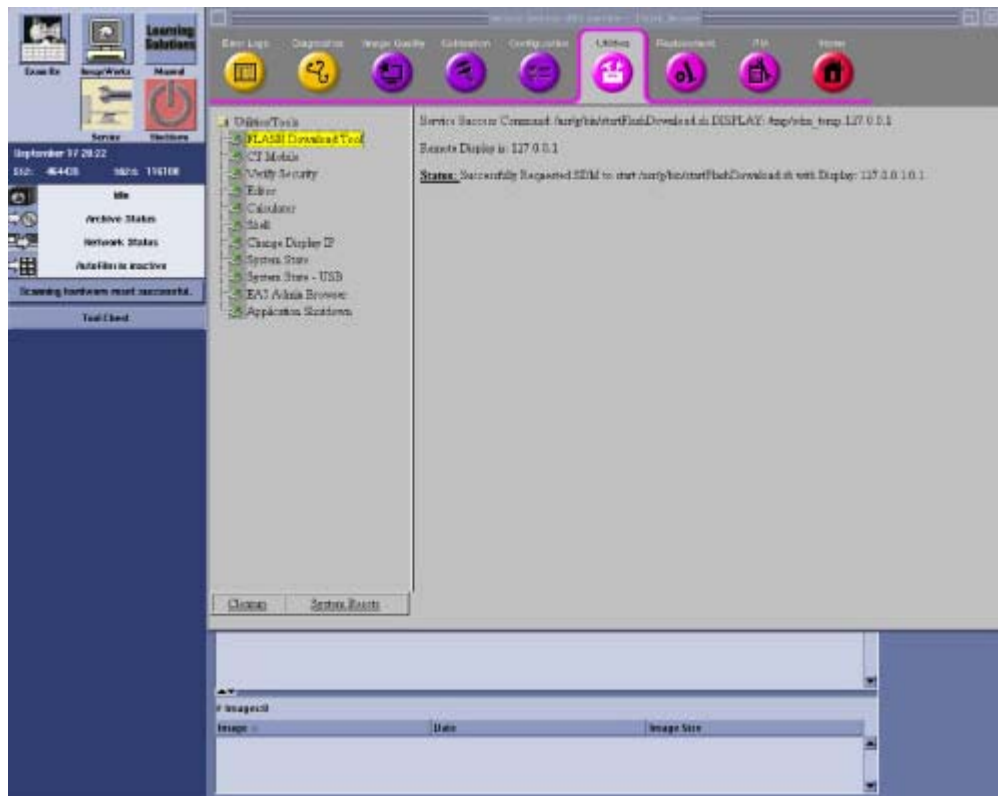
Section 7.0 Finalization

7.1 Flash Download

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

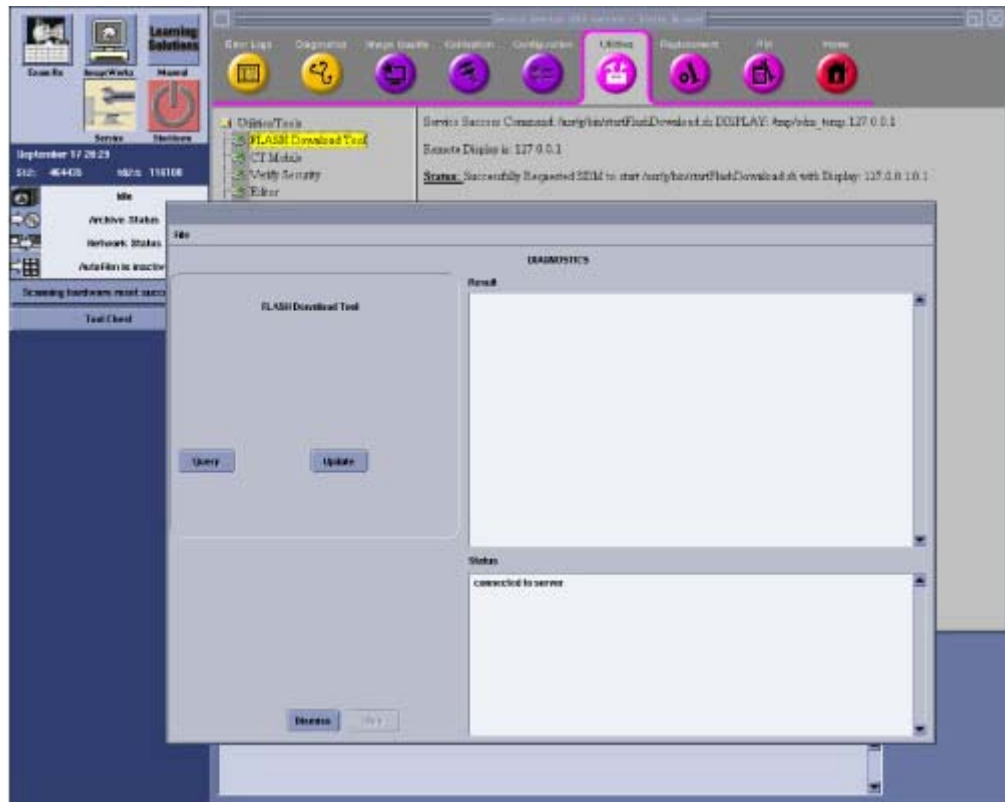
- 1.) Perform the Flash Download Utility found on the Common Service Desktop - Utilities Tab, select [Flash Download].

Figure 17 Common Service Desktop - Utilities Tab, Flash Download



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

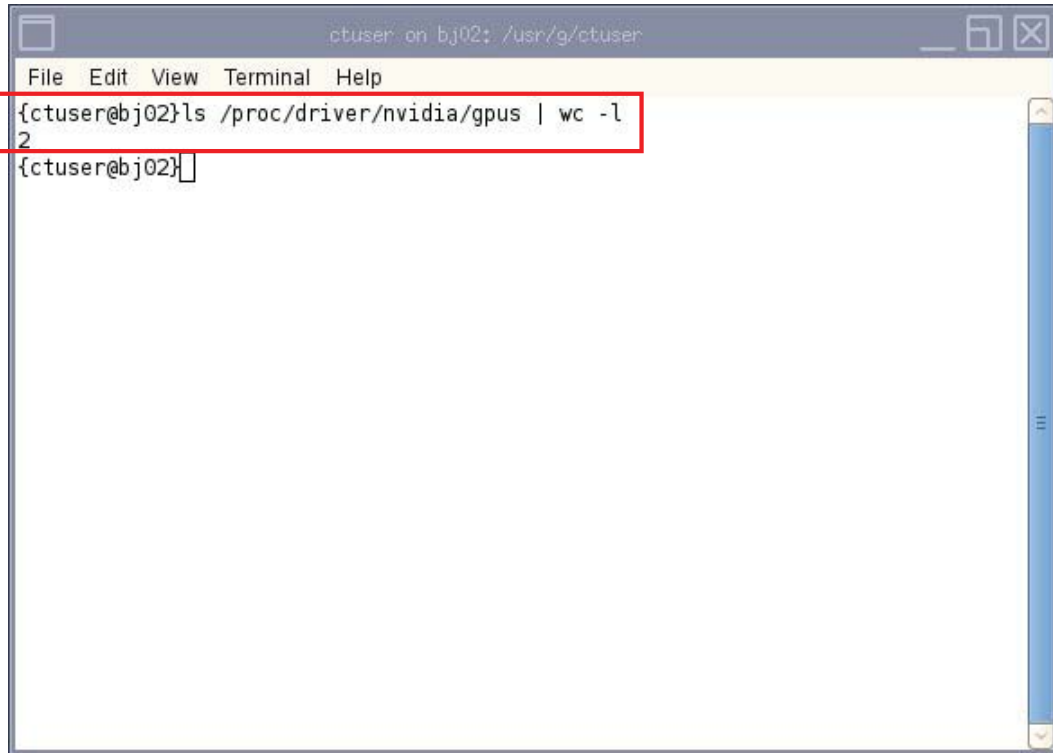
Figure 18 Flash Download Windows



- 3.) Once the Gantry Hardware Flash Downloads successfully, select [Dismiss].
- 4.) Close the Common Service Desktop.

7.2 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.

7.3 System Checking

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

7.4 Save System State

Refer to [Section 2.0, Save System State](#) to save the new system state after system function is normal.

7.5 Old Console Disposal

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.
- 3.) Transporter ships the de-installed console to:
 - **For AM**
Return Ship to:
GEHC Defective/Scrap Returns
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

HARVEST Upgrade	
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**
GE Healthcare Japan Corporation Attn:
Harvest, Service 4-7-127, Asahigaoka, Hino-shi-Tokyo-191-8503 Japan
- **For LATAM**
 - Brazil: Av. Dr. Marcos Penteado 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

Chapter 3

NIO Console with Z800 Upgrade to OpenOC

Section 1.0 Preparative

Refer to the latest service methods (5366639-8EN) to understand detailed hardware and software installation procedure

Section 2.0 System Config Checking

- 1.) Enter the cursor in the monitor screen, then click on the right button of the mouse to select [UnixShellLeft] or [UnixShellRight] in Utilities window.
- 2.) Check system configuration:

```
{ctuser@hostname} check_config
```
- 3.) Record Product Name and Software Version.

Section 3.0 Save System State

Before proceeding with Save System State:

- Make sure to have formatted DVD-RAM disk. Make sure the DVD-RAM disk is not write-protected.

Or

- Have a FAT32 Formatted USB media (either Memory Stick or USB External Drive, minimum of 2 GB).

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 System State DVD-RAM media into the peripheral tower drive or USB media in any of the console's USB ports.
- 2.) Select [Service Desktop]-> [Utilities].
- 3.) Select [System State] for DVD-RAM media or [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 DVD-RAM or USB is ready, select [Yes].
- 7.) When completed select [Dismiss].
- 8.) Remove System State DVD-RAM media from the peripheral tower or USB media from USB port.

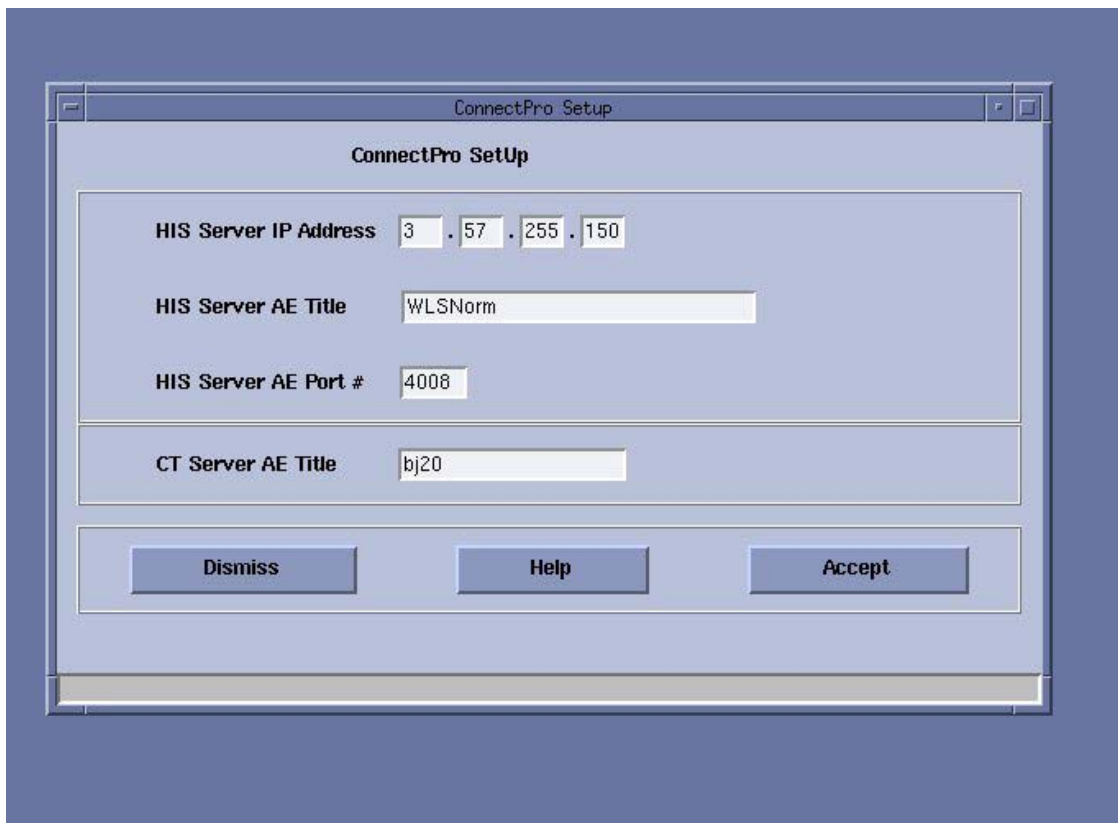
Section 4.0 Record System Information

- If the software version checked in [Section 2.0, System Config Checking](#) is CTT 11BW46.x or before, go ahead the following steps.
- If the software version checked in [Section 2.0, System Config Checking](#) is SUSE 13BW16.x or later, skip this section and go to the next section: [Section 5.0, NIO Console Z800 Removal and OpenOC Z840 Installation](#)

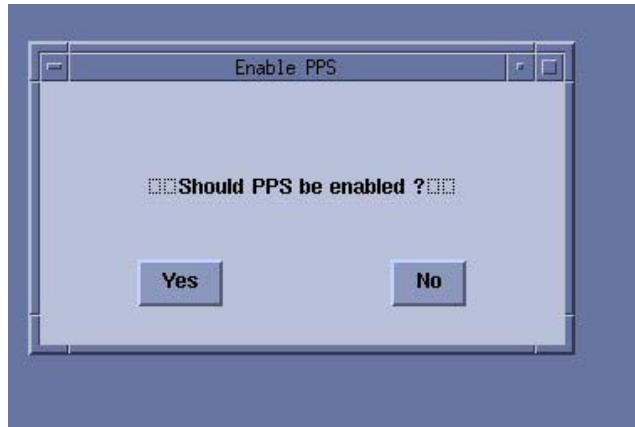
4.1 Record PPS Server Information

- 1.) Open a Unix Shell:

```
{ctuser@hostname} installhisris
```
- 2.) Press <ENTER>, the following illustration appeared, record the data then press [Accept].

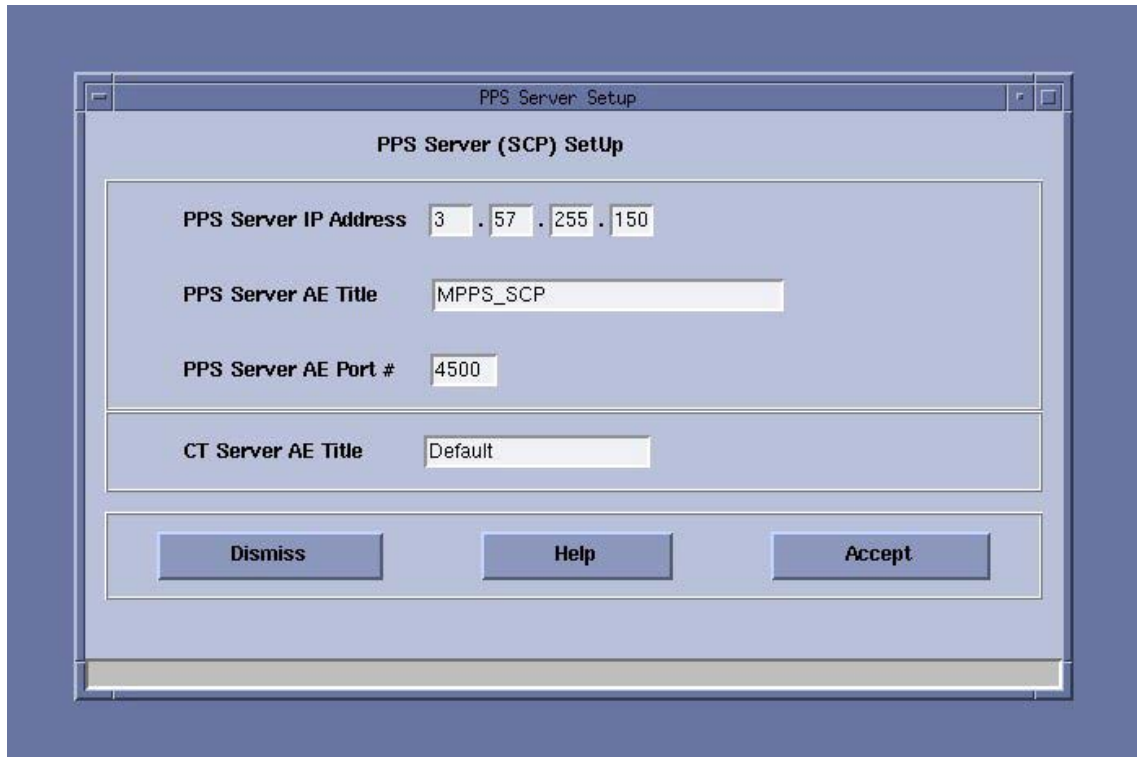


- 3.) "Should PPS be enabled?" is popped up. Select [Yes].



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].

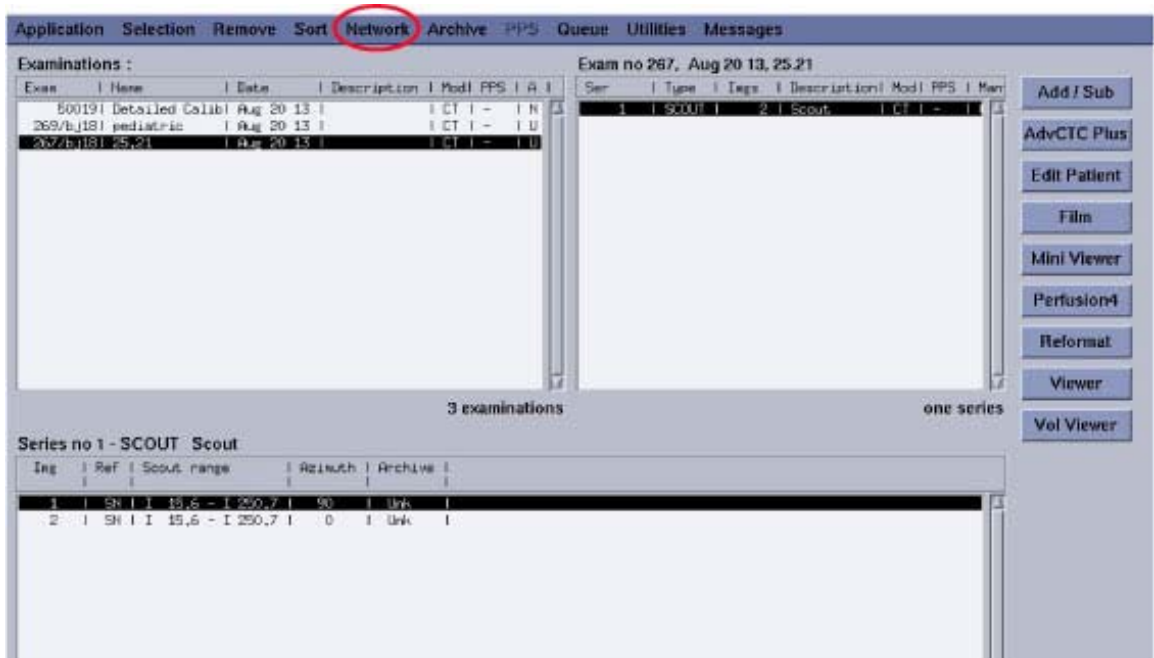


4.2 Record All Remote Host Network Information

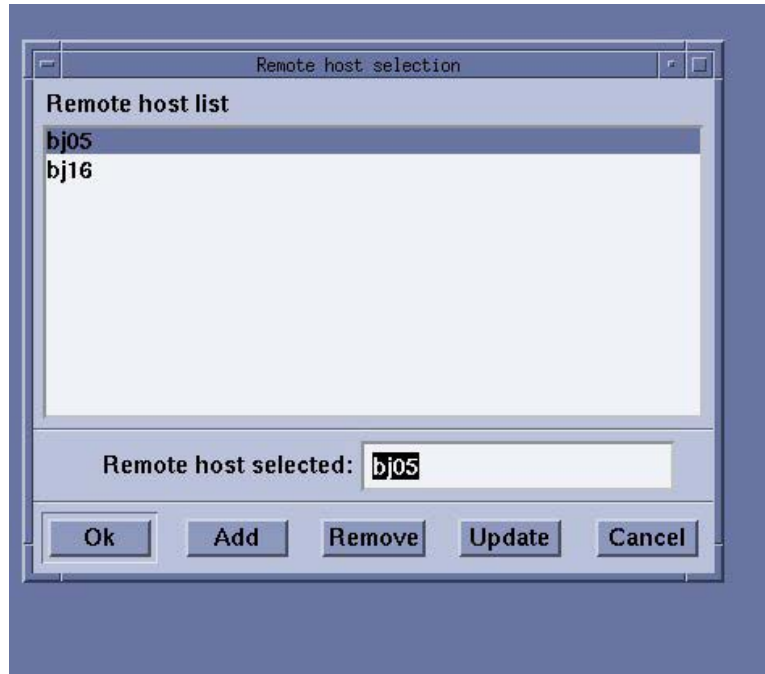
- 1.) Select [ImageWorks] from the desktop.



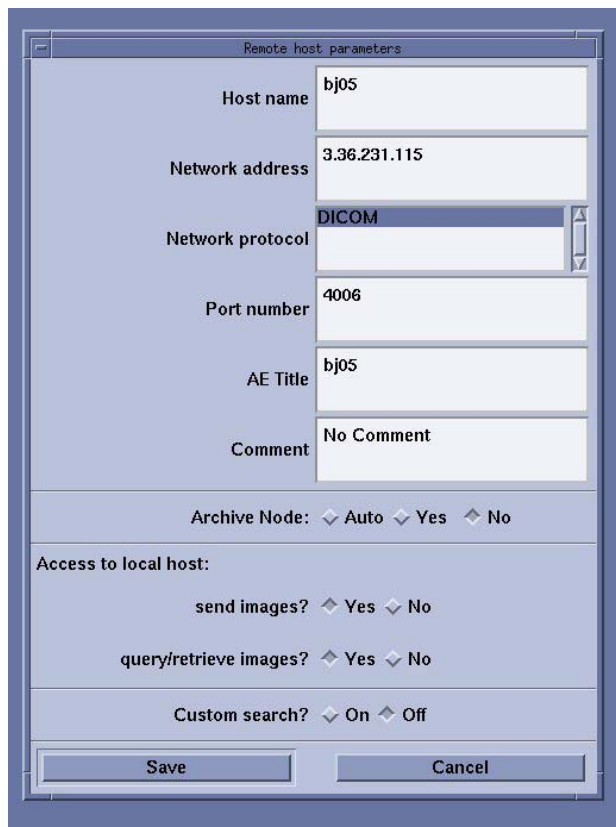
- 2.) Select [Network]



- 3.) Click [Select remote host] on the Network list menu
- 4.) Select Remote host from the Remote host list, then click [update].

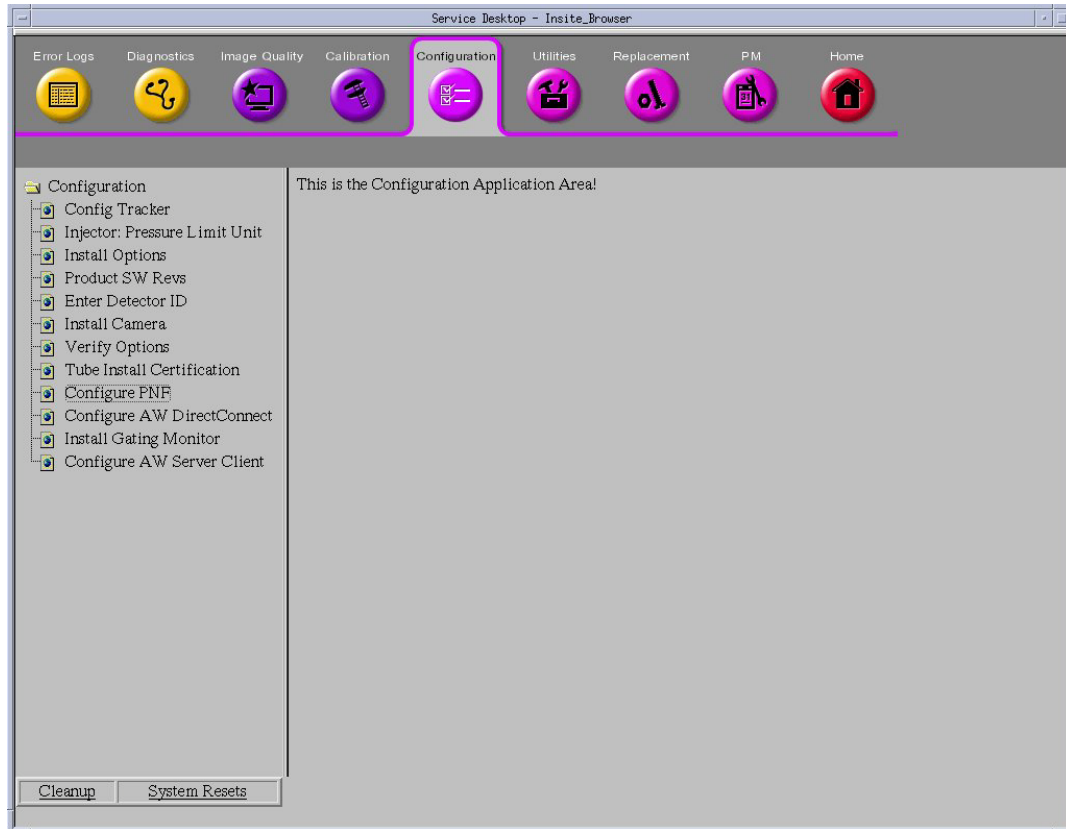


5.) Record the Network information as below.

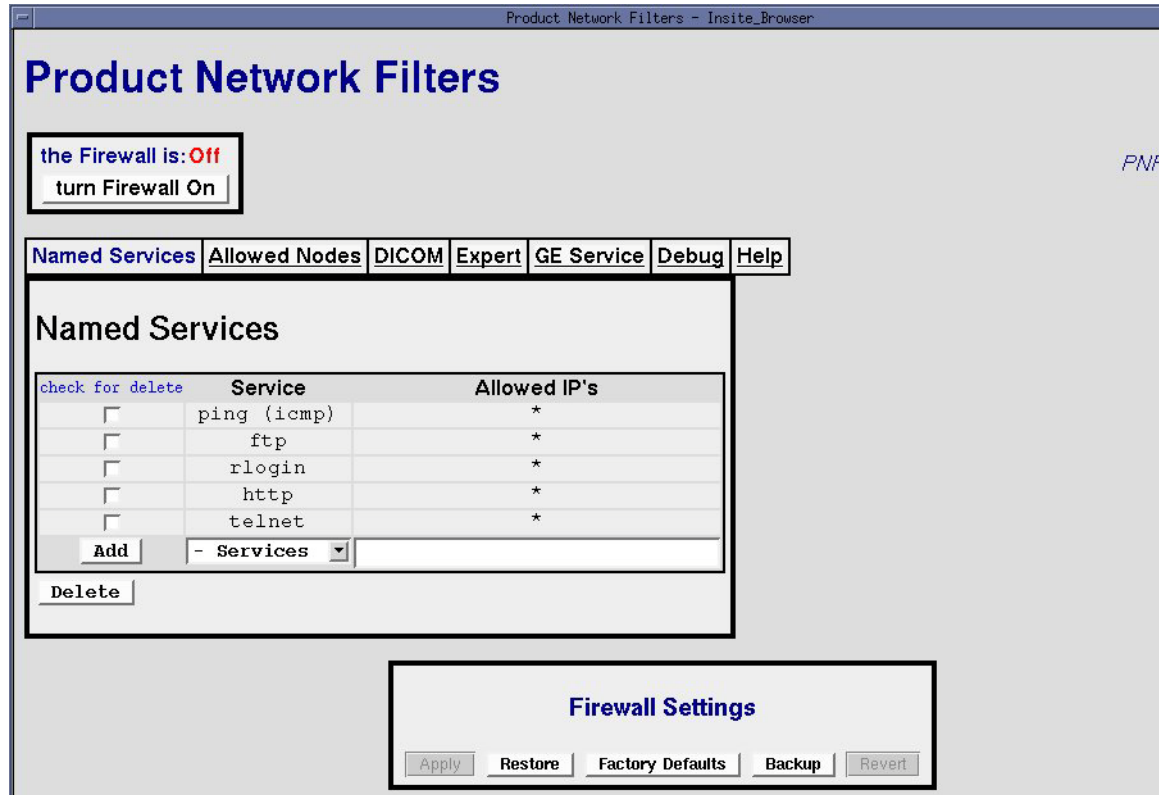


4.3 Record Product Network Filters (PNF) Information

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

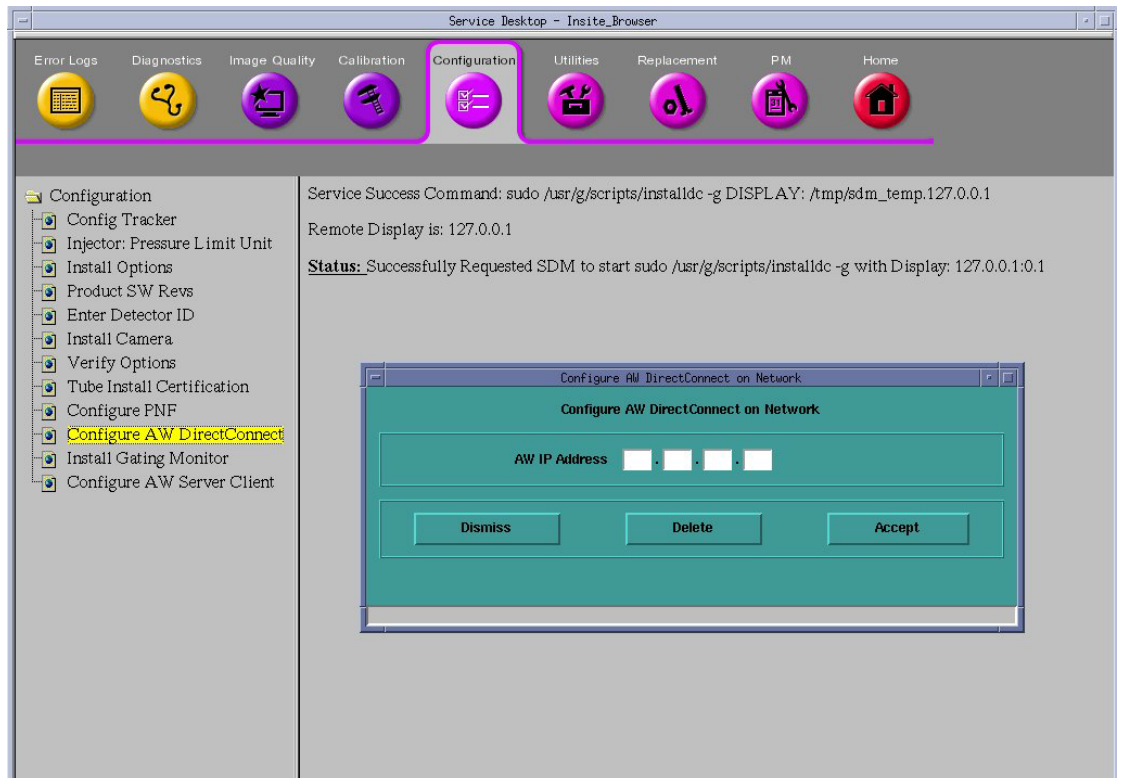


- 3.) Record PNF information.

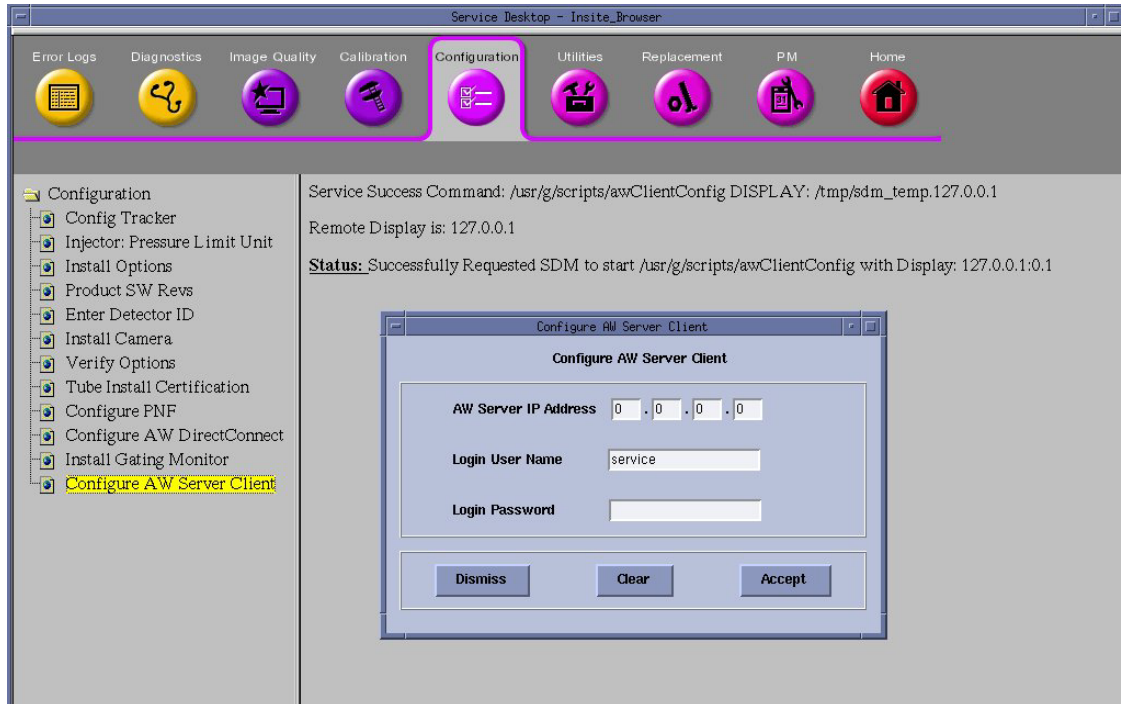


4.4 Record AW IP for Direct Information

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

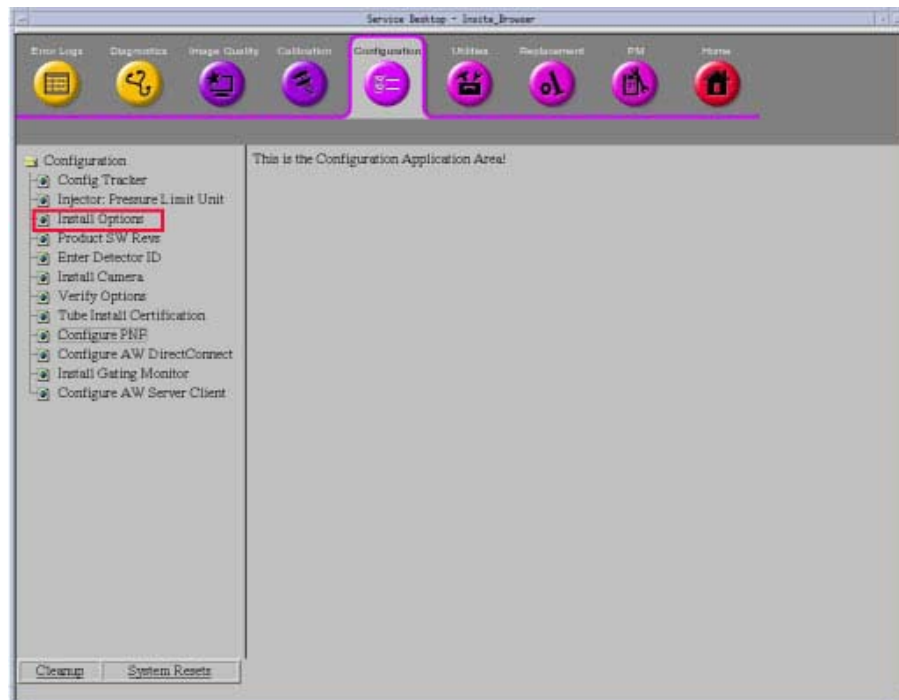


- 3.) Select in sequence: Configuration → Configure AW Server Client and record AW server INFO



4.5 Record Option Information Licenses

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



- 3.) View Option List and check whether include below 6 options, these six options need apply the new e-licence when system platform upgrade from CTT to SUSE.
 - AutoBone Xpress on OC
 - Advanced Vessel Analysis Xpress on OC
 - Perf 4 Neuro on Xstream OC
 - Perf 4 Multi Organ on Xstream OC
 - Advantage CTC Pro for OC
 - SmartView Multi-Slice

B-CAT	Option Name (Installed in Site)	Flex String (CTT System)	Flex String (SUSE System)
B7870JD	AutoBone Xpress on OC	AutoBone	AutoBone_Xpress
B7870JC	Advanced Vessel Analysis Xpress on OC	AdvVesselAnalysis	AVA_Xpress
B7870HN	Perf 4 Neuro on Xstream OC	CTPerfusion4Neuro	CT_Perfusion_4D_Neuro
B7870HM	Perf 4 Multi Organ on Xstream OC	CTPerfusion4	CT_Perfusion_4D_MultiOrgan
B7864KL	Advantage CTC Pro for OC	CTColonoPro	CT_Colono_Pro3D_EC
B7868FM (Smartview 2D)	SmartView Multi-Slice	RealTimeCTFluoro	Enhanced_Real_Time_CT_Fluoro

Table 3-1 Compare Flex String Between CTT and SUSE System

Section 5.0 NIO Console Z800 Removal and OpenOC Z840 Installation

5.1 Old NIO Console (Z800) 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 Console aside.

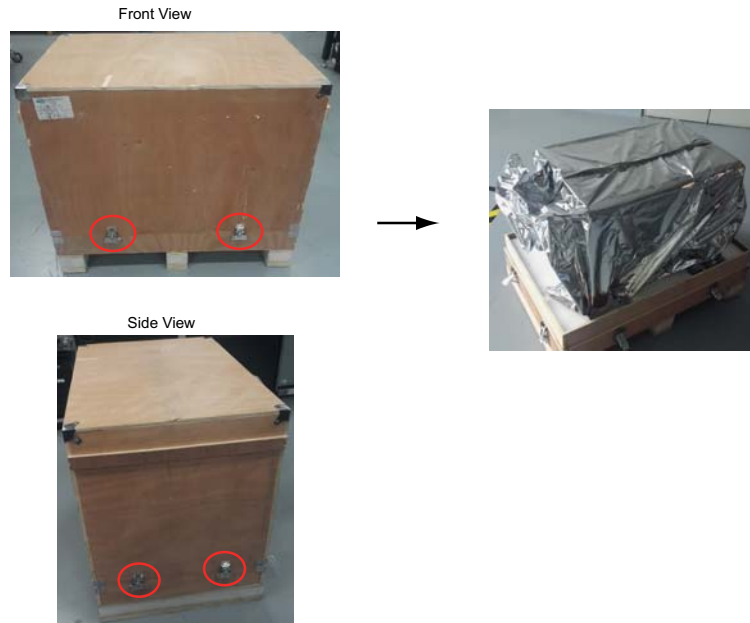
5.2 OpenOC16 with Z840 Host Computer Installation

5.2.1 Unpack OpenOC16 with Z840 PC

Please read detail about OpenOC16 installation procedure in Service Manuals

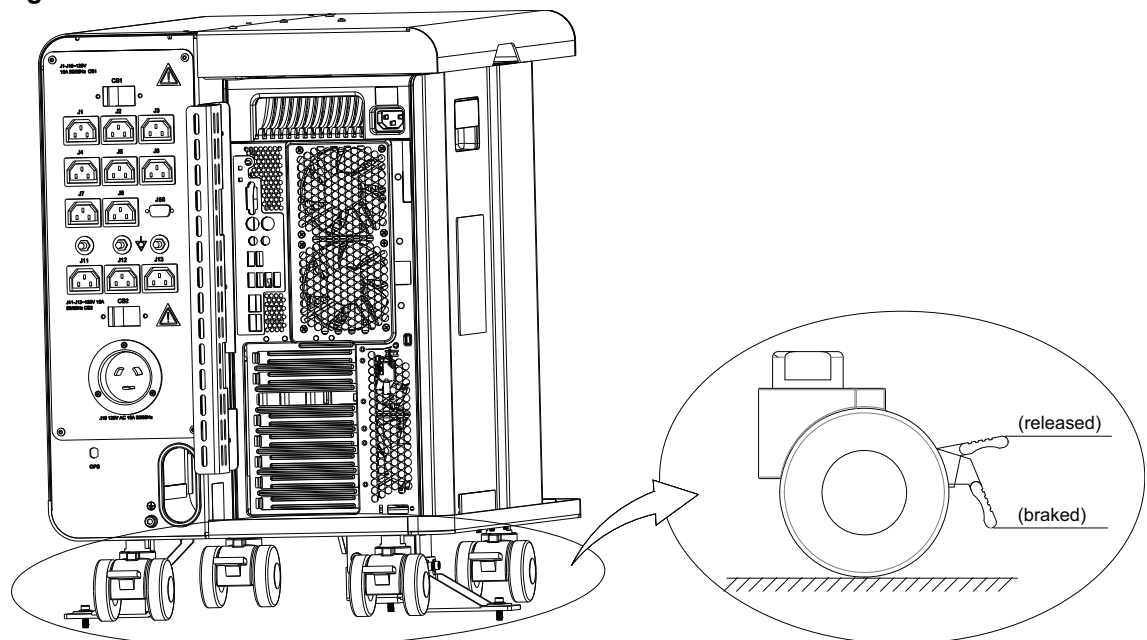
- 1.) Unpack console packaging.
 - a.) Released eight latches and remove the packaging covers.

Figure 3-1 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 3-2 Brake



5.2.2 GPU Card Installation

Please refer to **GPU Fluoro Prerequisite Installation Manual (5344368-1EN_r5 or later)** to install GPU Card (8770000-126, shipped with B79442CB) in Z840 Host Computer.

5.2.3 Memory Installation

Note: If the customer has purchased MAR Option and installed in old system, please order MAR Option Kit (B79602CB) for new system.

Please refer to MAR Option Installation Manual (5767680-1EN) to install Memory (8770000-100, shipped with B79602CB) in Z840 Host Computer.

5.2.4 Console Cable Connections

NO.	Description	Long Cable	Short Cable
53	LVAC Power Cable - PDU to Operator Console	2343531	2343531-2
56	Ground, Raceway to Operator Console	2371450-3	2371450-4
101	Signal Cable - Gantry to Operator Console	5419981	5419981-2
102	Signal Cable (Ethernet) - Gantry to Operator Console	2373436-2	2373436-3
103	Data Cable (Fiber Optic) - Gantry to Console	5432019	

Table 3-2 System Cables for OC Connections

Figure 3-3 System Interconnect Diagram (with Z840 Host Computer)

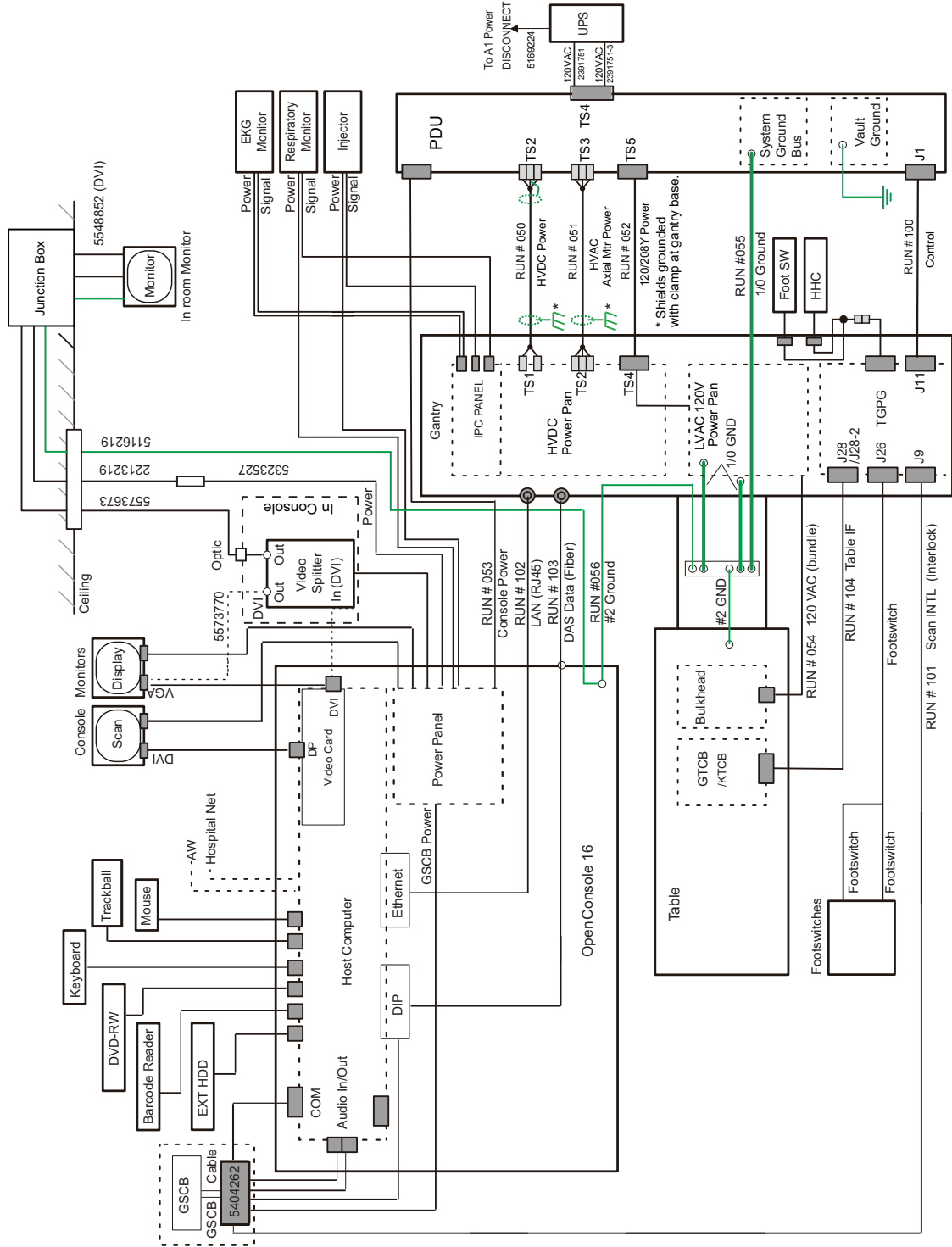


Figure 3-5 Z840 Host Computer Port Label

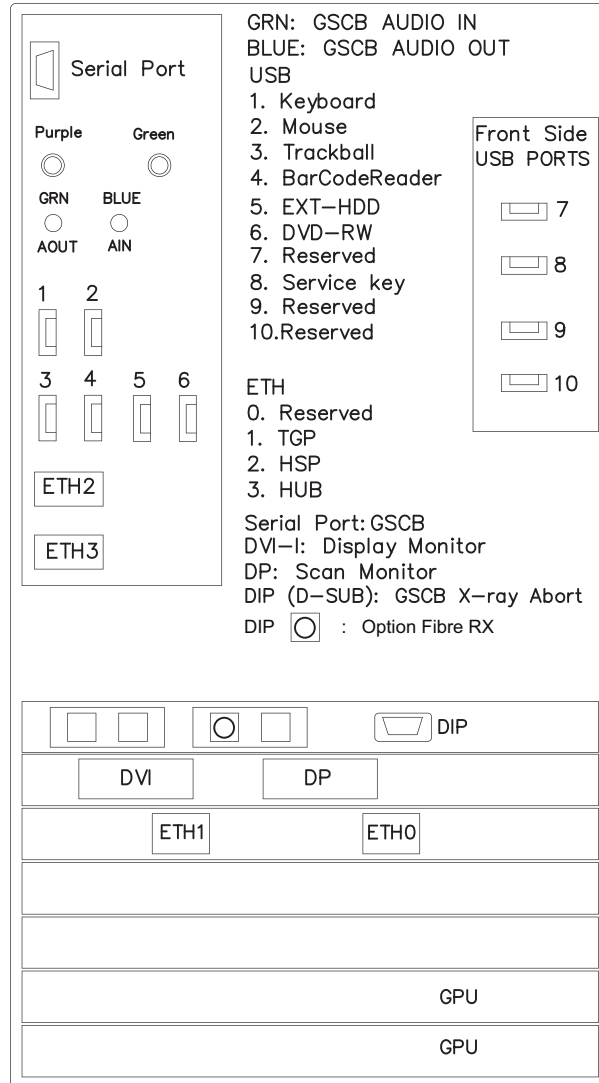


Figure 3-6 OpenOC16 AC Box Assignments



Number	Description
J1	Scan Monitor Power Connection
J2	Display Monitor Power Connection
J4	In-Room Monitor Connection
J5	Peripheral Media Tower Power Connection
J12	RPM Power Connection
J13	Injector Power Connection
J56	GSCB Power Connection

Table 3-3 AC Box Outlet Assignments

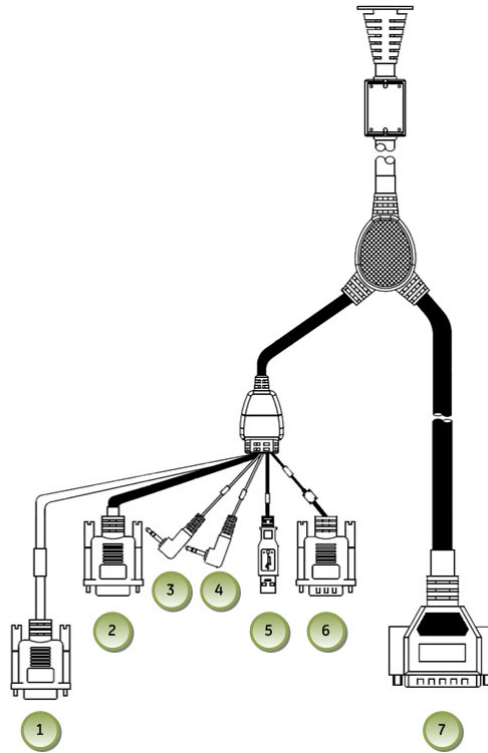
- 1.) Connect the Keyboard and Mouse cables to OpenOC16 Z840 Host Computer.

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

Table 3-4 Cable Extension

- 2.) Remove the old GSCB from the site, and take out the new GSCB from the upgrade kit. Connect GSCB cable OpenOC AC Box and Z840 Host Computer according to [Figure 3-7](#) and [Table 3-5](#)

Figure 3-7 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 3-5 GSCB Cables

- Remove the old Media Tower from the site and install the new Media Tower (5270510-22) shipped with upgrade kit. Connect Media Tower cables to Open Console AC Box and Z840 Host Computer.

DESCRIPTION	PART NUMBER	CABLE LENGTH	QTY
USB Cable (PMT)	5315370	2000 mm	2
PMT power cable	5432953-6	3050 mm	1

Table 3-6 Media Tower Cables

Figure 3-8 Media Tower Connections



- 1) Power for Media Tower
- 2) Power for MOD Drive
- 3) DVD-RW Drive
- 4) External USB
- 5) HDD External SSA Key

4.) Connect LCD Monitor cable connectors to OpenOC16 AC Box and Z840 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
Scan Monitor Video Cable	5408703-2	3000 mm	1
Image Monitor Video Cable	5366259	3000 mm	1

Table 3-7 Monitor Cables for Z840

Scan Monitor

- Video cable: Z840 PC DP to Monitor DVI
- Power cable: AC Box J1 to Monitor power

Figure 3-9 Video Cable and Power Cable



Image Monitor

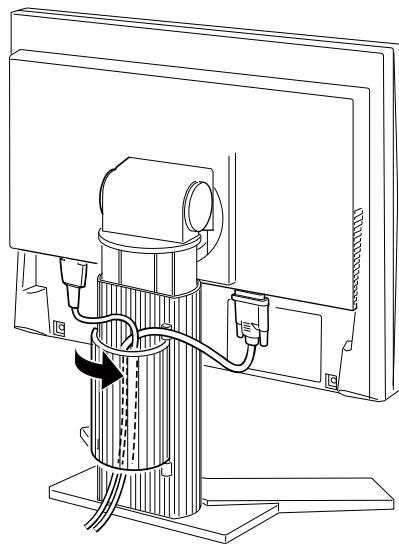
- Video cable: Z840 PC DVI to Monitor VGA
- Power cable: AC Box J2 to Monitor power

Figure 3-10 Video Cable and Power cable



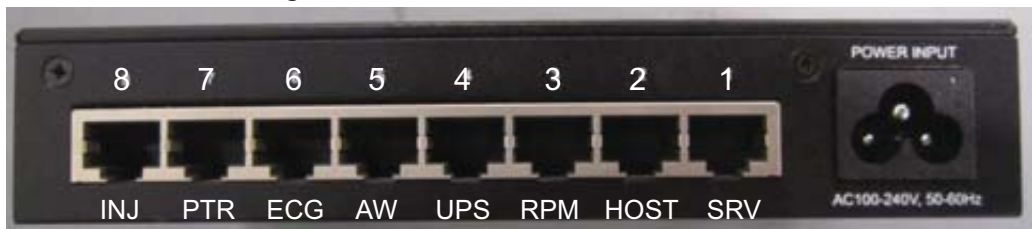
Route LCDs video cable and power cable.

Figure 3-11 Cable Routing and Keeper



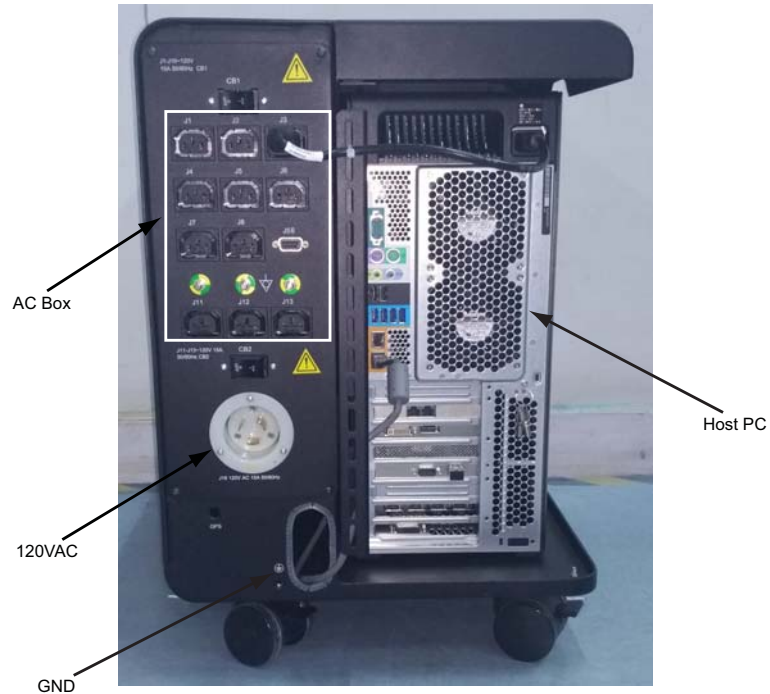
- 5.) Remove OpenOC16 right side cover and plug cables into Switch Hub on console if request.
- 6.) Connect other cables to Z840 Host Computer according to [Figure 3-5](#), then install right side cover of console.

Figure 3-12 Switch Hub Connections



- 7.) Connect the Power Cable and Ground Cable to the OpenOC16 Panel. See [Figure 3-13](#)

Figure 3-13 OpenOC16 Rear View with AC BOX



5.2.5 Console Cover Installation

Please refer to **Service Methods (5366638-2EN_r20 or later) -> Replacement -> OpenOC16 -> Console Cover Removal and Installation** to Install console covers.

Section 6.0 Load From Cold Procedure

- If the software version checked in [Section 2.0, System Config Checking](#) is CTT 11BW46.x or before, go ahead the following steps.
- If the software version checked in [Section 2.0, System Config Checking](#) is SUSE 13BW16.x, go ahead the following steps.
- If the software version checked in [Section 2.0, System Config Checking](#) is SUSE 15BW19.x or later, directly restore system state by following [6.2, Restore System State](#)

6.1 LFC Procedure

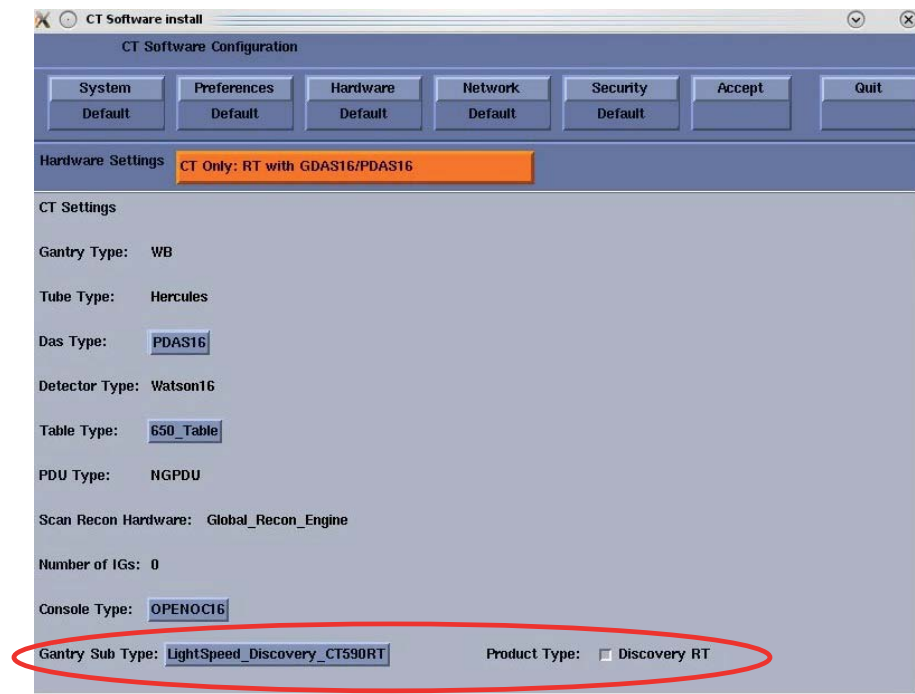
Detail LFC procedure refer to **Service Methods (5366638-2EN_r20 or later) -> Software -> LFC Procedure (17BW49.x)**

Note: Please check and select the correct **Gantry Sub Type** in CT Software Configuration -> Hardware after loading system INFO.

- **For Discovery CT590 RT / Optima CT580**

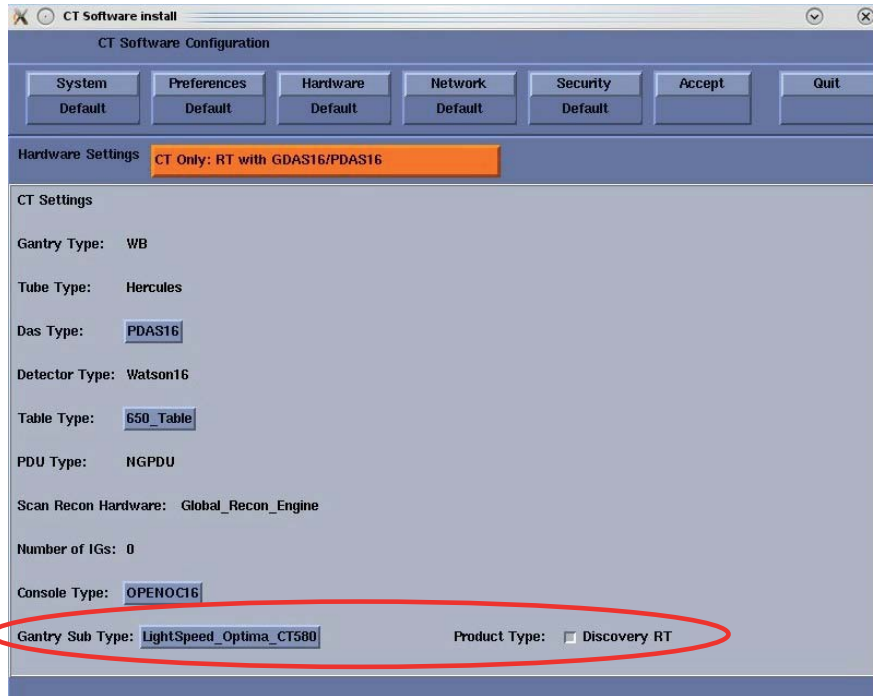
- For Discovery CT590 RT, **MUST** toggle Product Type - Discovery RT [OFF] and select "LightSpeed_Discovery_CT590RT" as Gantry Sub Type.

Figure 3-14 Hardware Configuration Window (Discovery CT590 RT)



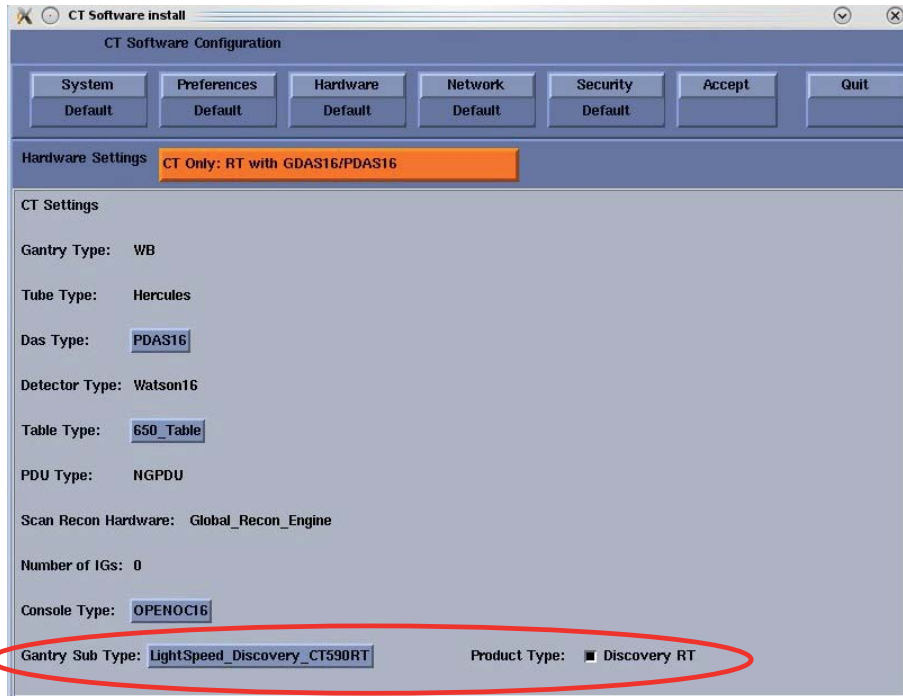
- For Optima CT580, **MUST** toggle Product Type - Discovery RT [OFF] and select "LightSpeed_Optima_CT580" as Gantry Sub Type.

Figure 3-15 Hardware Configuration Window (Optima CT580)



- Discovery RT
For Discovery RT, **MUST** toggle Product Type - Discovery RT [ON] and select "LightSpeed_Discovery_CT590RT" as Gantry Sub Type.

Figure 3-16 Hardware Configuration Window (Discovery RT)



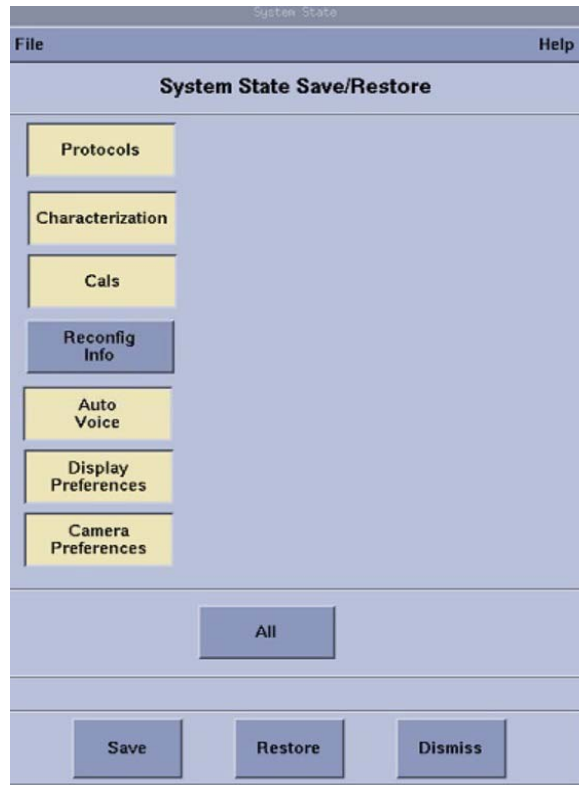
6.2 Restore System State



NOTICE All options need apply new e-license through e-license website (<http://eLicense.gehealthcare.com/eLicense/>) when OC upgrade to Z840 Computer. Please refer to option list recorded in 4.5, [Record Option Information Licenses](#)

- 1.) Insert a previously saved System State DVD-RAM Media into the Peripheral Tower DVD-RAM Drive or USB Media in the USB ports
- 2.) Wait until the DVD-RAM Drive or USB Media is ready
- 3.) Select the [Service] icon to access the CSD (Common Service Desktop).
- 4.) Select: [Utilities].
- 5.) Select: [System State] for DVD-RAM Media or [System State - USB] for USB Media. The System State Save/Restore screen appears.
- 6.) Select [All].
- 7.) Click [Reconfig Info] after select [All], See below illustration.

Note: Restoring The Info file will cause problems displaying the CSD (Common Service Desktop).



- 8.) Select [Restore]. The Restore System State box appears.
- 9.) Select [Yes].
- 10.) Verify that the "Restore" of System State was successful. If not, restore the System State again. A message at the end of the System State Log window should display: Restore System State Completed Successfully.

Note: Please ignore any SwOption Error information during restoring the System State

- 11.) When completed, select [Cancel].
- 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
- 12.) Select [Yes] when the Scan Hardware Reset pop-up appears.
- 13.) When completed, select [Dismiss].
- 14.) Remove System State DVD-RAM disk from the DVD Peripheral Tower or USB Media from USB port and place in a safe location.
- 15.) Reboot the Operators Console by selecting [Shutdown] Desktop, then select [Restart] in the Attention Window.
- 16.) Verify Restore System State
- Visually verify that the system has the correct configuration and preference settings by opening a Terminal Window.
 - Execute script “reconfig” and manual reset system info.

6.3 Convert Protocol

- If the software version checked in [Section 2.0, System Config Checking](#) is CTT 11BW46.x or before, go ahead the following steps.
 - If the software version checked in [Section 2.0, System Config Checking](#) is SUSE 13BW16.x, go ahead the following steps.
 - If the software version checked in [Section 2.0, System Config Checking](#) is SUSE 15BW19.x or later, directly skip to [Section 7.0, Finalization](#)
- Open a Unix Shell, type:
`{ctuser@hostname} su -`
Passwrod: **#bigguy**
 - `[root@hostname] # /usr/g/scripts/conv_proto <Enter>`
 - Input **y** then press [Enter] to convert protocols.
Do you want to convert protocols? [Y/N]
 - 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.

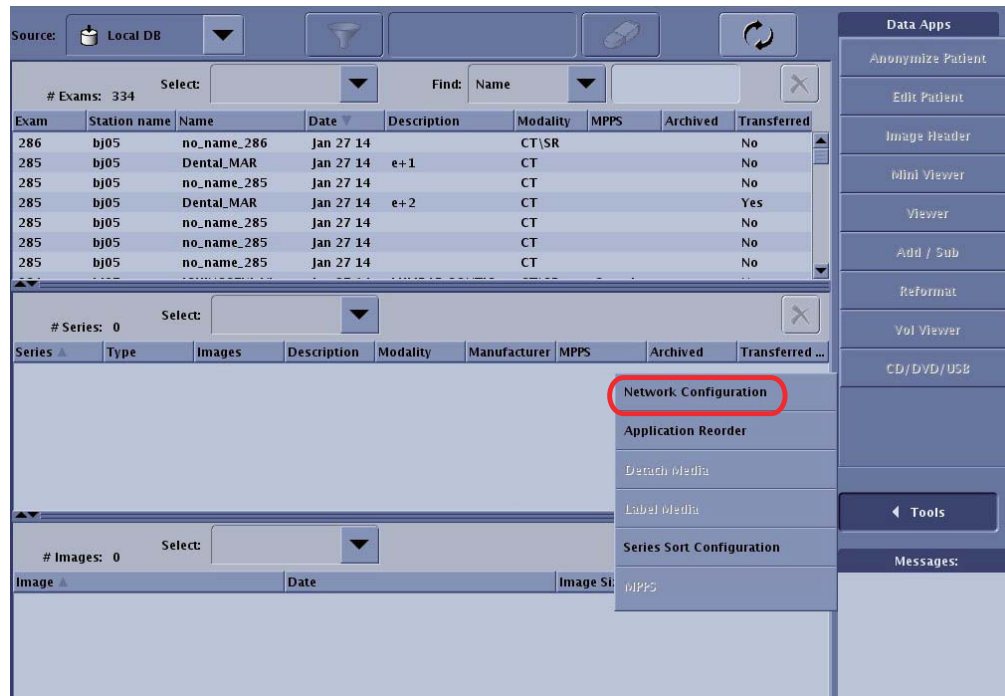
6.4 Configure System Information on SUSE

- If the software version checked in [Section 2.0, System Config Checking](#) is CTT 11BW46.x or before, go ahead the following steps.
 - If the software version checked in [Section 2.0, System Config Checking](#) is SUSE 13BW16.x or later, skip this section and go to the next section: [Section 7.0, Finalization](#)
- Configure PPS server information. Please refer to [4.1, on page 60](#)
 - Configure all remote network information

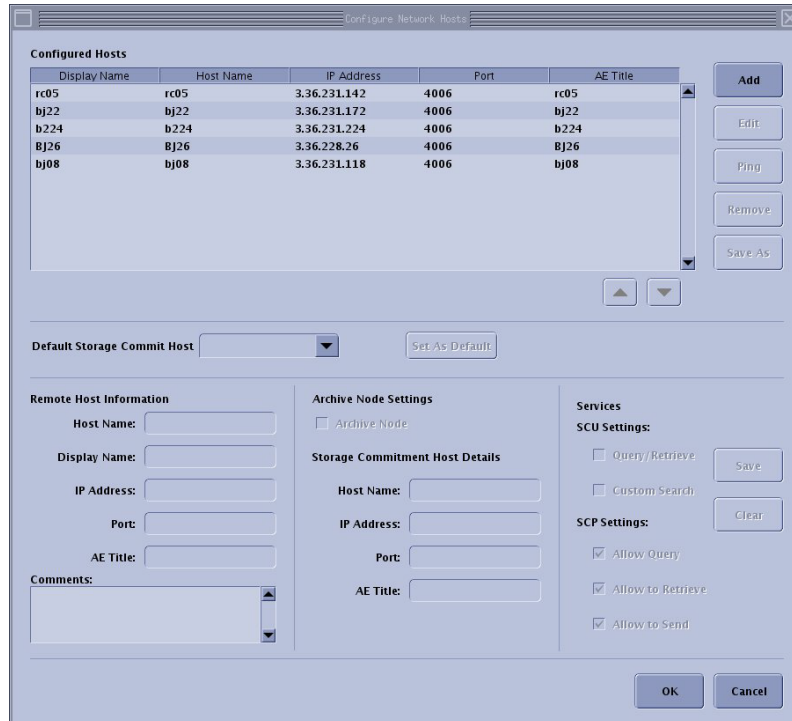
a.) Select [ImageWorks] from the desktop.



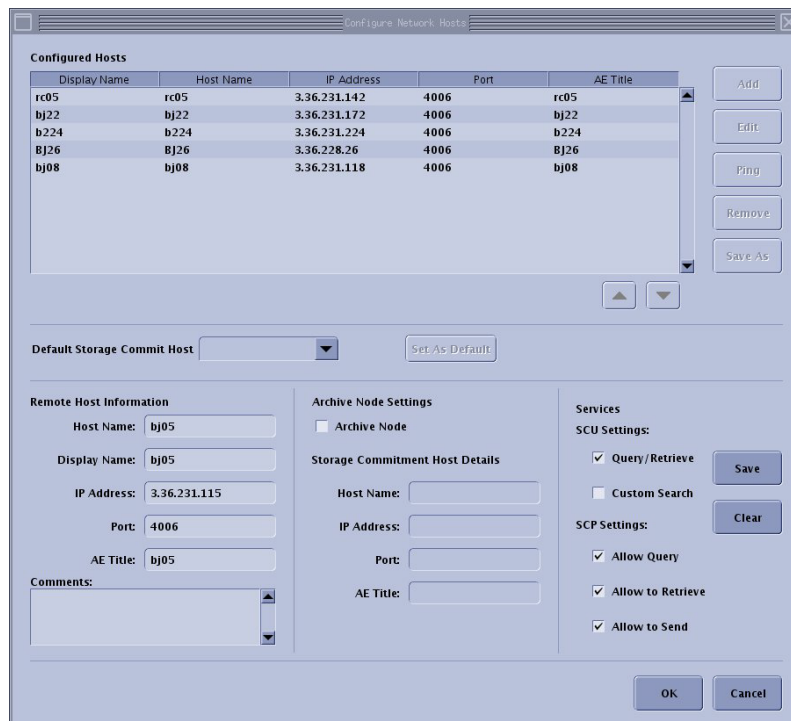
b.) Select in sequence: Tools-> Network Configuration



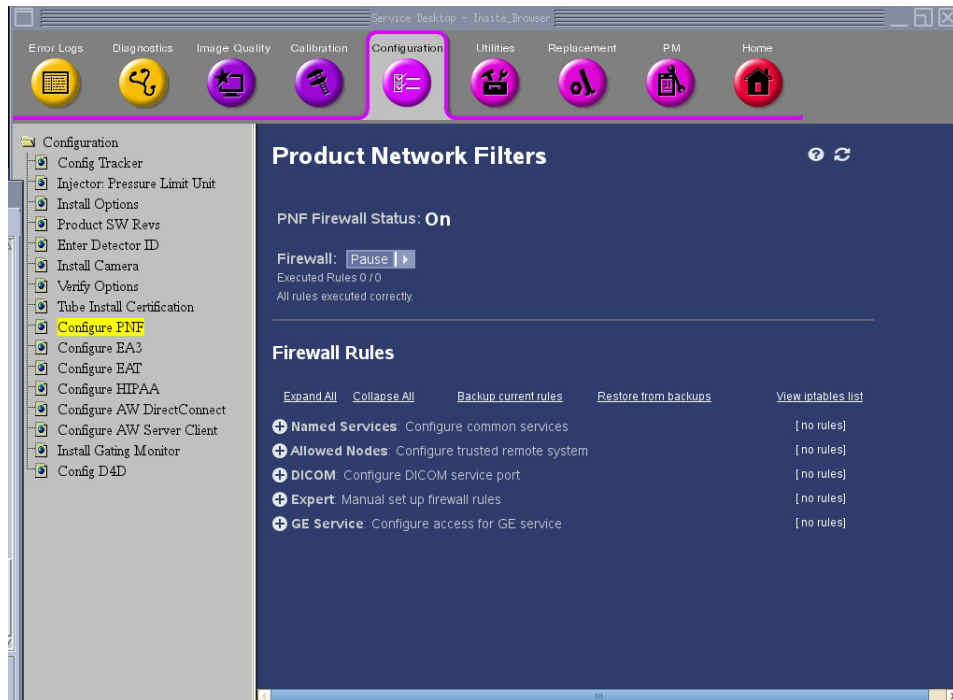
c.) Select [Add]



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



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



- 4.) Configure AW IP for direct information, Please refer to [4.4, on page 65](#)

Section 7.0 Finalization

7.1 Flash Download

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

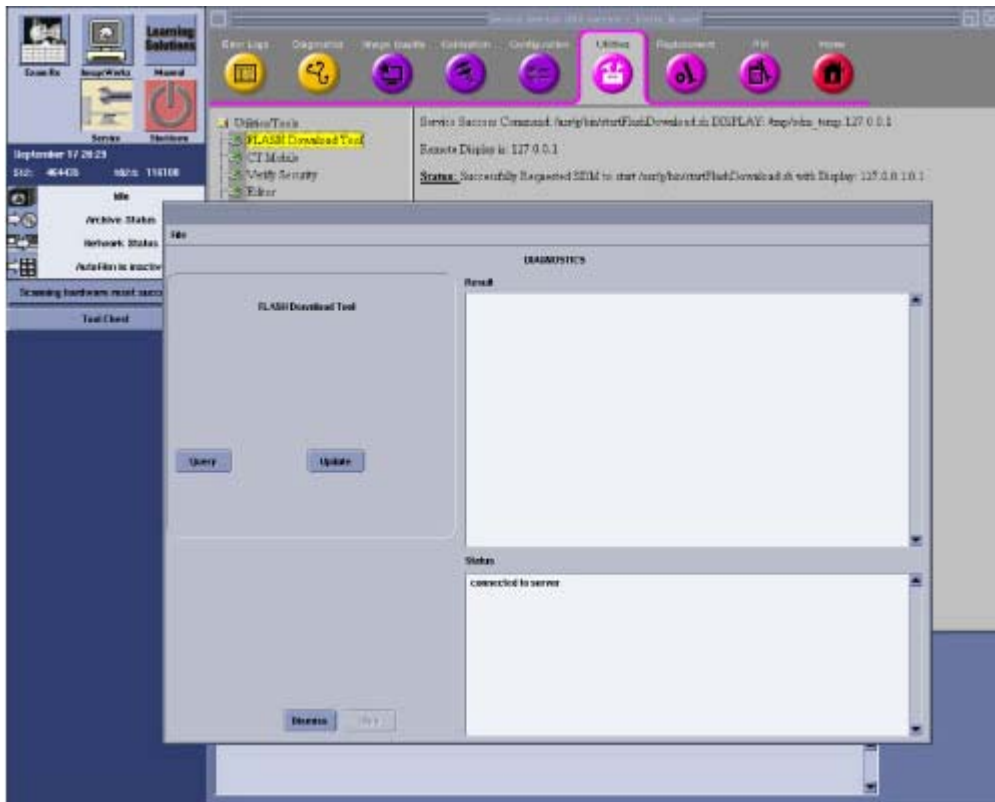
- 1.) Perform the Flash Download Utility found on the Common Service Desktop - Utilities Tab, select [Flash Download].

Figure 17 Common Service Desktop - Utilities Tab, Flash Download



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

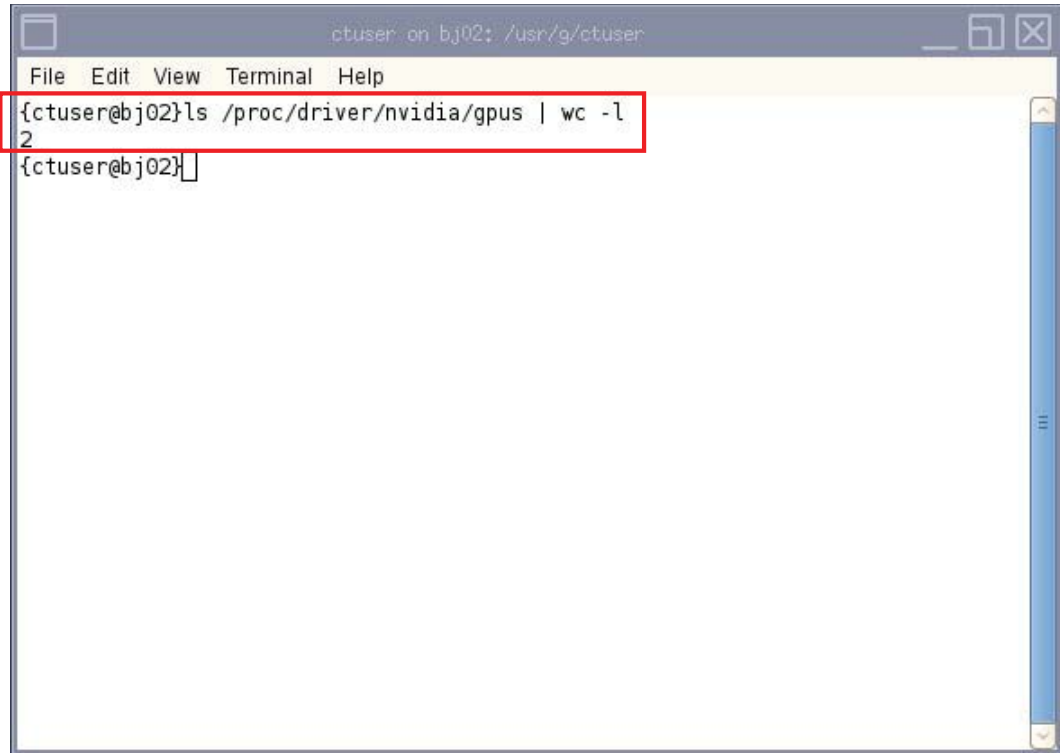
Figure 18 Flash Download Windows



- 3.) Once the Gantry Hardware Flash Downloads successfully, select [Dismiss].
- 4.) Close the Common Service Desktop.

7.2 Check GPU Card

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



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

7.3 System Checking

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

7.4 Save System State

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

7.5 Old Console Disposal

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.
- 3.) Transporter ships the de-installed console to:
 - **For AM**
Return Ship to:
GEHC Defective/Scrap Returns
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**
GE Healthcare Japan Corporation Attn:
Harvest, Service 4-7-127, Asahigaoka, Hino-shi-Tokyo-191-8503 Japan
- **For LATAM**
 - Brazil: Av. Dr. Marcos Penteado 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

Chapter 4

NIO Console with Z840 Upgrade

Section 1.0 Preparative

Refer to the latest service methods (5366639-8EN) to understand detailed hardware and software installation procedure

Section 2.0 Media Tower Replacement

- 1.) Media Tower Replacement procedure refer to the latest service methods (**5366639-8EN**) -> **Replacement -> DVD Peripheral Tower Replacement (Single Bay)**
- 2.) Remove the old Media Tower from the site and install the new Media Tower (5270510-22) shipped with upgrade kit.
- 3.) Connect Media Tower cables to Open Console AC Box and Z840 Host Computer.

DESCRIPTION	PART NUMBER	CABLE LENGTH	QTY
USB Cable (PMT)	5315370	2000 mm	2
PMT power cable	5432953-6	3050 mm	1

Table 4-1 Media Tower Cables

Section 3.0 System Config Checking

- 1.) Enter the cursor in the monitor screen, then click on the right button of the mouse to select [UnixShellLeft] or [UnixShellRight] in Utilities window.
- 2.) Check system configuration:

```
{ctuser@hostname} check_config
```
- 3.) Record Product Name and Software Version.
- 4.) Check memory size whether is 32G. If memory size is NOT 32G, please go to [Section 5.0, Memory Installation](#)

Section 4.0 Save System State

Before proceeding with Save System State:

- Make sure to have formatted DVD-RAM disk. Make sure the DVD-RAM disk is not write-protected.

Or

- Have a FAT32 Formatted USB media (either Memory Stick or USB External Drive, minimum of 2 GB).

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 System State DVD-RAM media into the peripheral tower drive or USB media in any of the console's USB ports.
- 2.) Select [Service Desktop]-> [Utilities].
- 3.) Select [System State] for DVD-RAM media or [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 DVD-RAM or USB is ready, select [Yes].
- 7.) When completed select [Dismiss].
- 8.) Remove System State DVD-RAM media from the peripheral tower or USB media from USB port.

Section 5.0 Memory Installation

Please refer to MAR Option Installation Manual (5767680-1EN) to install Memory (8770000-100, shipped with B75552DA) in Z840 Host Computer

Section 6.0 Load From Cold Procedure

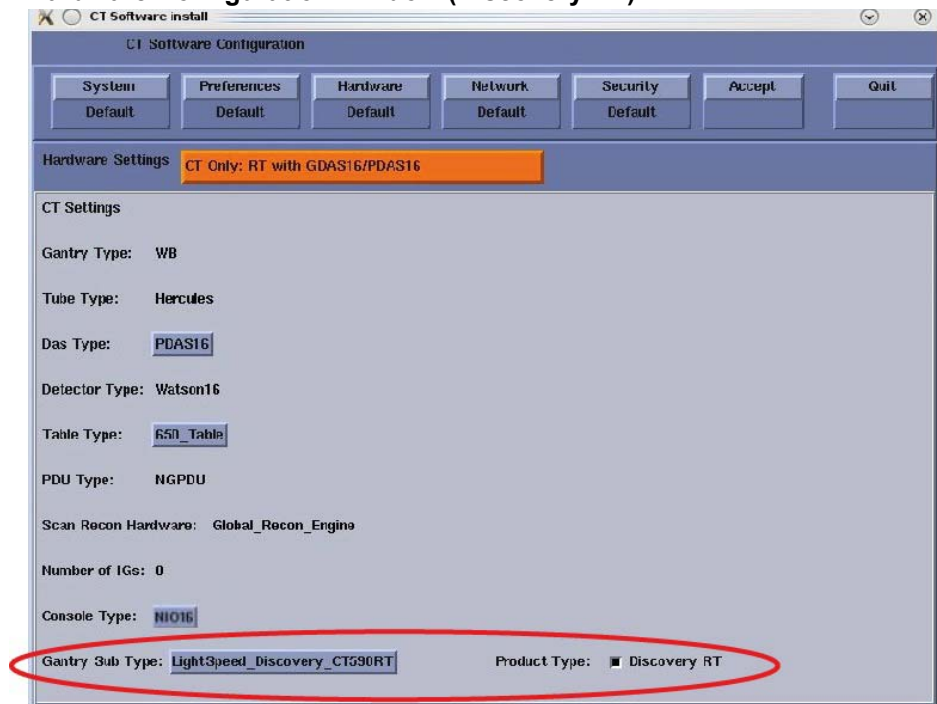
6.1 LFC Procedure

Detail LFC procedure refer to **Service Methods (5366638-2EN_r20 or later) -> Software -> LFC Procedure (17BW49.x)**

Note: Please check and select the correct **Gantry Sub Type** in CT Software Configuration -> Hardware after loading system INFO.

- Discovery RT
For Discovery RT, **MUST** toggle Product Type - Discovery RT [ON] and select "LightSpeed_Discovery_CT590RT" as Gantry Sub Type.

Figure 4-1 Hardware Configuration Window (Discovery RT)



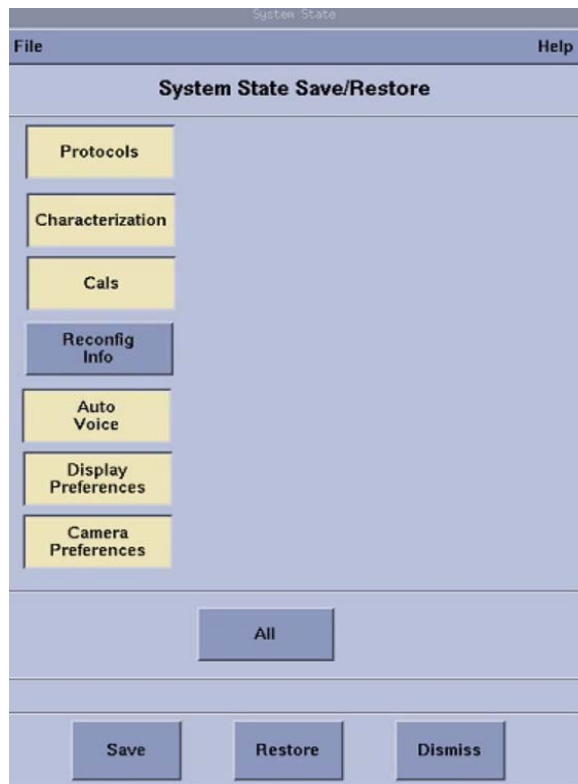
6.2 Restore System State



NOTICE All options need apply new e-license through e-license website (<http://eLicense.gehealthcare.com/eLicense/>) when OC upgrade to Z840 Computer.

- 1.) Insert a previously saved System State DVD-RAM Media into the Peripheral Tower DVD-RAM Drive or USB Media in the USB ports
- 2.) Wait until the DVD-RAM Drive or USB Media is ready
- 3.) Select the [Service] icon to access the CSD (Common Service Desktop).
- 4.) Select: [Utilities].
- 5.) Select: [System State] for DVD-RAM Media or [System State - USB] for USB Media. The System State Save/Restore screen appears.
- 6.) Select [All].
- 7.) Click [Reconfig Info] after select [All], See below illustration.

Note: Restoring The Info file will cause problems displaying the CSD (Common Service Desktop)



- 8.) Select [Restore]. The Restore System State box appears.
- 9.) Select [Yes].
- 10.) Verify that the "Restore" of System State was successful. If not, restore the System State again. A message at the end of the System State Log window should display: Restore System State Completed Successfully.

Note: Please ignore any SwOption Error information during restoring the System State

- 11.) When completed, select [Cancel].
- 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
- 12.) Select [Yes] when the Scan Hardware Reset pop-up appears.
- 13.) When completed, select [Dismiss].
- 14.) Remove System State DVD-RAM disk from the DVD Peripheral Tower or USB Media from USB port and place in a safe location.
- 15.) Reboot the Operators Console by selecting [Shutdown] Desktop, then select [Restart] in the Attention Window.
- 16.) Verify Restore System State
 - a.) Visually verify that the system has the correct configuration and preference settings by opening a Terminal Window.
 - b.) Execute script “reconfig” and manual reset system info.

Section 7.0 Finalization

7.1 Flash Download

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

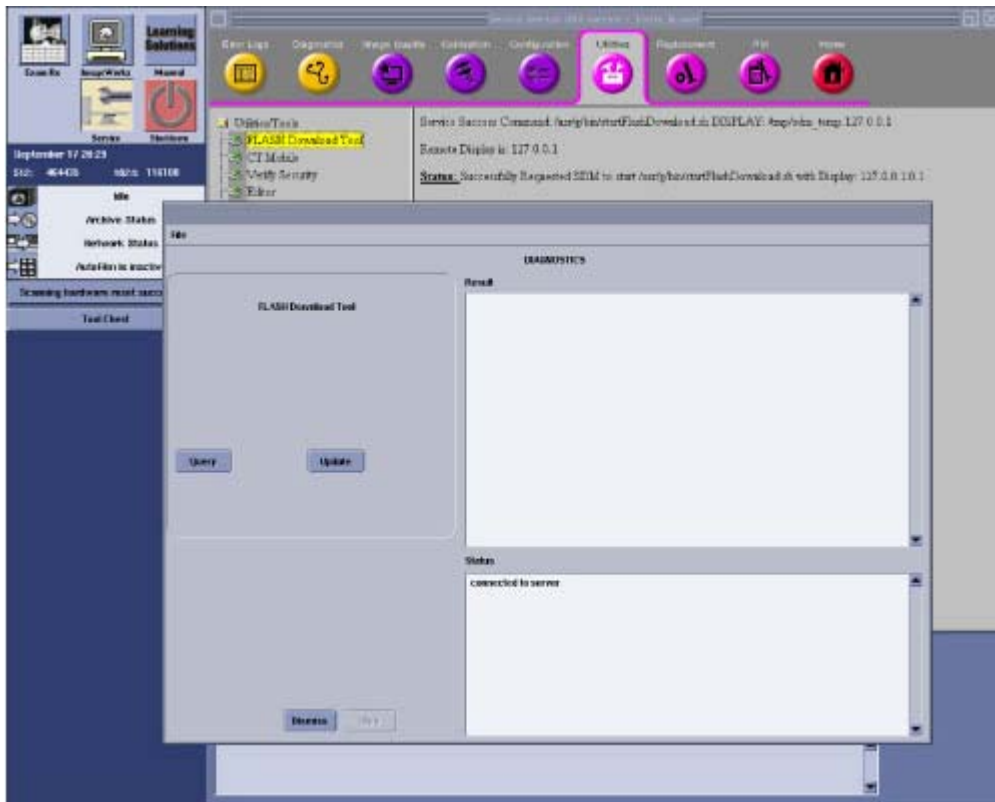
- 1.) Perform the Flash Download Utility found on the Common Service Desktop - Utilities Tab, select [Flash Download].

Figure 2 Common Service Desktop - Utilities Tab, Flash Download



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

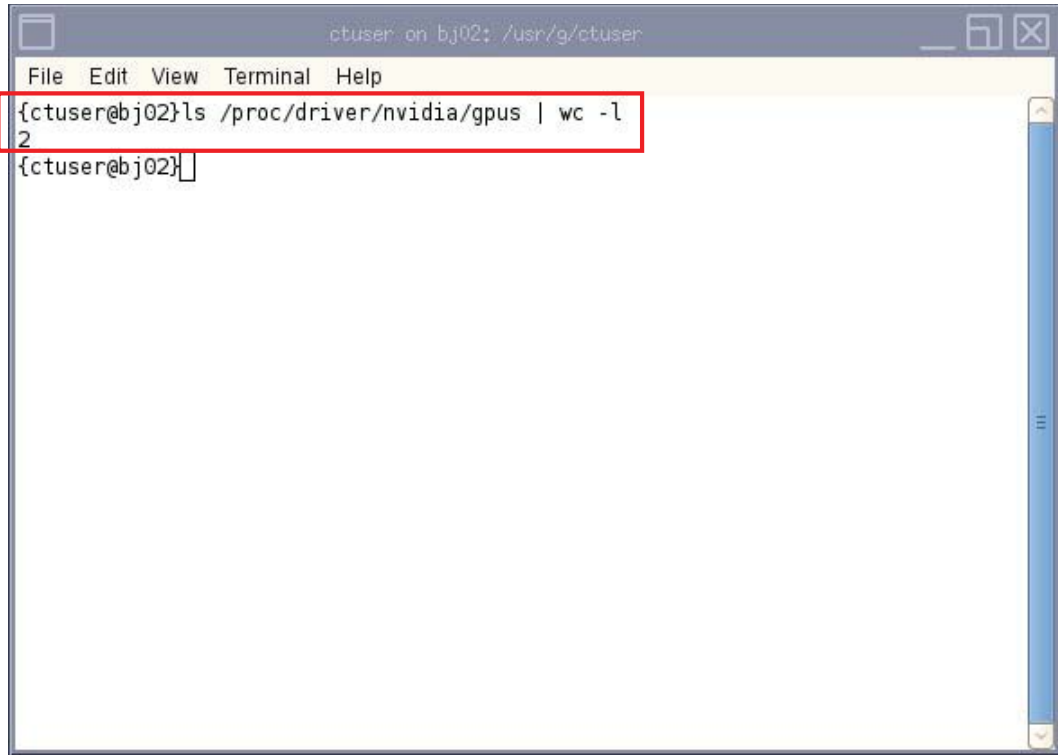
Figure 3 Flash Download Windows



- 3.) Once the Gantry Hardware Flash Downloads successfully, select [Dismiss].
- 4.) Close the Common Service Desktop.

7.2 Check GPU Card

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



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

7.3 System Checking

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

7.4 Save System State

Refer to [Section 4.0, Save System State](#) to save the new system state after system function is normal.

7.5 Old Console Disposal

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Return Ship to:
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Attn: Asset Recovery Leader, Harvest
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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	

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Appendix A

Multi Upgrade for Site

Section 1.0 Overview

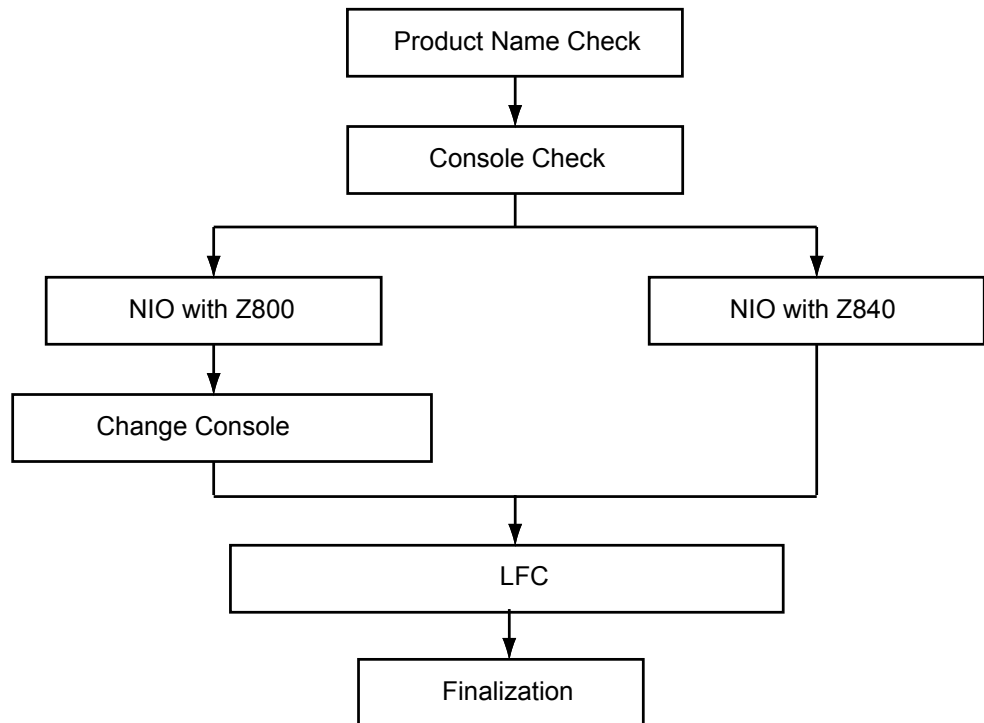
If the site configuration doesn't included in the previous upgrade, please check the console type to decide if a console replacement is necessary.

For multi upgrade site, follow the basic flowchart to check and upgrade to latest software version.

Product Name need to be keep original setting, that's why the site need to do LFC

Note: Software 17BW49.X works on NIO with HP Z840 or OPENOC with HP Z840 configuration.

Figure A-1 Multi Upgrade flowchart



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