# What you need to know to do successful IBM i upgrades to 7.1, 7.2, 7.3

Pete Massiello

iTech Solutions

pmassiello@itechsol.com

203-744-7854

iTech Solutions because IBM i (AS/400s) don't come with System Administrators

# In this session

We are going to run through all the steps required to do an upgrade: from when you initially start thinking about the upgrade, what you need to do to prepare for the upgrade, issues & concerns to address before we start the upgrade, the actual upgrade, and then the verification and conversions afterward.

A successful upgrade is one which the users don't know you worked all weekend, and they don't realize anything has changed until <u>you</u> start rolling out the new features and functions.

# What we will cover…

- Map, starting, and documentation
- Analyze Object Conversion
- Release Mapping
- HMC, FSP, firmware, & IBM i
- Models
- Required PTFs, Resaves, and License Keys
- Image Catalogue & Preparing
- Right before the upgrade
- The Upgrade
- Verification
- Conversions & Afterwards

# What we will cover…

- Map, starting, and documentation
- Analyze Object Conversion
- Release Mapping
- HMC, FSP, firmware, & IBM i
- Models
- Required PTFs, Resaves, and License Keys
- Image Catalogue & Preparing
- Right before the upgrade
- The Upgrade
- Verification
- Conversions & Afterwards

# Introduction - MAP
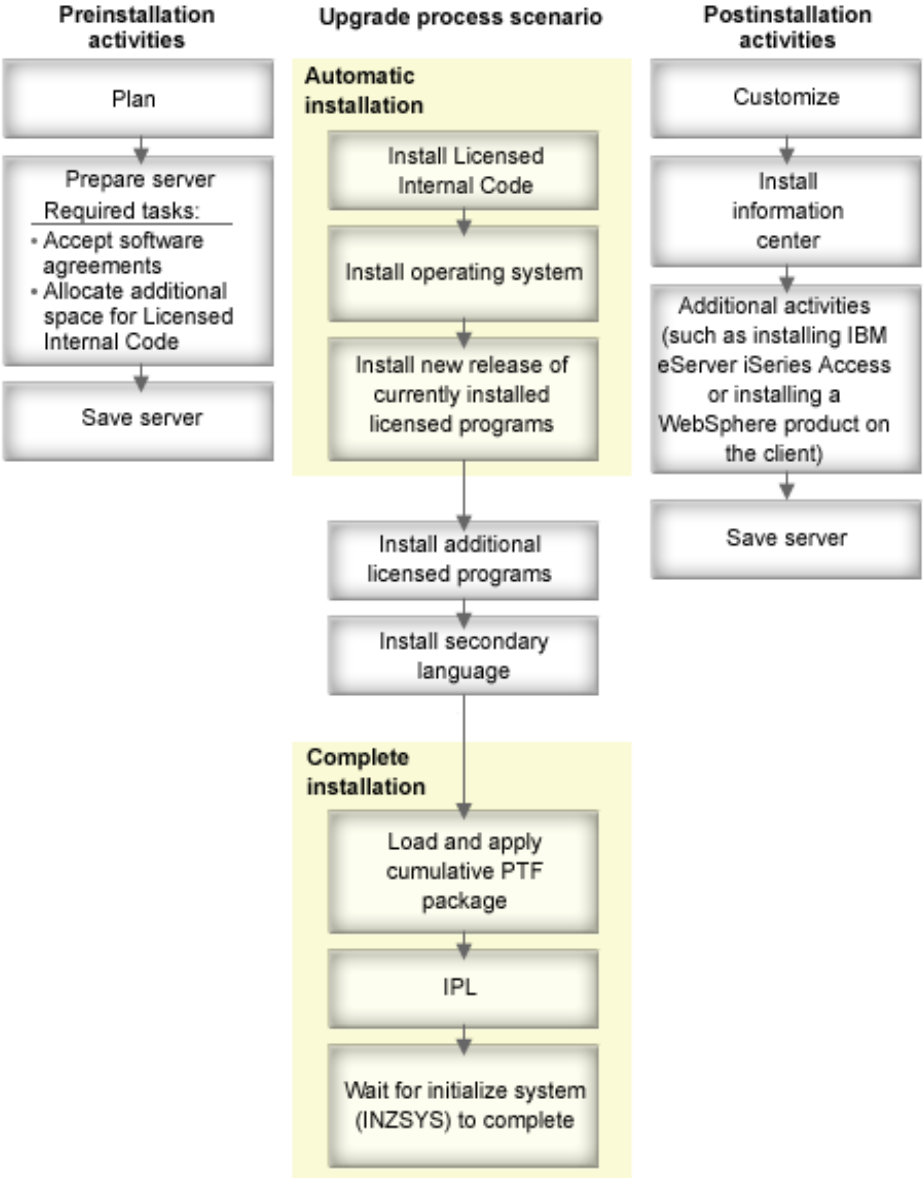


UNITED STATES OF AMERICA

# IBM i Roadmap

## IBM i Roadmap

| 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | | |

**7.1**

**7.1 TRs**

**7.2**

**7.1 and 7.2 TRs**

**7.3**

i next

i next+1

**IBM i 7.3**
* Announce April 12, 2016
* GA April 15, 2016

**IBM i 7.2 TR4**
* Announce April 12, 2016
* GA May 20, 2016

** All statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.

© 2014, 2015 International Business Machines Corporation

itechsol.com

# Upgrade Map

**Preinstallation activities**

Plan

Prepare server
Required tasks:
- Accept software agreements
- Allocate additional space for Licensed Internal Code

Save server

**Upgrade process scenario**

**Automatic installation**

Install Licensed Internal Code

Install operating system

Install new release of currently installed licensed programs

Install additional licensed programs

Install secondary language

**Complete installation**

Load and apply cumulative PTF package

IPL

Wait for initialize system (INZSYS) to complete

**Postinstallation activities**

Customize

Install information center

Additional activities (such as installing IBM eServer iSeries Access or installing a WebSphere product on the client)

Save server

itechsol.com

# What you need before you start

- Have your Business Partner order 7.1, 7.2, or 7.3 about 6 weeks before your planned upgrade date.

- Can also download software.

- License Keys.

- Order PSP PTF V5R4: SF98540 6.1: SF98610 7.1: SF98710 7.2: SF98720 7.3: SF98730

- i5/OS V5R4 CDs, 6.1, 7.1, 7.2, & 7.3 primarily on DVDs.

- Manuals.

- PTFs order about 2 weeks before the upgrade.

- Save Media for backups

- Approximately 6 hours of Dedicated system time.

- Bottle of Tums (Optional)

**V5R4: SC41-5120-09    7.1: SC41-5120-11**
**6.1: SC41-5120-10    7.2: SC41-5120-12**
**7.3 SC41-5120-13**

IBM i
Version 7.3

*IBM i and related software*
*Installing, upgrading, or deleting IBM i*
*and related software*

# Manual – Memo to Users

IBM i Memo to Users
Version 7.3

*Memo to Users*

itechsol.com

# Example of a change in Memo to Users

- End TCP/IP (ENDTCP)

To allow time for these commands to process, two Delay Job (DLYJOB) commands are issued. A total of 10 minutes delay is added before the End Subsystem (ENDSBS) command is issued.

## SAVLIB and SAVCHGOBJ changes for library QUSRSYS

Whenever library QUSRSYS is saved with the Save Library (SAVLIB) or Save Changed Objects (SAVCHGOBJ) commands, the current system information is retrieved and saved. The system information saved is the same data which is retrieved by the Retrieve System Information (RTVSYSINF) command. If a system needs to be reloaded from distribution media, the system information can be updated by restoring the user information and then running UPDSYSINF LIB(QUSRSYS). Since the RTVSYSINF command is issued during a SAVLIB or SAVCHGOBJ command, status messages sent by RTVSYSINF are displayed and there will be additional completion messages associated with the RTVSYSINF command appearing in the joblog. Additionally, there might be a slight increase in the time required for the SAVLIB or SAVCHGOBJ commands as a result of retrieving and saving the system information.

## C and C++ changes

## C language runtime changes

## STRCHR() function changes

itechsol.com

# What we will cover…

- Map, starting, and documentation
- Analyze Object Conversion
- Release Mapping
- HMC, FSP, firmware, & IBM i
- Models
- Required PTFs, Resaves, and License Keys
- Image Catalogue & Preparing
- Right before the upgrade
- The Upgrade
- Verification
- Conversions & Afterwards

# ANZOBJCVN

- MOST IMPORTANT STEP Crossing the 6.1 boundry
  - 2 Months before: Run ANZOBJCVN to see what issues you might have .
- For V6R1, unique conversions will occur with programs in libraries, Java™ programs in directories, spooled files, and integrated file system names in files systems that are not case-sensitive. Before you upgrade to a new release, it is strongly recommended that you gather information about specific object types on your system.

- Going from V5R4 to 7.1 (Skipping 6.1) requires you to perform this as well.

**Warning**

# Verify 3ʳᵈ Party Software

Vendor     Product       Release        Libraries          Helpline     Serial# Dependent

# What we will cover…

- Map, starting, and documentation
- Analyze Object Conversion
- Release Mapping
- HMC, FSP, firmware, & IBM I
- Models
- Required PTFs, Resaves, and License Keys
- Image Catalogue & Preparing
- Right before the upgrade
- The Upgrade
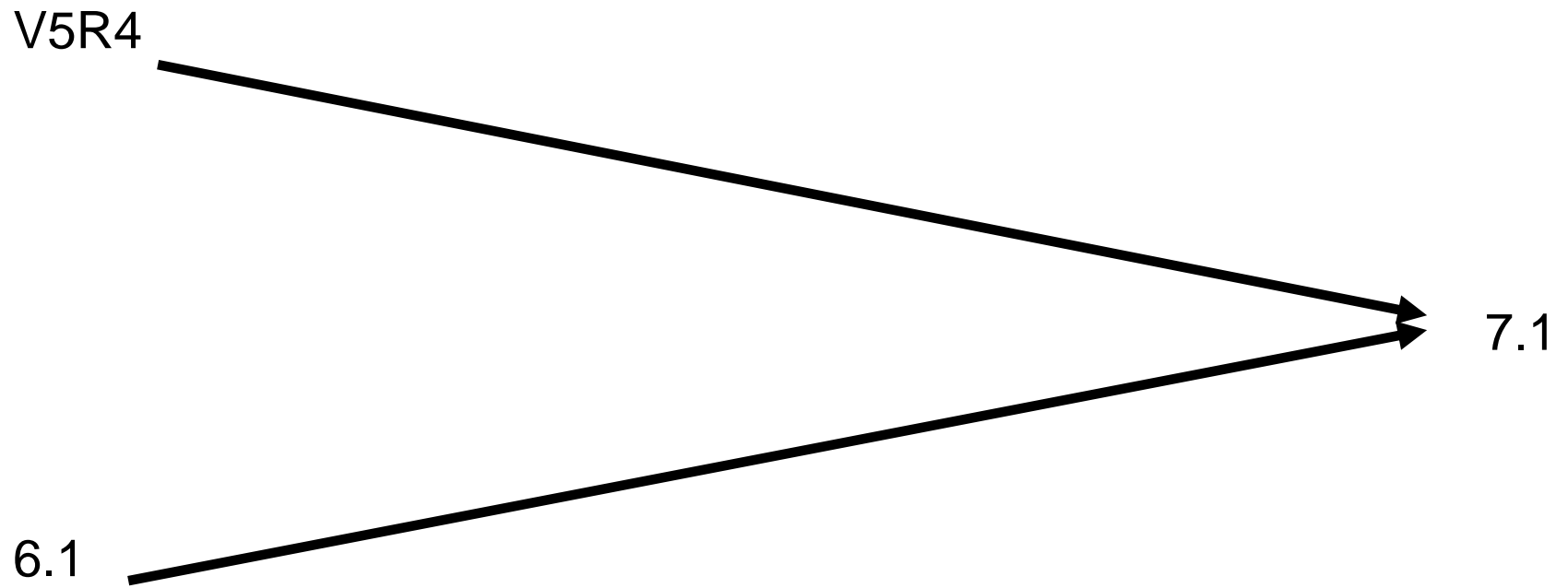- Verification
- Conversions & Afterwards

# Planning

- Make sure you read both those manuals and understand the changes in the new release.
- PTF for Latest issues
- V5R4 – SF98540
- V6R1 – SF98610
- V7R1  - SF98710
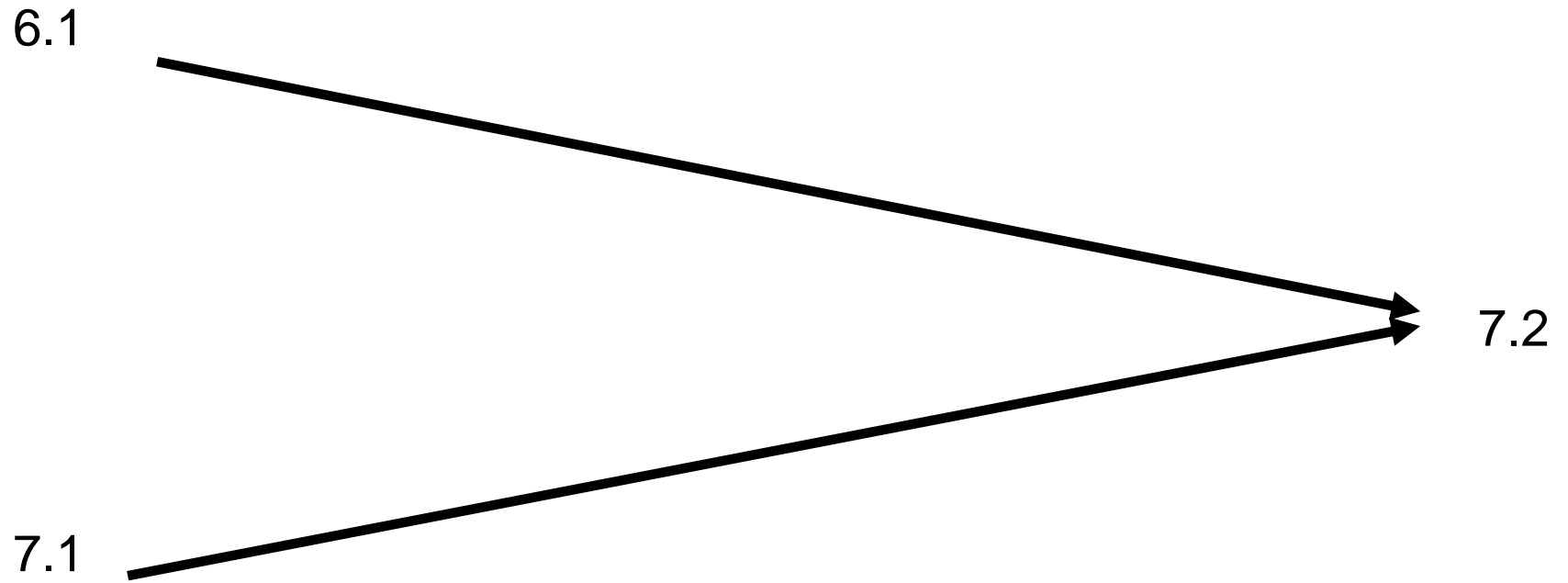- V7R2  - SF98720
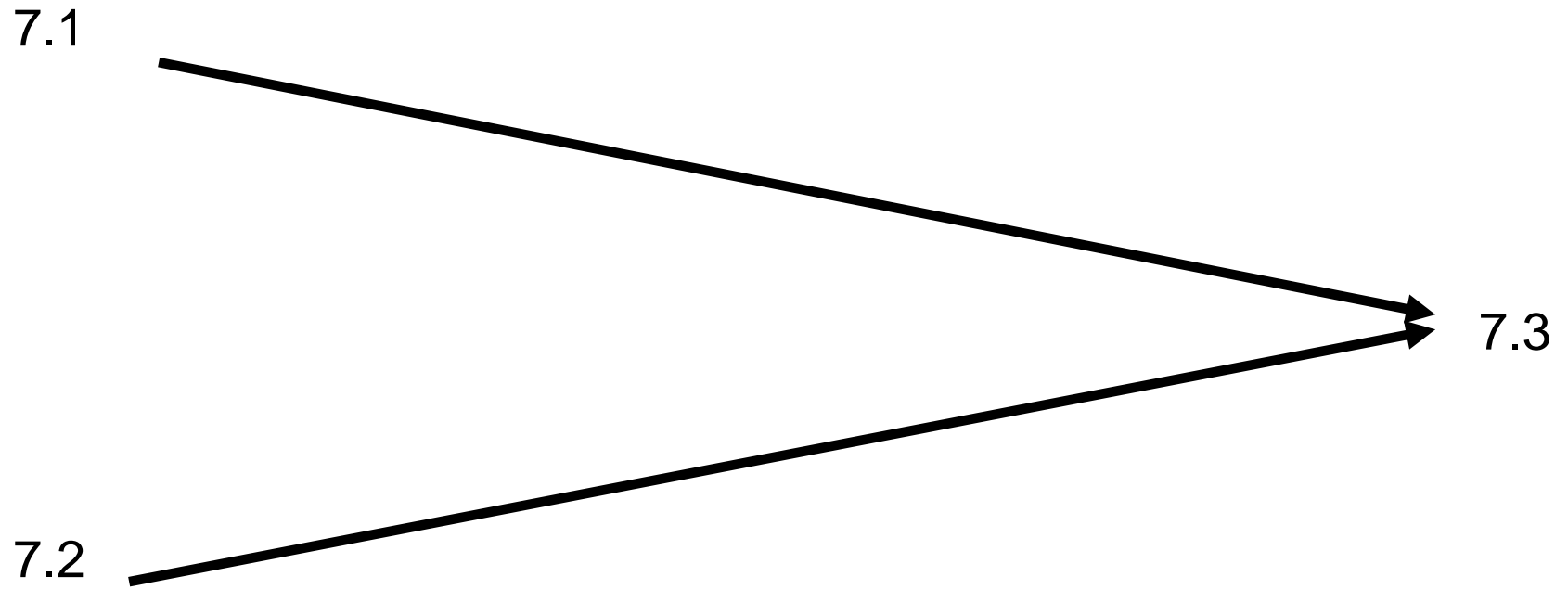- V7R3 – SF98730

# Valid Upgrade paths IBM i 6.1

V5R3

V5R4

6.1 or 6.1.1
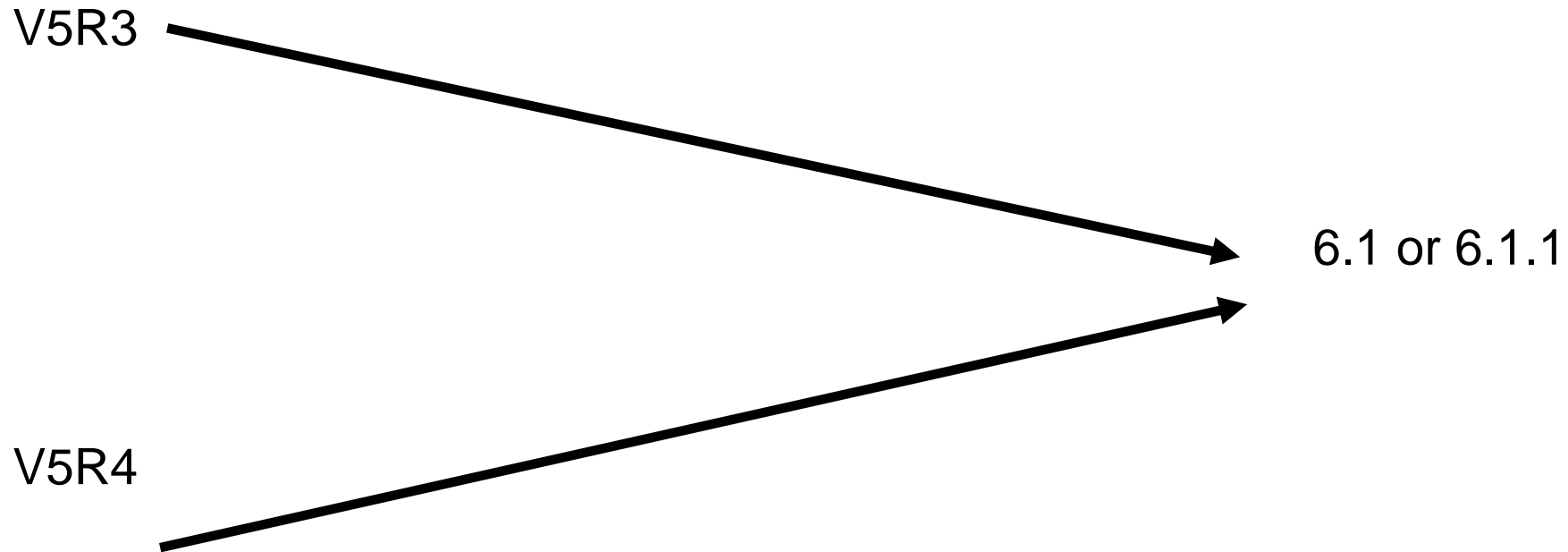
# Valid Upgrade paths IBM i 7.1

V5R4

6.1

7.1

# Valid Upgrade paths IBM i 7.2

6.1

7.1

7.2

# Valid Upgrade paths IBM i 7.3

7.1

7.2

7.3

# Release Support

| Release | Announce date* | GA date* | Announce End of Marketing date* | Effective End of Marketing date* | End of Program Support* | Program Support Extension Available† |
|---------|---------|---------|---------|---------|---------|---------|
| V4R3 | 09/01/1998 | 09/11/1998 | 02/15/2000 | 12/29/2000 | 01/31/2001 | |
| V4R4 | 02/09/1999 | 05/21/1999 | 02/13/2001 | 05/31/2001 | 05/31/2001 | 11/30/2001 |
| V4R5 | 05/22/2000 | 07/28/2000 | 02/12/2002 | 07/02/2002 | 07/31/2002 | 12/31/2002 |
| V5R1 | 04/23/2001 | 05/25/2001 | 07/29/2003 | 11/21/2003 | 09/30/2005 | |
| V5R2 | 06/04/2002 | 08/30/2002 | 02/08/2005 | 10/01/2005 | 04/30/2007 | |
| V5R3 | 05/04/2004 | 06/11/2004 | 02/06/2007 | 01/04/2008 | 04/30/2009 | 04/30/2013 |
| V5R4 (5.4.x) | 01/31/2006 | 02/14/2006 | 01/27/2009 | 05/27/2011 | 09/30/2013 Note 2 | 09/30/2016 Note 3 |
| 6.1.x | 01/29/2008 | 03/21/2008 | 09/09/2014 | 12/09/2014 | 09/30/2015 Note 2 | 09/30/2018 Note 3 |
| 7.1 | 04/13/2010 | 04/23/2010 | | | 09/30/17 | 04/30/18 |
| 7.2 | 04/28/2014 | 05/02/2014 | | | Note 1 | |
| 7.3 | 04/12/2016 | 04/15/2016 | | | Note 1 | |

# Support:6.1 & 6.1.1 ended 09/30/2015, 7.1 ends 4/30/18

## Release upgrade and support information

| Release[1] | End of support | Upgrade to V5R4 | Upgrade to IBM i 6.1 | Upgrade to IBM i 7.1 | Upgrade to IBM i 7.2 |
|---|---|---|---|---|---|
| V5R3 | 30 Apr 2009 | Withdrawal date 27 May 2011 | Withdrawal date to be announced | | |
| V5R4 | 30 Sep 2013 | - | Withdrawal date to be announced | Withdrawal date to be announced | |
| IBM i 6.1 | 30 Sep 2015 | - | - | Withdrawal date to be announced | |
| IBM i 7.1 | To be announced | - | - | - | Withdrawal date to be announced |
| IBM i 7.2 | To be announced | - | - | - | - |

[1] Upgrades from previous software releases not shown in this table are no longer available. For more information, go to Release life cycle.

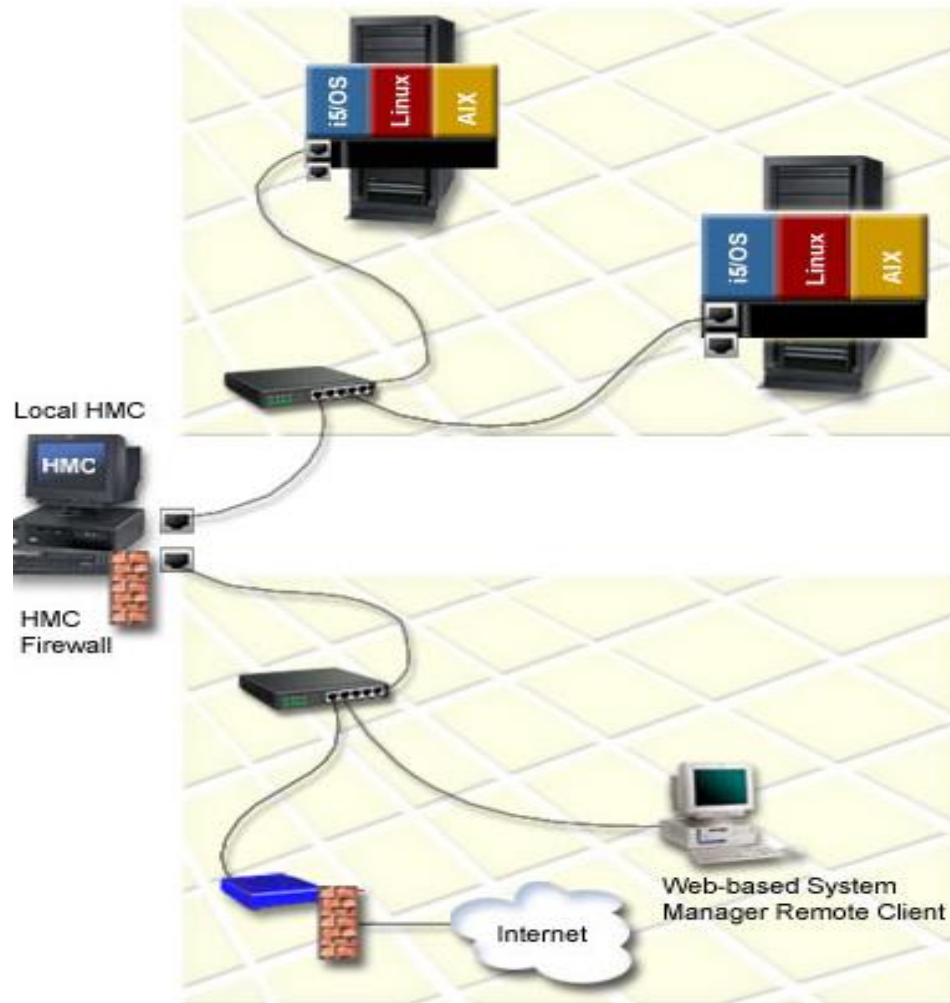itechsol.com

# Skipping a release

- Going from 7.1 to 7.3 must read 7.2 memo to users
- What if you are at 6.1?
- What if you are at V5R4
- What if you are at earlier than V5R4 (get more tums)

- Note: V5R3M5 of LIC uses V5R3M0 of i5/OS
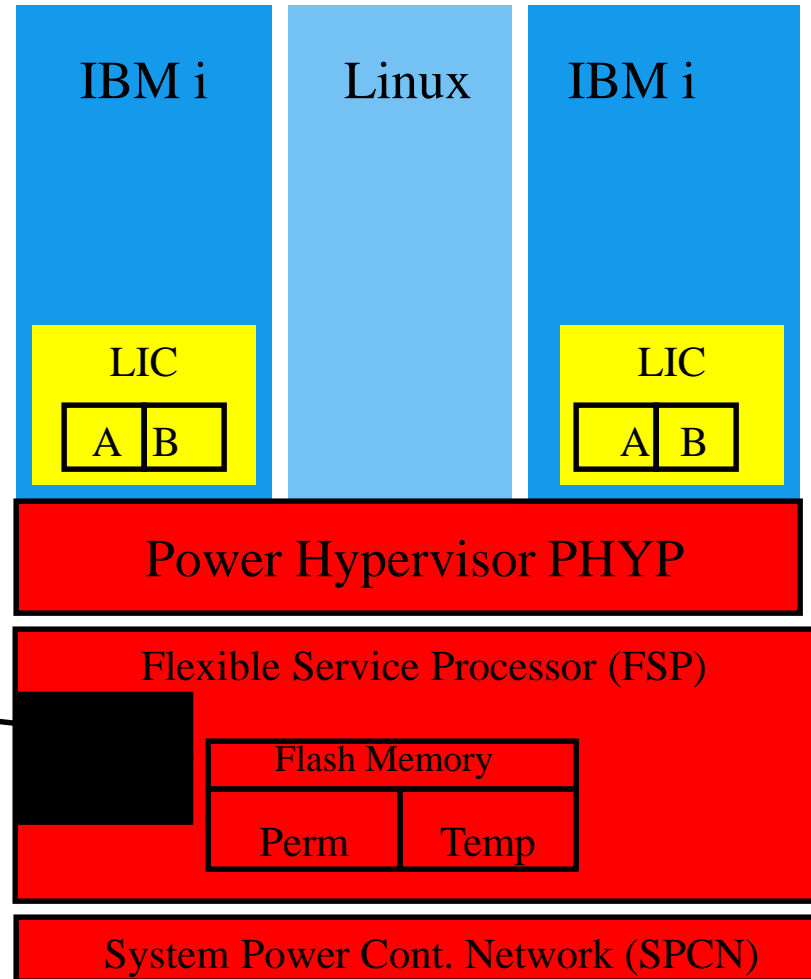  V5R4M5 of LIC uses V5R4M0 of i5/OS
  6.1.1 of LIC uses 6.1 of IBM i

# What we will cover…

- Map, starting, and documentation
- Analyze Object Conversion
- Release Mapping
- HMC, FSP, firmware, & IBM i
- Models
- Required PTFs, Resaves, and License Keys
- Image Catalogue & Preparing
- Right before the upgrade
- The Upgrade
- Verification
- Conversions & Afterwards

# HMC, FSP, i5/OS

# i5/OS, FSP, & HMC



IBM i | Linux | IBM i

LIC
A B

LIC
A B

Power Hypervisor PHYP

Flexible Service Processor (FSP)

Flash Memory

Perm | Temp

System Power Cont. Network (SPCN)

HMC

HMC Firewall

# Order of Upgrades

- Upgrade the HMC
- Upgrade the FSP firmware
- Upgrade i5/OS & LIC

# Firmware Requirements (1 of 2)

- 6.1.0 of IBM i requires a minimum Firmware of:
  - Power5 - SF240_332
  - Power6 - EM320_040, EL320_040, EH330_034
  - Power7 - Not supported
- 6.1.1
  - Power5 – SF240_332
  - Power6 – EM320_040, EL320_040, EH330_034
  - Power7 – AL710_043
- 7.1.0
  - Power5 – SF240_332
  - Power6 - EM320_040, EL320_040, EH330_034
  - Power7 – AL710_043
  - Power8 – SV810_054

Checklist

# Firmware Requirements (2 of 2)

- 7.2.0
  - Power5 – Not Supported
  - Power6 - EM320_040, EL320_040, EH330_034, EA320_040
  - Power7 – AL710_043, AM710_065, AA710_083, AH720_064
  - Power8 – SV810_054

- 7.3.0
  - Power5 – Not Supported
  - Power6 – Not Supported
  - Power7 – AL710_043, AM710_065, AA710_083, AH720_064
  - Power8 – SV810_054

**Checklist**

# HMC & FSP Code Combinations Power 8

| Server MTM 8286-41A | System firmware | | |
|---|---|---|---|
| HMC and HMC Virtual Appliance | SV840_056 FW840.00 SV840_079 FW840.10 SV840_087 FW840.11 | SV830_048 FW830.00 SV830_068 FW830.10 SV830_075 FW830.11 SV830_086 FW830.20 (2) | SV810_054 FW810.00 SV810_058 FW810.01 SV810_059 SV810_061 FW810.02 SV810_081 FW810.10 SV810_087 FW810.11 SV810_101 FW810.20 SV810_108 FW810.21 SV810_124 FW810.30 SV810_126 FW810.31 SV810_133 FW810.33 SV810_146 FW810.44 |
| V8 R840 V8 R840 SP1 | Supported | Supported | Supported |
| V8 R830 V8 R830 SP1 V8 R830 SP2 | Unsupported | Supported | Supported |
| V8 R820 V8 R820 SP1 V8 R820 SP2 | Unsupported | Unsupported | Supported |
| V8 R810 V8 R810 SP1 V8 R810 SP2 V8 R810 SP3 (1) | Unsupported | Unsupported | Supported |

itechsol.com

# HMC & FSP Code Combinations Power 7

| Server MTM 8202-E4D | System firmware | |
|---|---|---|
| **HMC and HMC Virtual Appliance** | AL770_076<br>AL770_090<br>AL770_092<br>AL770_098<br>AL770_101<br>AL770_109<br>AL770_110 | AL770_032<br>AL770_038<br>AL770_048<br>AL770_052<br>AL770_062<br>AL770_063 |
| **V8 R840**<br>**V8 R840 SP1** | Supported | Supported |
| **V8 R830**<br>**V8 R830 SP1**<br>**V8 R830 SP2** | Supported | Supported |
| **V8 R820**<br>**V8 R820 SP1**<br>**V8 R820 SP2** | Supported | Supported |
| **V8 R810**<br>**V8 R810 SP1**<br>**V8 R810 SP2**<br>**V8 R810 SP3 (1)** | Supported | Supported |
| **V7 R790**<br>**V7 R790 SP1**<br>**V7 R790 SP2**<br>**V7 R790 SP3 (2)** | Supported | Unsupported |
| **V7 R780**<br>**V7 R780 SP1**<br>**V7 R780 SP2 (3)** | Supported | Supported |
| **V7 R770**<br>**V7 R770 SP1**<br>**V7 R770 SP2**<br>**V7 R770 SP3**<br>**V7 R770 SP4 (4)** | Supported | Supported |

itechsol.com

# DSPFMWSTS: V5R4M5 and above

```
Session A - [24 x 80]
File  Edit  View  Communication  Actions  Window  Help

                          Display Firmware Status

Service partition . . . . . . . . . . . . . . :     Yes
Firmware update policy  . . . . . . . . . . :     *OPSYS
Server IPL source . . . . . . . . . . . . . :     Temporary
Firmware product ID/release . . . . . . . . :     5733905   V1R1M0
Server IPL required . . . . . . . . . . . . :     No




            --Server firmware--    -Operating system--
            Fix          PTF       Fix          PTF       Update
Copy        pack         ID        pack         ID        Status
*ACTIVE     SF240_362    MH01144                           
*TEMP       SF240_362    MH01144   SF240_362    MH01144   None
*PERM       SF240_338    MH01079   SF240_338    MH01079   None


                                                          Bottom

Press Enter to continue

F3=Exit    F5=Refresh    F12=Cancel    F14=Display firmware PTFs

MA    a                                                    01/001
```

# What we will cover…

- Map, starting, and documentation
- Analyze Object Conversion
- Release Mapping
- HMC, FSP, firmware, & IBM i
- Models
- Required PTFs, Resaves, and License Keys
- Image Catalogue & Preparing
- Right before the upgrade
- The Upgrade
- Verification
- Conversions & Afterwards

**http://www-947.ibm.com/systems/support/i/planning/upgrade/osmapping.html**

| Systems | IBM i 7.1 | IBM i 7.2 | IBM i 7.3 |
|---|---|---|---|
| POWER8<br>S814, S822 (VIOS only), S824, E870, E880 | ✓ | ✓ | ✓ |
| POWER7/7+ Servers<br>Power 710, 720, 730, 740, 750, 760, 770, 780, 795 | ✓ | ✓ | ✓ |
| POWER7/7+ Blades and Compute Nodes<br>PS700/701/702/730/704, PureFlex p260/460 | ✓ | ✓ | |
| POWER6/6+<br>520, 550, 560, 570, 595, JS12/22, JS23/43 | ✓ | ✓ 1 | |
| POWER5/5+<br>515, 520, 525, 550, 570, 595 | ✓ | | |

Note 1 – no IOP or HSL support

itechsol.com

# Models Not supported at Release B6000423

V5R4: 150, 170, 250, 400, 40S, 436, 53S, 500, 510, 530, 50S, 600, 620, 640, 650, 720, 730, 740, S10, S20, S30, S40, SB1

- V6R1: 270, 820, 830, 840, SB2, SB3 or earlier members of the iSeries family.

- V7R1: 800, 810, 825, 870, and 890.

- V7R2: POWER5 – 9405-520, 9406-520, 525, 550, 570, 595, and 9407-515. PLUS POWER6 with POWER5 Draws

- V7R3: All POWER6, Power7 Blades

Caution

# IBM 7.2 will NOT support

- RIO/HSL Loops or draws on POWER6 (0595, 5095, 0694, 0697, 5790, 5094, 5088, 0588, 5791)

- Does not support IOPs or IOP based adapters on POWER6.

- No Twinax

- Websphere Application Server V7.0, Upgrade to V8.0 (fix pack 8 which is 8.0.0.8) or V8.5 (fix pack 2 which is 8.5.5.2) or later.

- Java 1.4.2 (option 13) and 5.0 (option 8 & 9).  The default is now Java 7.1 32bit (option 14).

Caution

# IBM 7.3 issues that need to be addressed

1) **POWER6**
2) **LAN Console**
3) **Increase License Internal Code Space**
4) **Required PTFs**
5) **IBM i NetServer Shared Printer Changes**
6) **Secure sockets Layer (SSL) and Transport Layer Security (TLS) Changes**
7) **Supported Versions Of:**
   7.1) **Java**
   7.2) **Domino**
   7.3) **WebSphere**

**Caution**

itechsol.com

# i5/OS, OS/400 support for Domino

| | IBM i 7.3 [2] | IBM i 7.2 | IBM i 7.1 [1] | IBM i 6.1 [1] and i 6.1.1 [3] |
|---|---|---|---|---|
| Domino 9.0.1 | X | X | X | X |
| Domino 9.0 | Not supported | Not supported | X | X |
| Domino 8.5.1, 8.5.2, 8.5.3 | Not supported | Not supported | X | X |
| Domino 8.5 | Not supported | Not supported | Not supported | X |

| | IBM i 7.2 | IBM i 7.1 [1] | IBM i 6.1 [1] and i 6.1.1 | IBM i 5.4 [3] and i 5.4.5 |
|---|---|---|---|---|
| Domino 9.0.1 | X | X | X | Not supported |
| Domino 9.0 | Not supported | X | X | Not supported |
| Domino 8.5.1, 8.5.2, 8.5.3 | Not supported | X | X | X [2] |
| Domino 8.5 | Not supported | Not supported | X | X [2] |
| Domino 8.0.1, 8.0.2 | Not supported | Not supported | X [2] | X |
| Domino 8.0 | Not supported | Not supported | Not supported | X |

itechsol.com

# Load Source > 17GB for 5.4, 6.1, & 7.1

```
Session A - [24 x 80]
File  Edit  View  Communication  Actions  Window  Help

                        Work with Disk Status                    AS400
                                                      02/26/07   11:13:27
Elapsed time:     00:00:00


              Size     %     I/O   Request   Read   Write   Read   Write    %
Unit  Type    (M)     Used   Rqs  Size (K)   Rqs    Rqs     (K)    (K)     Busy
   1  4326   26373   33.3     .0       .0     .0     .0      .0     .0       0
   2  4326   26373   28.0     .0       .0     .0     .0      .0     .0       0
   3  4326   26373   28.0     .0       .0     .0     .0      .0     .0       0
   4  4326   26373   28.0     .0       .0     .0     .0      .0     .0       0




                                                                    Bottom
Command
===>  _____
 F3=Exit    F5=Refresh    F12=Cancel    F24=More keys

MA    a              MW                                          22/007
```
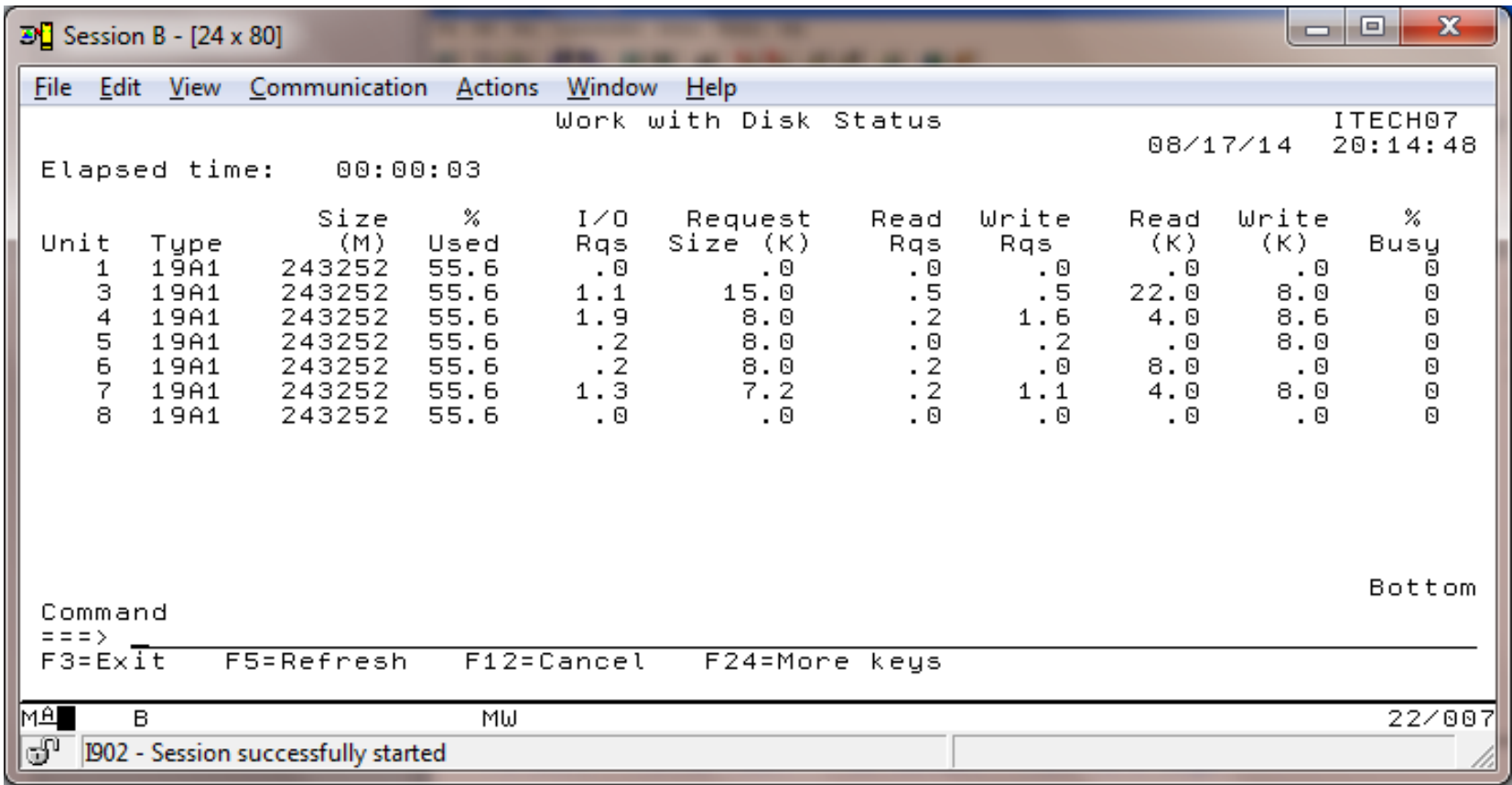
# Load Source > 70GB for 7.2 (7.2 TR1 & 7.3 will support virtuals 35GB)



```
Session B - [24 x 80]

File   Edit   View   Communication   Actions   Window   Help
                          Work with Disk Status                    ITECH07
                                                        08/17/14   20:14:48
Elapsed time:     00:00:03

              Size       %     I/O    Request    Read   Write   Read   Write      %
Unit  Type    (M)      Used    Rqs    Size (K)   Rqs    Rqs     (K)    (K)      Busy
   1  19A1   243252    55.6     .0        .0      .0     .0      .0     .0        0
   3  19A1   243252    55.6    1.1      15.0      .5     .5     22.0    8.0       0
   4  19A1   243252    55.6    1.9       8.0      .2    1.6      4.0    8.6       0
   5  19A1   243252    55.6     .2       8.0      .0     .2      .0     8.0       0
   6  19A1   243252    55.6     .2       8.0      .2     .0      8.0    .0        0
   7  19A1   243252    55.6    1.3       7.2      .2    1.1      4.0    8.0       0
   8  19A1   243252    55.6     .0        .0      .0     .0      .0     .0        0



                                                                       Bottom
Command
===>
F3=Exit     F5=Refresh    F12=Cancel    F24=More keys

MA   B                      MW                                         22/007
  I902 - Session successfully started
```

Minimum of 35 GB for 520-byte sectors (DS8000, virtual disks with VIOS as server)

Minimum of 41 GB (to get 35 GB useable space)  for 512-byte sectors (SVC, Storwize, virtual disks with VIOS VSCSI or IBM i as server)

Minimum of 70 GB for Native-attached SAS/SCSI (Both 520-byte or 4K sectors)

itechsol.com

# If Using Operations Console

- Upgrade Operations console before the IBM i upgrade using the CD/DVD IBM i Access Setup and Operations.

- Correct Card location in CEC

- Use Userid of 11111111 & password of 11111111 for connection of Ops Console during the upgrade

- Direct attach NOT Supported in 7.1.  Convert to LAN Console BEFORE upgrading.

- Twinax not supported at 7.2.

- For 7.3 IBM i Access Console -> Access Client Solutions BEFORE upgrading.


**Stop**

# IBM 7.3 will **NOT** support

- Websphere Application Server V8.0, Upgrade to V8.5 (fix pack 9 which is 8.5.5.9) or later.

- WebSphere MQ version 7.0.1 and lower is not supported. Upgrade to 7.1.0.7 or 8.0.0.4.

- Java 6.0 (option 11 & 12) are no longer supported. The default JVM is now Java 8.0 32bit (option 16).  Just JVM 7 & 8.

**Caution**

# What we will cover…

- Map, starting, and documentation
- Analyze Object Conversion
- Release Mapping
- HMC, FSP, firmware, & IBM i
- Models
- Required PTFs, Resaves, and License Keys
- Image Catalogue & Preparing
- Right before the upgrade
- The Upgrade
- Verification
- Conversions & Afterwards

# Planning

- Verify what you have received is all the software you require.

- Already covered Server levels FSP Code

- You will require loading some PTFs, Check to see if IPL is required.

# List of Required PTFs before upgrading

- Here is the PTF list for going to:
  - V5R3 - APAR II14149        V5R4 – APAR II1413 .
  - 6.1  - APAR II14310         7.1  – APAR II14482
  - 7.2 - https://www.ibm.com/developerworks/community/wikis/home?lang=en#!/wiki/IBM%20i%20and%20Related%20Software/page/Required%20PTFs%20for%20upgrading%20to%20IBM%20i%207.2
  - 7.3 https://www.ibm.com/developerworks/community/wikis/home?lang=en#!/wiki/IBM%20i%20and%20Related%20Software/page/Required%20PTFs%20for%20upgrading%20to%20IBM%20i%207.3

# SF98vrm – READ IT !

4.  17 Aug 2006 Information APAR II14188 contains information

about New Firmware and Software Requirements for

processor upgrades (MES).

3.  29 Jun 2006 If upgrading from Version 5 Release 2.0 to

Version 5 Release 4.0, DO NOT use the option

in the prepare for install menu to allocate License

Internal Code space.  Use the API that is documented

in the Information Center for Version 5 Release 4.0

at  http://publib.boulder.ibm.com/infocenter/iseries/

v5r4/topic/rzahc/allocatespacelic.htm#allocatespacelic

Topic titled: Required: Allocating additional space

for Licensed Internal Code. If using Virtual Media

Install, verify the latest PTFs are installed.

See information APAR II14131 for the latest PTFs

required.

Done   Internet

# CDs – ReSpin or ReSave

- I_BASE_01 – Version

| Resave Identifier | LIC Marker PTF (999) | OS Marker PTF (SS1) | |
|---|---|---|---|
| RSC (LIC 7.3.0) / RS 730-00 | RE17038 | AP16026 | (Has TR-2) |
| RSK (LIC 7.2.0) / RS 720-00 | RE17040 | AP14056 | (Has TR-6) |
| RSS (LIC 7.1.0) / RS 710-10 | RE16082 | AP11067 | (Has TR-11) |
| RSM (LIC 6.1.1) / RS 610-10(XPF) | RE63274 | AP09202 | |
| RSG (LIC 6.1.0) / RS 610-10(XPF) | RE09202 | AP09202 | |
| RSG (LIC 5.4.0) / RS 540-30(XPF) | RE08281 | AP07100 | |
| RSF (LIC 5.4.5) / RS 540-30(XPF) | RE59055 | AP07100 | |
| RSF (LIC 5.3.5) / RS 530-10(XPF) | RE57131 | AP05202 | |

http://www-947.ibm.com/systems/support/i/planning/resave/

DVD installation media for i 7.1, 7.2, & 7.3  - The DVD installation media is consolidated. Previously there were 51 sets of unique language version media. Now there are three sets of multiple language version media.

# License Keys

- No longer come printed with your order
- Locate the Customer packing list from your software order to obtain:
  - Customer number
  - Software Order

Don't Forget

# http://www.ibm.com/eserver/ess



itechsol.com

# Select License Keys you want



itechsol.com

# These are your Keys



itechsol.com

# Enter each Key



itechsol.com

# Confirmation on Key



```
Session A - [24 x 80]
File  Edit  View  Communication  Actions  Window  Help

                              Command Entry                        AS400
                                                    Request level:    6
     Previous commands and messages:
       > ADDLICKEY PRDID(5722SS1) LICTRM(V5R4M0) FEATURE(5050) SERIAL(*LOCAL) LICK
         EY(D5D93F 530D78 E18701) USGLMT(*NOMAX)
         1 license key information records added to repository.


                                                                  Bottom
     Type command, press Enter.
     ===> _____

     _____

     F3=Exit    F4=Prompt    F9=Retrieve    F10=Include detailed messages
     F11=Display full    F12=Cancel    F13=Information Assistant    F24=More keys

MA     a                    MW                                    18/007
```

itechsol.com

# What we will cover…

- Map, starting, and documentation
- Analyze Object Conversion
- Release Mapping
- HMC, FSP, firmware, & IBM i
- Models
- Required PTFs, Resaves, and License Keys
- Image Catalogue & Preparing
- Right before the upgrade
- The Upgrade
- Verification
- Conversions & Afterwards

# Required Prepare for Installation

- Upgrading from V6R1Mx –
  - SI42213, SI53145, SI51661, SI52932

- Upgrading from V7R1M0 –
  - SI59835, SI52927, SI52990, SI59536

- Upgrading from V7R2M0 –
  - SI60073, SI52910, SI52991, SI59534


- Database Cross Reference Errors upgrading to 7.1 & 7.2
  - V6R1Mx: SI45174, SI47823, SI47825

- 7.2 DB Group SF99702 Level 11 (SI60308 or SI60333) upgrading to 7.3
  - V7R2: SI60586 and then CALL QSYS/QQQFIXVW (Restricted state)

# Lets start to Prepare: GO LICPGM



```
LICPGM                    Work with Licensed Programs
                                                    System:    ITECH03

   Select one of the following:

     Manual Install
        1. Install all

     Preparation
        5. Prepare for install

     Licensed Programs
       10. Display installed licensed programs
       11. Install licensed programs
       12. Delete licensed programs
       13. Save licensed programs


                                                          More...
   Selection or command
   ===> 5

   F3=Exit   F4=Prompt   F9=Retrieve   F12=Cancel   F13=Information Assistant
   F16=AS/400 Main menu
   (C) COPYRIGHT IBM CORP. 1980, 2003.
```

# Prepare to Install



```
Session A - [24 x 80]

File  Edit  View  Communication  Actions  Window  Help

                              Prepare for Install

                                                      System:     ITECH03

       Type option, press Enter.
         1=Select

       Opt        Description
        _          Work with licensed programs for target release
        _          Work with licensed programs to delete
        _          List licensed programs not found on media
        _          Display licensed programs for target release
        _          Work with software agreements
        _          Work with user profiles
        _          Verify system objects
        _          Estimate storage requirements for system ASP
        1          Allocate additional space for LIC
        █          Keep disk configuration




                                                                 Bottom

        F3=Exit    F9=Command line    F10=Display job log    F12=Cancel


  MA    a                                                        16/003
     I902 - Session successfully started              Win2PDF on PDFFILE:
```

# Additional Space required on Load Source for 7.2 (& 7.3)

- Increase the space for the licensed internal code prior to upgrading.
- The following PTFs are required to be installed first:
  - 6.1.0 MF59327 & SI51661
  - 6.1.1 MF59328 & SI51661
  - 7.1.0 MF59277
  - 7.2.0 MF59329 (Already Allocated – Check only)
- Call QLPALCSP PARM('V7R2M0'  '0')
- If coming from V5R2 or V5R3M0 (to V5R4) use the API QLPALCSP. (Increases by 4GB)

# Increase License Internal code



itechsol.com

# Increase License Internal code

```
Session A - [24 x 80]

File  Edit  View  Communication  Actions  Window  Help

              Allocate Additional Space for LIC
                                                    System:
The Allocate additional space for LIC option allows you to allocate
additional storage space, if needed, for a planned upgrade of Licensed
Internal Code (LIC).  Either all of the space can be allocated during
the next initial program load (IPL) or part of the space can be
allocated by a background task and then the remaining space can be
allocated during the next IPL.


Background task . . . . :      No
Next IPL  . . . . . . . . :      No



Type choices, press Enter.

  Allocate space for release . . . . . .   *NONE        *NONE, VxRxMx

  Start space allocation . . . . . . . .   *IMMED       *IMMED, *DELAYED


                                                              Bottom
F3=Exit    F5=Refresh    F12=Cancel

MA    a                                                       16/045
```

# Permanently Apply PTFs

- APYPTF LICPGM(*ALL) APY(*PERM) DELAYED(*IMMDLY) IPLAPY(*YES)

- Saves Space

- Can't have any PTFs set for apply when the upgrade starts.

Best Practice

# Document these System Values

- WRKSYSVAL
  - QSYSLIBL _____
  - QUSRLIBL _____
  - QALWOBJRST _____ (Needs to be *All)
  - QVFYOBJRST _____ (Max is 3)
  - QSTRUPPGM _____

- Good time to look at your startup program.

Checklist

# Verify User Profiles & Cross Ref.

```
                          Prepare for Install
                                                      System:     ITECH03

         Type option, press Enter.
           1=Select


         Opt       Description
          _        Work with licensed programs for target release
          _        Work with licensed programs to delete
          _        List licensed programs not found on media
          _        Display licensed programs for target release
          _        Work with software agreements
          _        Work with user profiles
          1        Verify system objects
          █        Estimate storage requirements for system ASP
          _        Allocate additional space for LIC
          _        Keep disk configuration




                                                                    Bottom


         F3=Exit    F9=Command line    F10=Display job log    F12=Cancel
```
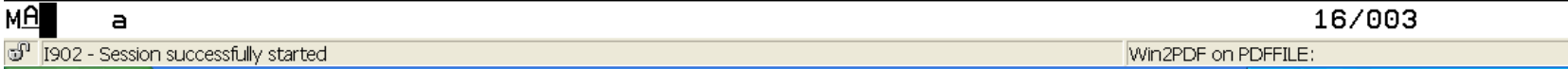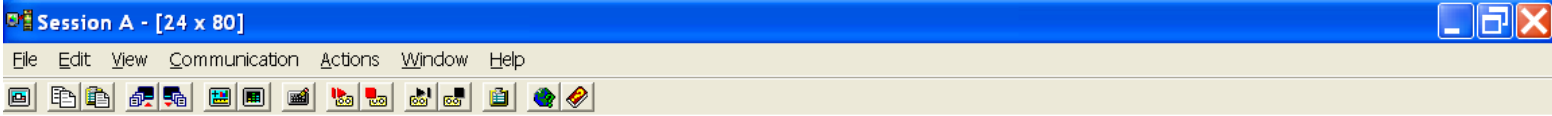
MA        a                                                          14/003

I902 - Session successfully started                    Win2PDF on PDFFILE:

itechsol.com

# QSECOFR & Libraries

- Make sure the QSECOFR profile:
  - Does not have a secondary language
- All IBM Libraries are in the SYSTEM ASP.

- Check for Secondary languages on machine as you will need new versions.

# Compress Job Tables *NONE
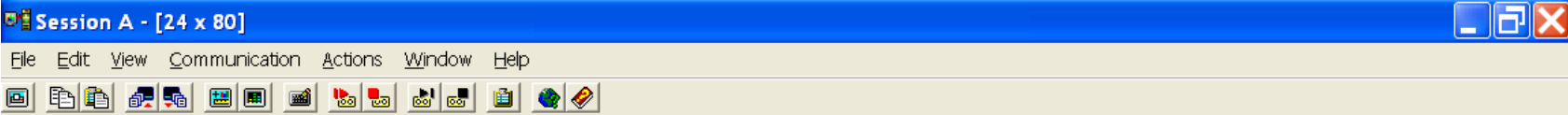
```
Session A - [24 x 80]
File  Edit  View  Communication  Actions  Window  Help

                        Change IPL Attributes (CHGIPLA)

    Type choices, press Enter.


      Restart type . . . . . . . . . .    *SYS          *SAME, *SYS, *FULL
      Keylock position . . . . . . . .    *NORMAL       *SAME, *NORMAL, *AUTO...
      Hardware diagnostics . . . . . .    *MIN          *SAME, *MIN, *ALL
      Compress job tables  . . . . . .    *NONE         *SAME, *NONE, *NORMAL...
      Check job tables . . . . . . . .    *ABNORMAL     *SAME, *ABNORMAL, *ALL, *SYNC
      Rebuild product directory  . . .    *NONE         *SAME, *NONE, *NORMAL...
      Mail Server Framework recovery      *NONE         *SAME, *NONE, *ABNORMAL
      Display status . . . . . . . . .    *ALL          *SAME, *SYS, *NONE...
      Start TCP/IP . . . . . . . . . .    *YES          *SAME, *YES, *NO
      Clear job queues . . . . . . . .    *NO           *SAME, *YES, *NO
      Clear output queues  . . . . . .    *NO           *SAME, *YES, *NO
      Clear incomplete joblogs . . . .    *NO           *SAME, *YES, *NO
      Start print writers  . . . . . .    *YES          *SAME, *YES, *NO
      Start to restricted state  . . .    *NO           *SAME, *YES, *NO




                                                                      Bottom
    F3=Exit    F4=Prompt    F5=Refresh    F12=Cancel    F13=How to use this display
    F24=More keys

 MA       a                                                     05/037
    I902 - Session successfully started                Win2PDF on PDFFILE:
```

itechsol.com

# Arrange the media in this Order

- I_BASE_01
- B29xx_01
- B29xx_02
- B29MM_03
- B29MM_04
- D29xx_01
- D29xx_02
- D29xx_03
- D29xx_04
- D29xx_05
- D29xx_06
- L29xx_01
- L29xx_02
- Any F29xx CDs to follow

xx will be 24 for US English

**DVDs for 6.1**

I_BASE_01

B29xx_01

B29xx_02

F29xx_01

x will be 1 for Americas & western Europe f/c 5817

**DVDs 7.1, 7.2, & 7.3**

I_BASE_01

B_GROUPx_01

B_GROUPx_02

B_GROUPx_03

B_GROUPx_04

B_GROUPx_05

F_MULTI_NLV

F29xx

# Required PTFs Image Catalogues

- Upgrading from V5R3M5 –
  - SI28698, MF42599, MF43355

- Upgrading from V5R4M0 –
  - SI42903, MF51693, MF43154, MF46264, MF47159, MF54341

- Upgrading from V5R4M5 –
  - SI42903, MF53640, MF47160, MF52757, MF53717, MF54314

- Upgrading from V6R1M0 –
  - SI44484, SI57013, MF43198, MF46292, MF47203, MF53927, MF53936, MF53938, MF53949, MF59281

- Upgrading from V6R1M1 –
  - SI44484, SI57013, MF47204, MF51455, MF53864,  MF53865, MF54034, MF5928

- Upgrading from V7R1M0 –
  - SI56159, SI59835, MF50235 MF51411, MF53918, MF53919, MF59277, MF59283 MF60229.    MF60263 (TR9+)

- Upgrading from V7R2M0 –
  - SI60073, SI57187, SI52981, MF59284, MF59329, MF60475.    MF60264 (TR2+)

Don't Forget

itechsol.com

# Create Image Catalogue



Session B - [24 x 80]

File  Edit  View  Communication  Actions  Window  Help

```
                    Create Image Catalog (CRTIMGCLG)

Type choices, press Enter.

Image catalog  . . . . . . . . . .  >  V72UPGRADE      Name
Directory  . . . . . . . . . . . .  >  '/av72upgrade'

Image catalog type . . . . . . . .     *OPT           *OPT, *TAP
Create directory . . . . . . . . .  >  *YES           *YES, *NO
Import image catalog . . . . . . .  >  *NO            *NO, *YES
Catalog ASP threshold  . . . . . .     *CALC          1-99, *CALC, *MAX
Add virtual volumes  . . . . . . .     *NONE          1-256, *NONE



                                                                    Bottom
F3=Exit    F4=Prompt    F5=Refresh    F10=Additional parameters    F12=Cancel
F13=How to use this display         F24=More keys
```

MA   B                        MW                              05/037

I902 - Session successfully started

itechsol.com

# Create Virtual Optical

File   Edit   View   Communication   Actions   Window   Help

```
                    Create Device Desc (Optical) (CRTDEVOPT)

Type choices, press Enter.

Device description . . . . . . . > OPTVRT01      Name
Resource name  . . . . . . . . . > *VRT          Name, *NONE, *VRT...
Device type  . . . . . . . . . .   *RSRCNAME     *RSRCNAME, 632A, 632B, 632C...
Local internet address . . . . .   *NONE         *NONE, *SRVLAN
Online at IPL  . . . . . . . . .   *YES          *YES, *NO
Message queue  . . . . . . . . .   *SYSOPR       Name
  Library  . . . . . . . . . . .   _____    Name, *LIBL, *CURLIB
Text 'description' . . . . . . .   Virtual Optical
_____

                          Additional Parameters

Authority  . . . . . . . . . . .   *CHANGE       Name, *CHANGE, *ALL, *USE...

                                                                       Bottom
F3=Exit    F4=Prompt    F5=Refresh    F12=Cancel   F13=How to use this display
F24=More keys

MA   a                                                                  12/052
```

itechsol.com

# Optical Devices Required



```
Session C - [24 x 80]

File  Edit  View  Communication  Actions  Window  Help

                        Work with Device Descriptions
                                                    System:     ITECH07
  Position to  . . . . . .    _____    Starting characters

  Type options, press Enter.
    2=Change    3=Copy    4=Delete    5=Display    6=Print    7=Rename
    8=Work with status    9=Retrieve source


  Opt   Device      Type        Text
   _    OPTVRT01    632B        Virtual Optical Device
   _    OPT01       6331        Optical DVD in CEC




                                                                 Bottom
  Parameters or command
  ===> _____
  F3=Exit    F4=Prompt    F5=Refresh    F6=Create    F9=Retrieve    F12=Cancel
  F14=Work with status

 MA    C                      MW                                    10/003
    I902 - Session successfully started
```

itechsol.com

# For Each CD in the Order we perform this



itechsol.com
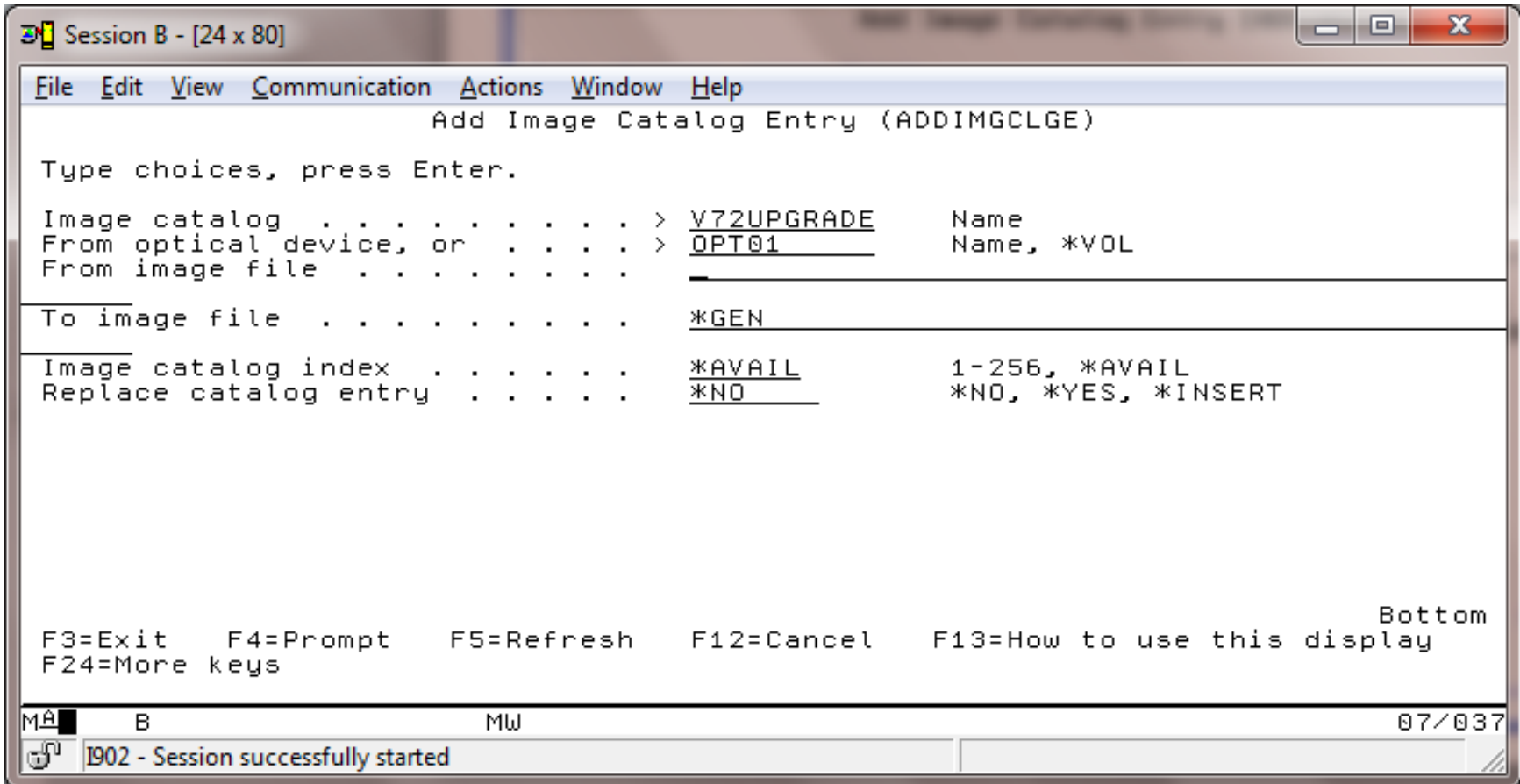
# WRKIMGCLGE

```
Session B - [24 x 80]

File  Edit  View  Communication  Actions  Window  Help
                        Work with Image Catalog Entries
                                                    System:    ITECH07
Catalog  . . :    V72UPGRADE          Status . . . :    Not ready
Type . . . . :    Optical             Device . . . :
Directory  . :    /av72upgrade

Type options, press Enter.
  1=Add   2=Change       4=Remove   6=Mount    8=Load    9=Unload
 10=Initialize volume   12=Work with volume

Opt    Index   Status       Image File Name
__    *AVAIL
__        1    Loaded       I_BASE_01-C
__        2    Loaded       B_GROUP1_01
__        3    Loaded       B_GROUP1_02
__        4    Loaded       B_GROUP1_03
__        5    Loaded       B_GROUP1_04
__        6    Loaded       B_GROUP1_05
__        7    Loaded       F_MULTI_NLV_WQX
__        8    Loaded       LCD8_1833_00
                                                             Bottom
F3=Exit    F5=Refresh    F6=Load/Unload image catalog    F7=Verify image catalog
F8=Reorder by index    F12=Cancel    F24=More keys

MA    B                         MW                              12/002
     I902 - Session successfully started
```

# Associate Virtual Optical to Catalogue

# Optical Device loaded and Ready



```
Session B - [24 x 80]

File  Edit  View  Communication  Actions  Window  Help
                    Work with Image Catalog Entries
                                                      System:    ITECH07
Catalog  . . :    V72UPGRADE              Status . . . :    Ready
Type . . . . :    Optical                Device . . . :    OPTVRT01
Directory  . :    /av72upgrade

Type options, press Enter.
  1=Add    2=Change        4=Remove    6=Mount    8=Load    9=Unload
  10=Initialize volume    12=Work with volume

Opt    Index   Status      Image File Name
  _    *AVAIL
         1     Mounted     I_BASE_01-C
         2     Loaded      B_GROUP1_01
         3     Loaded      B_GROUP1_02
         4     Loaded      B_GROUP1_03
         5     Loaded      B_GROUP1_04
         6     Loaded      B_GROUP1_05
         7     Loaded      F_MULTI_NLV_WQX
         8     Loaded      LCD8_1833_00
                                                              Bottom
F3=Exit    F5=Refresh    F6=Load/Unload image catalog    F7=Verify image catalog
F8=Reorder by index    F12=Cancel    F24=More keys

MA  B                       MW                                      12/002
   1902 - Session successfully started
```

itechsol.com

# Create List for what to upgrade
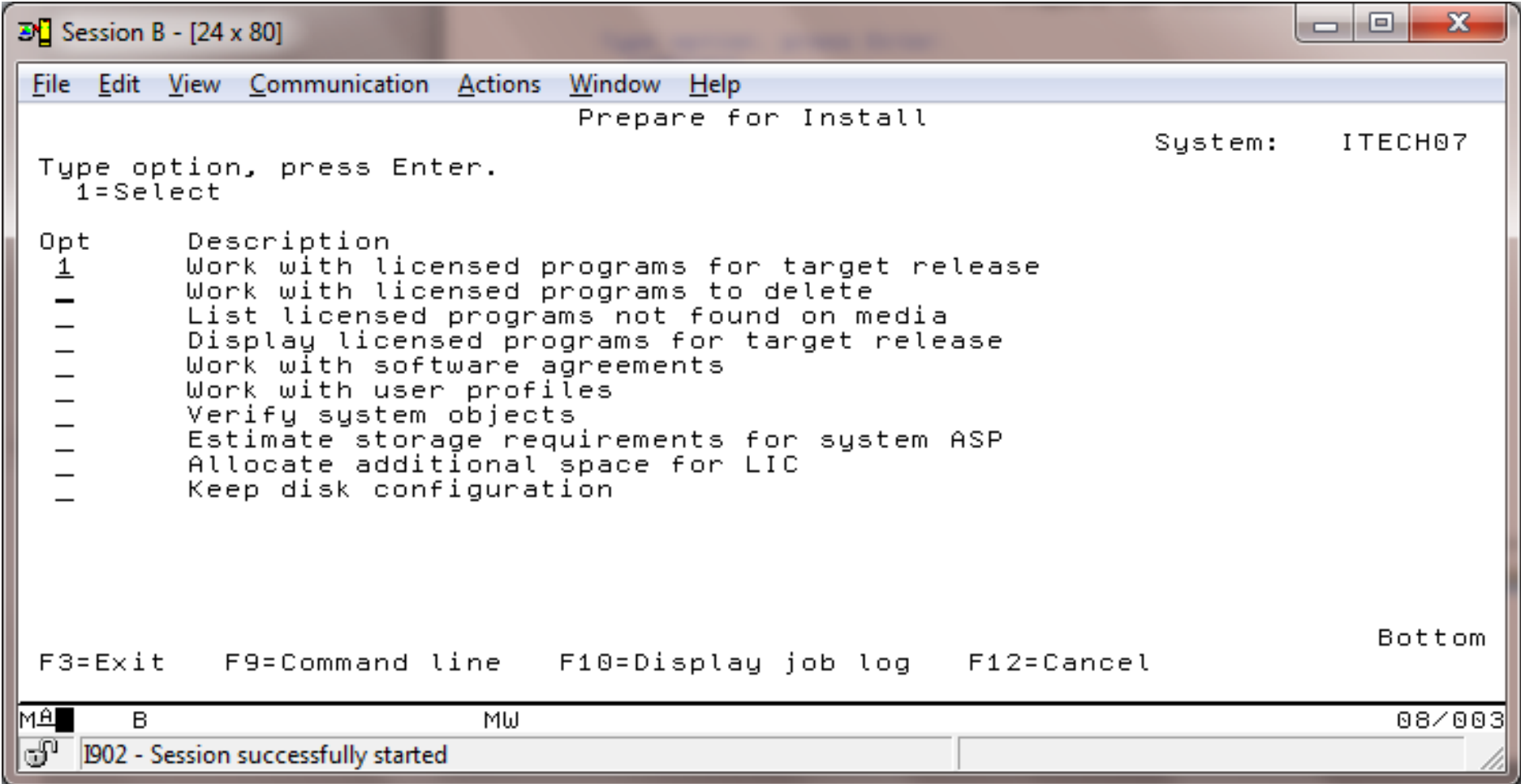


```
Session B - [24 x 80]

File  Edit  View  Communication  Actions  Window  Help
                              Prepare for Install
                                                      System:     ITECH07
   Type option, press Enter.
     1=Select

   Opt       Description
    1        Work with licensed programs for target release
    _        Work with licensed programs to delete
    _        List licensed programs not found on media
    _        Display licensed programs for target release
    _        Work with software agreements
    _        Work with user profiles
    _        Verify system objects
    _        Estimate storage requirements for system ASP
    _        Allocate additional space for LIC
    _        Keep disk configuration




                                                                  Bottom
   F3=Exit    F9=Command line    F10=Display job log    F12=Cancel

MA    B                     MW                                    08/003
     I902 - Session successfully started
```

itechsol.com

# Build the list

# Select LPPs



```
Session B - [24 x 80]

File   Edit   View   Communication   Actions   Window   Help
                    Work with Licensed Programs for Target Release
                                                      System:    ITECH07
Target release  . . . . . . . . . . . . . . . . . :    V7R2M0
Estimated additional storage for selections (M) . . . :    3219.74


Type options, press Enter.
  1=Select    5=Display release-to-release mapping


       Licensed   Product
Opt    Program    Option    Description
 1     5770999    *BASE     Licensed Internal Code
 1     5770SS1    *BASE     IBM i
 1     5770SS1              Library QGPL
 1     5770SS1              Library QUSRSYS
 1     5770SS1    1         Extended Base Support
 1     5770SS1    2         Online Information
 1     5770SS1    3         Extended Base Directory Support
 _     5770SS1    5         System/36 Environment
 _     5770SS1    6         System/38 Environment
                                                               More...
F3=Exit    F11=Display additional storage    F12=Cancel
F19=Display trademarks

MA     B                        MW                           12/003
    I902 - Session successfully started
```

itechsol.com

# F11 – Additional Storage



```
Session B - [24 x 80]

File  Edit  View  Communication  Actions  Window  Help
                    Work with Licensed Programs for Target Release
                                                    System:      ITECH07
Target release . . . . . . . . . . . . . . . . . . :    V7R2M0
Estimated additional storage for selections (M) . . . :    3219.74


Type options, press Enter.
  1=Select    5=Display release-to-release mapping

       Licensed   Additional
Opt    Program     Storage    Description
 1     5770999     2432.69    Licensed Internal Code
 1     5770SS1     -174.63    IBM i
 1     5770SS1        .48     Library QGPL
 1     5770SS1        8.35    Library QUSRSYS
 1     5770SS1       87.67    Extended Base Support
 1     5770SS1        1.40    Online Information
 1     5770SS1      135.66    Extended Base Directory Support
 _     5770SS1        .00     System/36 Environment
 _     5770SS1        .00     System/38 Environment
                                                              More...
 F3=Exit    F11=Display expected release    F12=Cancel    F19=Display trademarks


MA   B                    MW                                        12/003
     I902 - Session successfully started
```

itechsol.com

# F11 – Expected release



itechsol.com

# F11 – Expected Action



```
Session B - [24 x 80]

File  Edit  View  Communication  Actions  Window  Help
                    Work with Licensed Programs for Target Release
                                                    System:    ITECH07
  Target release  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  :    V7R2M0
  Estimated additional storage for selections (M) .  .  .  :    4162.78


  Type options, press Enter.
    1=Select    5=Display release-to-release mapping

        Licensed    Expected
  Opt   Program     Action       Description
    1    5770JV1    Replace      IBM Developer Kit for Java
    1    5770JV1    Replace      Java SE 6 32 bit
    1    5770JV1    Replace      Java SE 6 64 bit
    1    5770JV1    Add          Java SE 7 32 bit
    1    5770JV1    Add          Java SE 7 64 bit
         5770MG1                 IBM Managed System Services for i
    1    5770NAE    Replace      IBM Network Authentication Enablement for i
         5733OMF                 OmniFind Text Search Server for DB2 for i
    1    5770PT1    Replace      IBM Performance Tools for i
                                                                    More...
  F3=Exit   F11=Display product option   F12=Cancel   F19=Display trademarks

  Make more changes or press Enter to confirm changes.
MA     B                        MW                                  19/003
     I902 - Session successfully started
```

itechsol.com

# Our menu



```
Session B - [24 x 80]

File   Edit   View   Communication   Actions   Window   Help
                                    Prepare for Install
                                                           System:     ITECH07
 Type option, press Enter.
   1=Select

 Opt        Description
  _         Work with licensed programs for target release
  _         Work with licensed programs to delete
  1         List licensed programs not found on media
  _         Display licensed programs for target release
  _         Work with software agreements
  _         Work with user profiles
  _         Verify system objects
  _         Estimate storage requirements for system ASP
  _         Allocate additional space for LIC
  _         Keep disk configuration




                                                                    Bottom
 F3=Exit    F9=Command line    F10=Display job log    F12=Cancel

MA     B                    MW                                        10/003
    I902 - Session successfully started
```

# Software to Delete – Should be Empty



Session B - [24 x 80]

File   Edit   View   Communication   Actions   Window   Help

```
                         Work with Licensed Programs to Delete
                                                          Syster       ECH07
  Target release  . . . . . . :     V7R2M0

  Type options, press Enter.
    1=Save     4=Delete

       Licensed    Product
  Opt  Program     Option    Description
  _    5733QU2     *BASE     IBM DB2 Web Query for i
  _    5733QU2     1         Active Reports
  _    5733QU2     2         OLAP Enablement
  _    5733QU2     4         Run Time User Enablement
  _    5733QU2     5         Spreadsheet Client
  _    5733QU2     6         Adapter for Microsoft SQL Server




                                                                     Bottom
  F3=Exit    F9=Command line    F11=Display reasons    F12=Cancel
  F19=Display trademarks
```

MᴬB                              MW                                   10/003

I902 - Session successfully started

itechsol.com

# Software not found on Media

```
Session B - [24 x 80]

File  Edit  View  Communication  Actions  Window  Help
                        Licensed Programs Not Found on Media
                                                      System:        H07
 Target release . . . . . . . . :    V7R2M0


 Type options, press Enter.
   5=Display release to release mapping

            Licensed     Product
  Opt       Program      Option      Description

  (All licensed programs were found on media)




                                                           Caution




                                                              Bottom
 F3=Exit    F12=Cancel    F19=Display trademarks

MA  B                         MW                            01/001
    I902 - Session successfully started
```

# Software for Target release

File  Edit  View  Communication  Actions  Window  Help

```
                    Display Licensed Programs for Target Release
                                                    System:    ITECH07
Target release  . . . . . . . . . . . . . . . . . :    V7R2M0
Estimated additional storage for selections (M) . . . :    4162.78


Type options, press Enter.
  5=Display release to release mapping


         Licensed                                           Expected
  Opt    Program    Description                             Action
   _     5770SS1    Digital Certificate Manager             Replace
   _     5770SS1    International Components for Unicode     Replace
   _     5770SS1    Additional Fonts                        Replace
   _     5770SS1    IBM Advanced Data Security for i     _  Add
   _     5770DG1    IBM HTTP Server for i                   Replace
   _     5770JV1    IBM Developer Kit for Java              Replace
   _     5770JV1    Java SE 6 32 bit                        Replace
   _     5770JV1    Java SE 6 64 bit                        Replace
   _     5770JV1    Java SE 7 32 bit                        Add
                                                              More...
 F3=Exit    F9=Command line    F11=Display view 2    F12=Cancel
 F19=Display trademarks
```

MA    B                        MW                                    15/057

itechsol.com

# Accept Software Licenses



```
Session B - [24 x 80]

File  Edit  View  Communication  Actions  Window  Help
                            Work with Software Agreements
                                                        System:      ITECH07
  Currently selected language :    English

  Type options, press Enter.
    4=Remove    5=Display    6=Print

      Licensed    Product    Product    Accept
  Opt Program     Option     Release    Status
  _   *MCHCOD                           No
  _   5770SS1     *BASE      V7R2M0     No
  _   5770SS1     13         V7R2M0     No
  _   5770SS1     29         V7R2M0     No
  _   5770SS1     30         V7R2M0     No
  _   5770SS1     31         V7R2M0     No
  _   5770SS1     33         V7R2M0     No
  _   5770SS1     39         V7R2M0     No
  _   5770SS1     47         V7R2M0     No
  _   5770DG1     *BASE      V7R2M0     No
  _   5770JV1     *BASE      V7R2M0     No
                                                            More...
  F3=Exit   F11=Display description   F12=Cancel   F13=Select language
  F19=Display trademarks   F22=Restore software agreements

MA   B                        MW                              20/003
     I902 - Session successfully started
```

# Accept Software Licenses



```
Session B - [24 x 80]

File   Edit   View   Communication   Actions   Window   Help
                              Software Agreement
                                                        Syst        TECH07
 Licensed program . . . . . . . . . :      5770SS1
 Licensed program option . . . . . :      *BASE
 Release . . . . . . . . . . . . . :      V7R2M0



 IMPORTANT: READ CAREFULLY

 Two license agreements are presented below.

 1.  IBM International License Agreement for Evaluation of Programs
 2.  IBM International Program License Agreement

 If Licensee is obtaining the Program for purposes of productive use
 (other than evaluation, testing, trial "try or buy," or demonstration):
 By clicking on the "Accept" button below, Licensee accepts the IBM
 International Program License Agreement, without modification.

                                                              More...
 F3=Exit    F6=Print    F12=Cancel     F13=Select available language   F14=Accept
 F15=Accept all         F16=Decline    F17=Top   F18=Bottom

MA    B                      MW                                    01/001
   I902 - Session successfully started
```

# Everyone must display YES

# Estimate Additional Storage



```
Session B - [24 x 80]

File  Edit  View  Communication  Actions  Window  Help
                  Estimated Storage Requirements for system ASP.
                                                System      CH07
When upgrading to the target release, type the additional storage
required below.  You will need to factor in new and updated PRPQ and LPO
sizes, as well as, other third party software sizes.

The information you provide, along with the value for "Estimated
Additional Storage for Selections (M)" on the Work with Licensed
Programs for Target Release display, will be used to estimate storage
requirements.

Type value, press Enter.

Additional storage required  . . . . . .    4162         M     ←

F3=Exit    F12=Cancel

MA  B                          MW                              14/049
    I902 - Session successfully started
```

itechsol.com

# We have enough Disk space
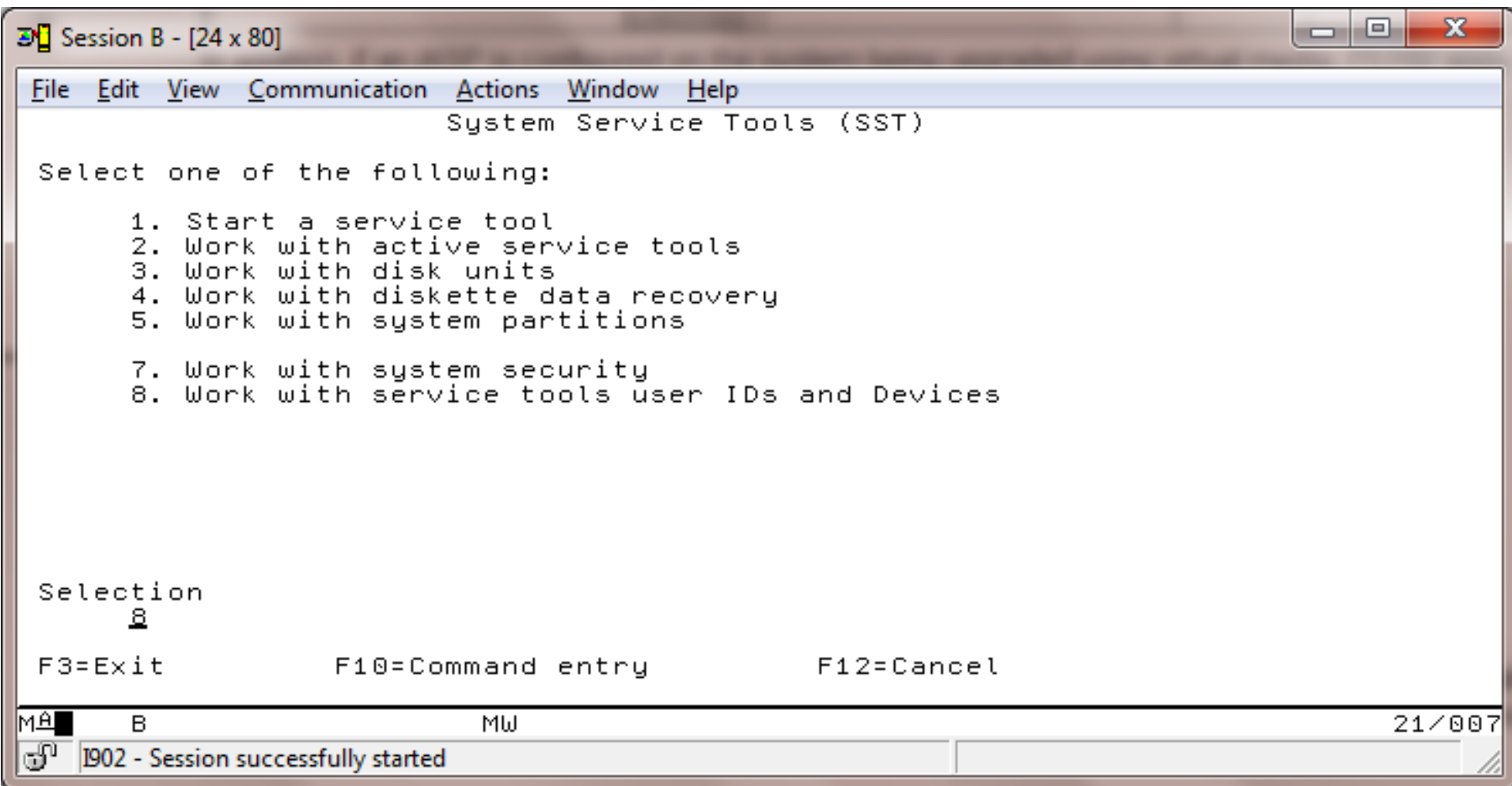


```
Session B - [24 x 80]

File  Edit  View  Communication  Actions  Window  Help
                    Estimated Storage Requirements for System ASP
                                                    System:    ITECH07
Target release . . . . . . . . :    V7R2M0

Current supported system capacity (M)  . . . . . . :    1702770
  Storage used (M) . . . . . . . . . . . . . . . :     948132
Storage required to install target release (M) . . :    956456
Install growth:
  Licensed program growth (M)  . . . . . . . . . . :    4162

Install will multi-process . . . . . . . . . . . . :    Yes




Press Enter to continue.

F3=Exit    F11=Show multi-process details    F12=Cancel

MA     B                        MW                                    01/001
  I902 - Session successfully started
```
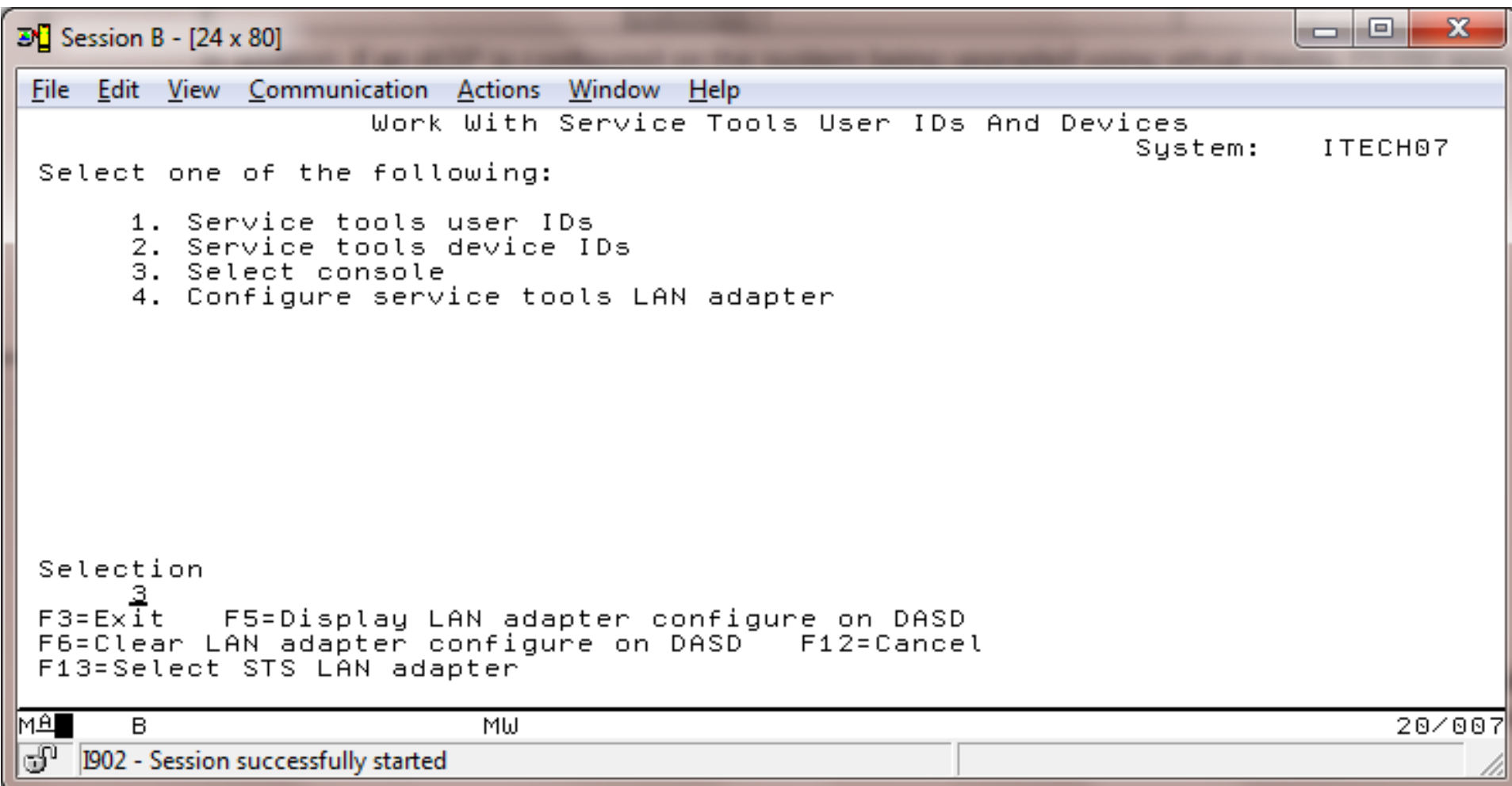
# Set Console Type



Session B - [24 x 80]

File   Edit   View   Communication   Actions   Window   Help

```
                        System Service Tools (SST)

Select one of the following:

      1. Start a service tool
      2. Work with active service tools
      3. Work with disk units
      4. Work with diskette data recovery
      5. Work with system partitions

      7. Work with system security
      8. Work with service tools user IDs and Devices




  Selection
      8

  F3=Exit            F10=Command entry           F12=Cancel
```

MA    B                        MW                              21/007

I902 - Session successfully started

itechsol.com

# Select Console



Session B - [24 x 80]

File  Edit  View  Communication  Actions  Window  Help

```
                    Work With Service Tools User IDs And Devices
                                                 System:    ITECH07
 Select one of the following:

      1. Service tools user IDs
      2. Service tools device IDs
      3. Select console
      4. Configure service tools LAN adapter












 Selection
      3
 F3=Exit    F5=Display LAN adapter configure on DASD
 F6=Clear LAN adapter configure on DASD   F12=Cancel
 F13=Select STS LAN adapter
```

MA      B                    MW                                    20/007

I902 - Session successfully started

# Select YOUR console



Session B - [24 x 80]

File  Edit  View  Communication  Actions  Window  Help

```
                          Select Console
                                             System:    ITECH07

Allow console recovery and console can be taken
    over by another console  . . . . . . . . .  1    1=Yes, 2=No

Select one of the following:
   Console type . . . . . . . . . . . . . . . .  4
      1.  Twinaxial
      2.  Operations console(Direct)
      3.  Operations console(LAN)
      4.  Hardware management console(HMC)
Current state of console tag   . . . . . . . .  4




Press enter to continue.
F3=Exit       F12=Cancel
```

MA    B                        MW                                    08/050

I902 - Session successfully started

itechsol.com

# ANZOBJCVN – Crossing 6.1 boundary

- Collect the data again and verify that there are NO programs on this report that you expect to run at 6.1 or 7.1 !!!

**Stop**

**Decision Point**

# What we will cover…

- Map, starting, and documentation
- Analyze Object Conversion
- Release Mapping
- HMC, FSP, firmware, & IBM i
- Models
- Required PTFs, Resaves, and License Keys
- Image Catalogue & Preparing
- Right before the upgrade
- The Upgrade
- Verification
- Conversions & Afterwards

# If Using two-phase Commit



```
Session B - [24 x 80]

 File  Edit  View  Communication  Actions  Window  Help
                    Work with Commitment Def (WRKCMTDFN)

 Type choices, press Enter.

 Job name . . . . . . . . . . . . .    *all            Name, *, *ALL
   User . . . . . . . . . . . . . .                    Name
   Number . . . . . . . . . . . . .                    000000-999999
 Status . . . . . . . . . . . . . .    *resync         *ALL, *PENDING, *RESYNC...
 ASP group  . . . . . . . . . . . .    *ALLAVL         Name, *ALLAVL, *SYSBAS
 Logical unit of work ID  . . . .      *ALL


 Output . . . . . . . . . . . . . .    *               *, *PRINT




                                                                      Bottom
 F3=Exit    F4=Prompt    F5=Refresh    F10=Additional parameters    F12=Cancel
 F13=How to use this display          F24=More keys

 MA      B                    MW                                         08/044
     I902 - Session successfully started
```

itechsol.com

# No Commitment Definitions

# Most important Step – FULL SAVE (21 or BRMS)



itechsol.com

# Verify for Upgrade



Session B - [24 x 80]

File   Edit   View   Communication   Actions   Window   Help

```
                        Verify Image Catalog (VFYIMGCLG)

Type choices, press Enter.

Image catalog  . . . . . . . . . > V72UPGRADE     Name
Verify type  . . . . . . . . . .   *UPGRADE       *UPGRADE, *PTF, *OTHER
Sort image catalog . . . . . . .   *yes           *NO, *YES
Network file server share  . . .   *NO            *NO, *YES
Language . . . . . . . . . . . .   *DFT           2901-2999, *DFT




                                                                     Bottom
 F3=Exit    F4=Prompt    F5=Refresh    F12=Cancel    F13=How to use this display
 F24=More keys
```

M<u>A</u>    B              MW                                        09/037

I902 - Session successfully started

itechsol.com

# NOT Good



Session B - [24 x 80]

File  Edit  View  Communication  Actions  Window  Help

```
                        Work with Image Catalogs
                                                     System          H07
 Type options, press Enter.
   1=Create   2=Change   4=Delete    8=Load    9=Unload    10=Verify
   12=Work with entries

         Image                                ASP               Device
 Opt     Catalog       Status      Type    Threshold  Device    Status
 10      V72UPGRADE    Ready       Optical  *CALC     OPTVRT01   Active




                                                                    Bottom
 F3=Exit    F5=Refresh    F11=View descriptions    F12=Cancel

 Verification for image catalog V72UPGRADE failed.
MA   B                    MW                                      09/002
```

I902 - Session successfully started

# Verified



Session A - [24 x 80]

File  Edit  View  Communication  Actions  Window  Help

```
              Work with Image Catalog Entries
                                              System:    NORMAN
  Catalog  . . :    UPGRADE           Status . . . :    Ready
  Type . . . . :    Optical           Device . . . :    OPTVRT01
  Directory  . :    /V6R1


  Type options, press Enter.
    1=Add    2=Change      4=Remove   6=Mount    8=Load    9=Unload
    10=Initialize volume    12=Work with volume



  Opt    Index  Status        Image File Name
   __    *AVAIL
   __        1  Mounted       I_BASE_01
   __        2  Loaded        B2924_01
   __        3  Loaded        B2924_02
   __        4  Loaded        F2924_01
   __        5  Loaded        F2935_01
   __        6  Loaded        F_MULTI_NLV




                                                        Bottom
  F3=Exit   F5=Refresh   F6=Load image catalog   F7=Verify image catalog
  F8=Reorder by index    F12=Cancel   F24=More keys
  Image catalog UPGRADE, type *UPGRADE verified.
```

**Checkpoint**

MA    a              MW                                    13/004

I902 - Session successfully started

# What we will cover…

- Map, starting, and documentation
- Analyze Object Conversion
- Release Mapping
- HMC, FSP, firmware, & IBM I
- Models
- Required PTFs, Resaves, and License Keys
- Image Catalogue & Preparing
- Right before the upgrade
- The Upgrade
- Verification
- Conversions & Afterwards

# Start the Upgrade



```
Session B - [24 x 80]

File  Edit  View  Communication  Actions  Window  Help
                          Power Down System (PWRDWNSYS)

 Type choices, press Enter.

 How to end . . . . . . . . . . .    *CNTRLD         *CNTRLD, *IMMED
 Controlled end delay time  . . . >  30              Seconds, *NOLIMIT
 Restart options:
   Restart after power down . . . >  *YES            *NO, *YES
   Restart type . . . . . . . . .    *IPLA           *IPLA, *SYS, *FULL
 IPL source . . . . . . . . . . . >  *IMGCLG         *PANEL, A, B, D, *IMGCLG
 Image catalog  . . . . . . . . .    V72upgrade      Name




                                                                    Bottom
 F3=Exit    F4=Prompt    F5=Refresh    F10=Additional parameters    F12=Cancel
 F13=How to use this display          F24=More keys

MA    B                      MW                                     05/037
     I902 - Session successfully started
```
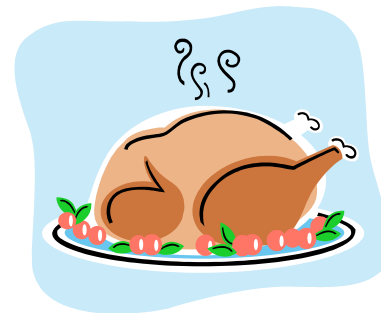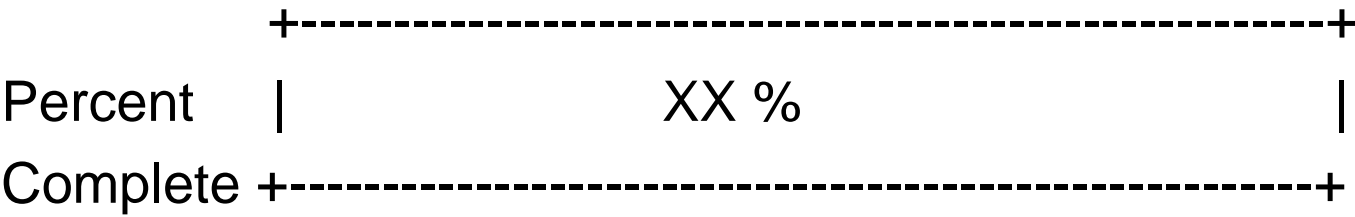
itechsol.com

# Sit back and relax while Image Catalogues do the work

# Next on the console

```
              Install Licensed Internal Code - Status
Install of the Licensed Internal Code in progress.

          +------------------------------------------------------+

Percent   |                    XX %                              |

Complete  +------------------------------------------------------+


Elapsed time in minutes . . . . . . . . : x.x
```

# IBM i being installed

```
Message ID. . . : CPI2070                    i5/OS Installation Status
              +--------------------------------------------------+
Stage 2       |                      XX %                        |
              +--------------------------------------------------+
Installation                                                Objects
Stage                                          Completed   Restored
     1 Creating needed profiles and libraries . . . . :   X
>>   2 Restoring programs to library QSYS . . . . . . :        XXXXX
     3 Restoring language objects to library QSYS . . :
     4 Updating program table . . . . . . . . . . . . :
     5 Installing database files. . . . . . . . . . . :
     6 Installing base directory objects . . . . . . :
     7 Completing installation . . . . . . . . :
```

i5/OS is a trademark of IBM in the United States and other countries.

# Installing Licensed Programs

```
Session A - ITECH05C.ws - [24 x 80]
File  Edit  View  Communication  Actions  Window  Help

                        Installing Licensed Programs
        _
                                                System:    ITECH05


        Licensed programs processed . . . . . . . . . . . :      16 of 67



        Licensed
        Program   Option   Description                                Type
        5770SS1   3        Extended Base Directory Support            *PGM
        5770SS1   8        AFP Compatibility Fonts                    *PGM
        5770SS1   12       Host Servers                               *PGM
        5770SS1   13       System Openness Includes                   *PGM
        5770SS1   29       Integrated Server Support                  *PGM
        5770SS1   33       Portable App Solutions Environment         *PGM
        5770SS1   43       Additional Fonts                           *PGM
        5770BR1   *BASE    IBM Backup, Recovery and Media Services for i  *PGM
        5770DG1   *BASE    IBM HTTP Server for i                      *PGM
        5761JV1   *BASE    IBM Developer Kit for Java                 *PGM
        5770NAE   *BASE    IBM Network Authentication Enablement for i  *PGM
        5770TC1   *BASE    IBM TCP/IP Connectivity Utilities for i    *PGM
                                                                  More...


        Copying temporary files from installation device


MA      a X                                              01/001
Connected to remote server/host 127.0.0.1 using port 1195
```
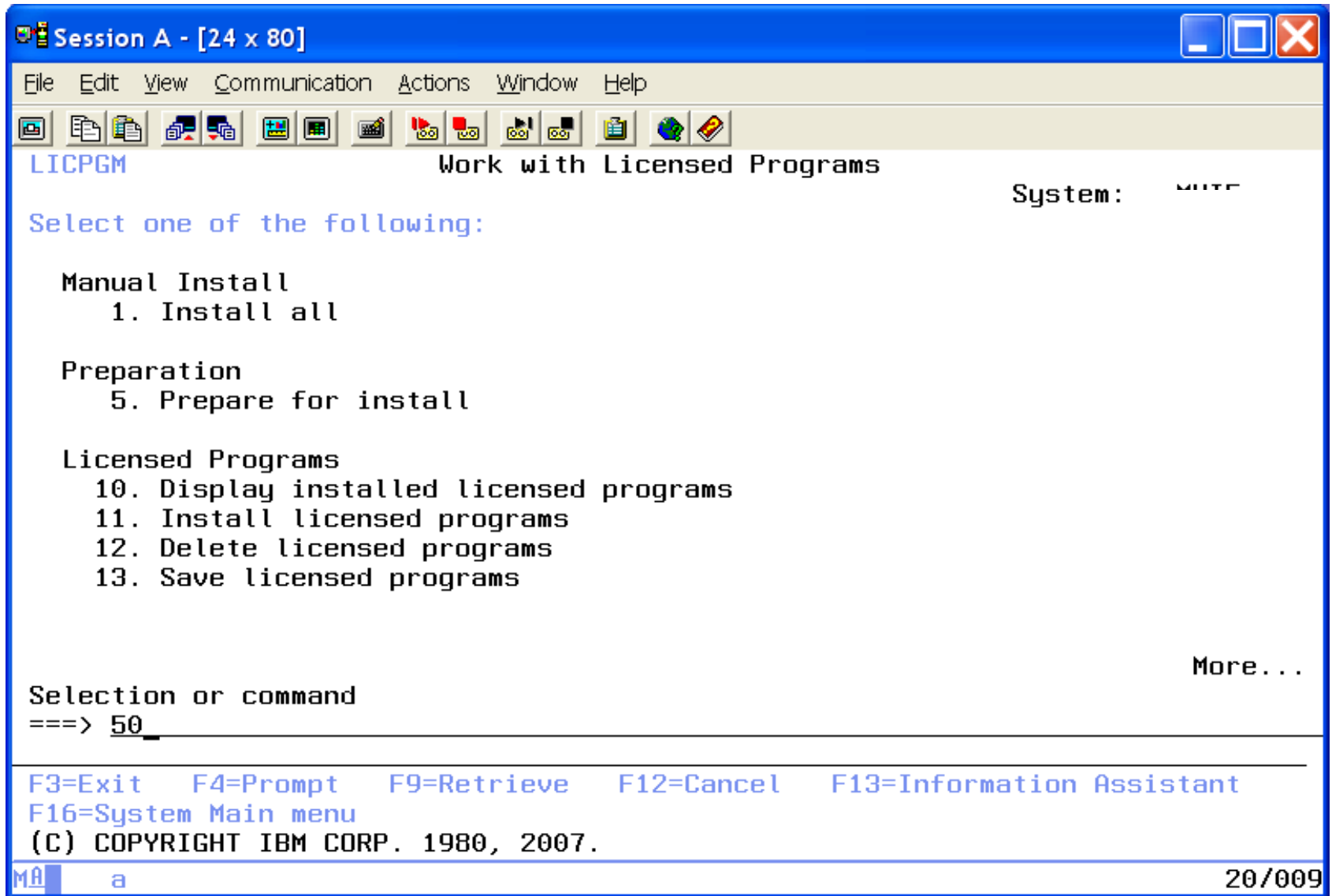
# What we will cover…

- Map, starting, and documentation
- Analyze Object Conversion
- Release Mapping
- HMC, FSP, firmware, & IBM I
- Models
- Required PTFs, Resaves, and License Keys
- Image Catalogue & Preparing
- Right before the upgrade
- The Upgrade
- Verification
- Conversions & Afterwards

# When Complete Check



```
Session A - [24 x 80]

File  Edit  View  Communication  Actions  Window  Help

LICPGM                    Work with Licensed Programs
                                                    System:   MUIE

Select one of the following:

  Manual Install
      1. Install all

  Preparation
      5. Prepare for install

  Licensed Programs
     10. Display installed licensed programs
     11. Install licensed programs
     12. Delete licensed programs
     13. Save licensed programs


                                                              More...
  Selection or command
  ===> 50_

  F3=Exit    F4=Prompt    F9=Retrieve    F12=Cancel    F13=Information Assistant
  F16=System Main menu
  (C) COPYRIGHT IBM CORP. 1980, 2007.

MA       a                                                    20/009
```

itechsol.com

# Verify Install



itechsol.com

# Automatic Installation completed



Display History Log Contents

```
*PGM objects for product 5722XH2 option *BASE release V5R4M0 restored.
*LNG objects for NLV 2924 for product 5722XH2 option *BASE release V5R4M0 res
*PGM objects for product 5722SS1 option 3 release V5R4M0 restored.
License key information installed for 5722SS1.
*LNG objects for NLV 2924 for product 5722SS1 option 3 release V5R4M0 restore
*PGM objects for licensed program 5722CE3 option *BASE may require installati
*LNG objects for licensed program 5722CE3 option *BASE may require installati
*PGM objects for licensed program 5722IWE option *BASE may require installati
*LNG objects for licensed program 5722IWE option *BASE may require installati
*PGM objects for licensed program 5722IWE option 02 may require installation.
*LNG objects for licensed program 5722IWE option 02 may require installation.
Some licensed programs not found on media.
Licensed program installation process completed successfully.
Automatic installation completed successfully.
```

More...

Press Enter to continue.

F3=Exit    F10=Display all    F12=Cancel

MA        a                    MW                              01/001

itechsol.com

# Verify

- Check messages in QSYSOPR
- Should not see any license Key messages
- Display LICPGM everything at right release
- Load any Special PTFs first and IPL back to restricted..
- Then load the PTFs (Cumulative, Groups, DB) & then IPL

# Multiple IPLs possible



itechsol.com

# INZSYS Started after First IPL
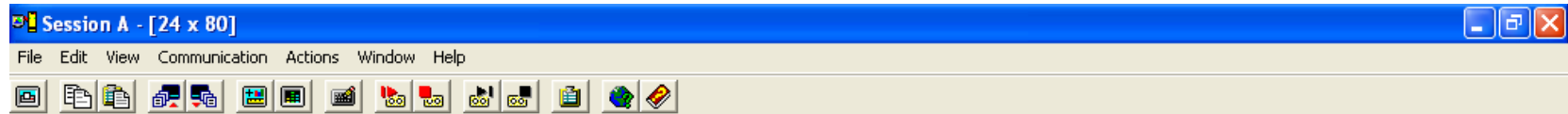


Work with Messages

System:    AS400

Messages in:    QSYSOPR

Type options below, then press Enter.
  4=Remove    5=Display details and reply

| Opt | Message |
| --- | --- |
| _ | 192.168.110.3 interface not started. |
| _ | Conversion of mail logs complete. |
| _ | 0 writers started. 1 writers did not start. |
| _ | Initialization of calendar files complete. |
| _ | Line ETHERNET2 failed. |
| _ | Initialize System (INZSYS) started. |
| _ | Interface ::1 is active. |
| _ | IPv6 interface started successfully. |
| _ | Interface 192.168.210.3 is active. |
| _ | User QTCP started IP interface 192.168.210.3 on ETHERNET. |
| _ | Controller ETHERNET contacted on line ETHERNET. |
| _ | Interface 127.0.0.1 is active. |

More...

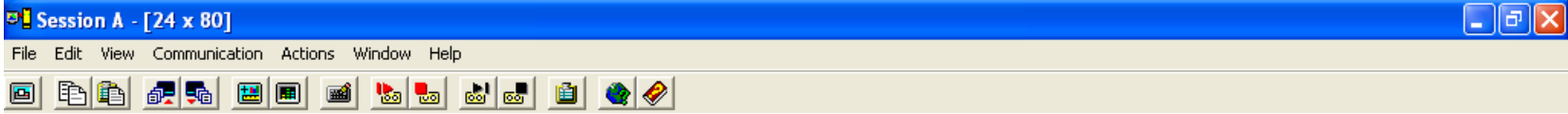F1=Help    F3=Exit       F5=Refresh    F16=Remove messages not needing a reply
F17=Top    F18=Bottom    F24=More keys

MA    a                   MW                                    09/003

itechsol.com

# INZSYS Completed



**Session A - [24 x 80]**

File  Edit  View  Communication  Actions  Window  Help

```
                         Work with Messages
                                                    System:    AS400

   Messages in:    QSYSOPR


   Type options below, then press Enter.
     4=Remove    5=Display details and reply


   Opt    Message
                                Messages needing a reply
       (No messages available)


                             Messages not needing a reply
   _    IBM Directory Server started successfully.
   _    Log version QHST07057B in QSYS closed and should be saved.
   _    Initialize System (INZSYS) processing completed successfully.
   _    iSeries Support for Windows Network Neighborhood (iSeries NetServer)
          AS400 initialization complete.
   _    Volume C6841473_01 added to optical device.
   _    *** E3 PURCHASE ORDER FILES HAVE BEEN SENT TO THE E3XFER LIBRARY ***
          From  . . :    QSECOFR            02/26/07    14:30:37
                                                              More...

   F1=Help    F3=Exit       F5=Refresh    F16=Remove messages not needing a reply
   F17=Top    F18=Bottom    F24=More keys
```
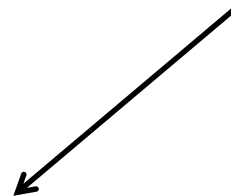
MA          a                    MW                              13/003

**Checkpoint**

itechsol.com

# What we will cover…

- Map, starting, and documentation
- Analyze Object Conversion
- Release Mapping
- HMC, FSP, firmware, & IBM I
- Models
- Required PTFs, Resaves, and License Keys
- Image Catalogue & Preparing
- Right before the upgrade
- The Upgrade
- Verification
- Conversions & Afterwards

# Afterwards

- Update System Values that you changed.
- CFGACCWEB2
- Enable Service Director
- Check PM400 (GO PMAGT)
- Performance Data
- Delete Image Catalogues
- Test SNDPTFORD & SNDSRVRQS
- Cleanup PTF Groups WRKPTFGRP
- Update Client Access Clients
- Update iSeries Integrated Windows Servers

# Conversions

- V6R1 – ALL PROGRAMS

- See  program on www.itechsol.com under newsletters

# Conversions

- V5R4
  - Data Queues
  - User Queues
  - *FILES
  - SQLPGMs
- 7.3
  - Libraries

# SAVE – New starting point

- Full Save if have the time

- Otherwise (GO SAVE 22)
  - SAVSYS
  - SAVLIB *IBM
  - SAV ('/QIBM/ProdData') + ('/QOpenSys/QIBM/ProdData'))



Don't Forget

# 7 Key Points to take home

- ANZOBJCVN, ANZOBJCVN, ANZOBJCVN !!!
- Get the required PTFs on your system before the upgrade.
- Check FSP Firmware minimum levels.
- Have a Good _FULL_ Backup right before the upgrade.
- Have license keys and new PTFs available.
- Conversions need to complete afterwards.
- SAVE 22 or Full save after the conversions.

# Your Turn!

**Questions?**

**How to contact me:**

**Pete Massiello**

**Email: pmassiello@itechsol.com**

**Twitter: petem59**

iTech Solutions Group, LLC

itechsol.com