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 you 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
IBM i Roadmap

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
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
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)
IBM i
Version 7.3

IBM i and related software
Installing, upgrading, or deleting IBM i and related software
Memo to Users

IBM i Memo to Users
Version 7.3

Memo to Users
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 QUSRYSYS

Whenever library QUSRYSYS 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(QUSRYSYS). 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
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
• MOST IMPORTANT STEP Crossing the 6.1 boundary
  • 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.
## Verify 3rd Party Software

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Product</th>
<th>Release</th>
<th>Libraries</th>
<th>Helpline</th>
<th>Serial#</th>
<th>Dependent</th>
</tr>
</thead>
</table>

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

1. 7.1
2. 7.2
3. 7.3
## Release Support

<table>
<thead>
<tr>
<th>Release</th>
<th>Announce date*</th>
<th>GA date*</th>
<th>Announce End of Marketing date*</th>
<th>Effective End of Marketing date*</th>
<th>End of Program Support*</th>
<th>Program Support Extension Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>V4R4</td>
<td>02/09/1999</td>
<td>05/21/1999</td>
<td>02/13/2001</td>
<td>05/31/2001</td>
<td>05/31/2001</td>
<td>11/30/2001</td>
</tr>
<tr>
<td>V5R2</td>
<td>06/04/2002</td>
<td>08/30/2002</td>
<td>02/08/2005</td>
<td>10/01/2005</td>
<td>04/30/2007</td>
<td></td>
</tr>
<tr>
<td>V5R3</td>
<td>05/04/2004</td>
<td>06/11/2004</td>
<td>02/06/2007</td>
<td>01/04/2008</td>
<td>04/30/2009</td>
<td>04/30/2013</td>
</tr>
<tr>
<td>V5R4 (5.4.x)</td>
<td>01/31/2006</td>
<td>02/14/2006</td>
<td>01/27/2009</td>
<td>05/27/2011</td>
<td>09/30/2013 Note 2</td>
<td>09/30/2016 Note 3</td>
</tr>
<tr>
<td>6.1.x</td>
<td>01/29/2008</td>
<td>03/21/2008</td>
<td>09/09/2014</td>
<td>12/09/2014</td>
<td>09/30/2015 Note 2</td>
<td>09/30/2018 Note 3</td>
</tr>
<tr>
<td>7.1</td>
<td>04/13/2010</td>
<td>04/23/2010</td>
<td></td>
<td></td>
<td>Note 1</td>
<td></td>
</tr>
<tr>
<td>7.2</td>
<td>04/28/2014</td>
<td>05/02/2014</td>
<td></td>
<td></td>
<td></td>
<td>Note 1</td>
</tr>
<tr>
<td>7.3</td>
<td>04/12/2016</td>
<td>04/15/2016</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

09/30/17  04/30/18
Support: 6.1 & 6.1.1 ended 09/30/2015, 7.1 ends 4/30/18

<table>
<thead>
<tr>
<th>Release</th>
<th>End of support</th>
<th>Upgrade to V5R4</th>
<th>Upgrade to IBM i 6.1</th>
<th>Upgrade to IBM i 7.1</th>
<th>Upgrade to IBM i 7.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>V5R3</td>
<td>30 Apr 2009</td>
<td>Withdrawal date 27 May 2011</td>
<td>Withdrawal date to be announced</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V5R4</td>
<td>30 Sep 2013</td>
<td>-</td>
<td>Withdrawal date to be announced</td>
<td>Withdrawal date to be announced</td>
<td></td>
</tr>
<tr>
<td>IBM i 6.1</td>
<td>30 Sep 2015</td>
<td>-</td>
<td>-</td>
<td>Withdrawal date to be announced</td>
<td></td>
</tr>
<tr>
<td>IBM i 7.1</td>
<td>To be announced</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Withdrawal date to be announced</td>
</tr>
<tr>
<td>IBM i 7.2</td>
<td>To be announced</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

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

- Power Hypervisor PHYP
- Flexible Service Processor (FSP)
  - Flash Memory
  - Perm
  - Temp

- System Power Cont. Network (SPCN)
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
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
HMC & FSP Code Combinations

Power 8

<table>
<thead>
<tr>
<th>Server MTM 8286-41A</th>
<th>System firmware</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMC and HMC Virtual Appliance</td>
<td>SV840_056 FW840.00 SV840_079 FW840.10 SV840_087 FW840.11</td>
</tr>
<tr>
<td></td>
<td>SV830_048 FW830.00 SV830_068 FW830.10 SV830_075 FW830.11 SV830_086 FW830.20 (2)</td>
</tr>
<tr>
<td></td>
<td>SV810_054 FW810.00 SV810_058 FW810.01 SV810_059 FW810.02 SV810_061 FW810.10 SV810_087 FW810.11 SV810_101 FW810.12 SV810_124 FW810.20 SV810_126 FW810.21 SV810_133 FW810.30 SV810_134 FW810.31 SV810_146 FW810.44</td>
</tr>
<tr>
<td>V8 R840 V8 R840 SP1</td>
<td>Supported</td>
</tr>
<tr>
<td>V8 R830 V8 R830 SP1 V8 R830 SP2</td>
<td>Unsupported</td>
</tr>
<tr>
<td>V8 R820 V8 R820 SP1 V8 R820 SP2</td>
<td>Unsupported</td>
</tr>
<tr>
<td>V8 R810 V8 R810 SP1 V8 R810 SP2 V8 R810 SP3 (1)</td>
<td>Unsupported</td>
</tr>
</tbody>
</table>
# HMC & FSP Code Combinations

## Power 7

<table>
<thead>
<tr>
<th>Server MTM 8202-E4D</th>
<th>System firmware</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMC and HMC Virtual Appliance</td>
<td>AL770_076, AL770_090, AL770_092, AL770_098, AL770_101, AL770_109, AL770_110, AL770_032, AL770_038, AL770_048, AL770_052, AL770_062, AL770_063</td>
</tr>
<tr>
<td>V8 R840 V8 R840 SP1</td>
<td>Supported, Supported</td>
</tr>
<tr>
<td>V8 R830 V8 R830 SP1 V8 R830 SP2</td>
<td>Supported, Supported</td>
</tr>
<tr>
<td>V8 R820 V8 R820 SP1 V8 R820 SP2</td>
<td>Supported, Supported</td>
</tr>
<tr>
<td>V8 R810 V8 R810 SP1 V8 R810 SP2 V8 R810 SP3 (1)</td>
<td>Supported, Supported</td>
</tr>
<tr>
<td>V7 R790 V7 R790 SP1 V7 R790 SP2 V7 R790 SP3 (2)</td>
<td>Supported, Unsupported</td>
</tr>
<tr>
<td>V7 R780 V7 R780 SP1 V7 R780 SP2 (3)</td>
<td>Supported, Supported</td>
</tr>
<tr>
<td>V7 R770 V7 R770 SP1 V7 R770 SP2 V7 R770 SP3 V7 R770 SP4 (4)</td>
<td>Supported, Supported</td>
</tr>
</tbody>
</table>
DSPFMWSTS: V5R4M5 and above
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
<table>
<thead>
<tr>
<th>Systems</th>
<th>IBM i 7.1</th>
<th>IBM i 7.2</th>
<th>IBM i 7.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>POWER8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S814, S822 (VIOS only), S824, E870, E880</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>POWER7/7+ Servers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power 710, 720, 730, 740, 750, 760, 770, 780, 795</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>POWER7/7+ Blades and Compute Nodes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PS700/701/702/730/704, PureFlex p260/460</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>POWER6/6+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>520, 550, 560, 570, 595, JS12/22, JS23/43</td>
<td>✔️</td>
<td>✔️</td>
<td>1</td>
</tr>
<tr>
<td>POWER5/5+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>515, 520, 525, 550, 570, 595</td>
<td>✔️</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1 – no IOP or HSL support
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
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).
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 iNetServer 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
### i5/OS, OS/400 support for Domino

<table>
<thead>
<tr>
<th></th>
<th>IBM i 7.3</th>
<th>IBM i 7.2</th>
<th>IBM i 7.1</th>
<th>IBM i 6.1 and i 6.1.1</th>
<th>IBM i 6.1 and i 6.1.1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Domino 9.0.1</strong></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Domino 9.0</strong></td>
<td>Not supported</td>
<td>Not supported</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Domino 8.5.1, 8.5.2, 8.5.3</strong></td>
<td>Not supported</td>
<td>Not supported</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Domino 8.5</strong></td>
<td>Not supported</td>
<td>Not supported</td>
<td>Not supported</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>IBM i 7.2</th>
<th>IBM i 7.1</th>
<th>IBM i 6.1 and i 6.1.1</th>
<th>IBM i 5.4 and i 5.4.5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Domino 9.0.1</strong></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Not supported</td>
</tr>
<tr>
<td><strong>Domino 9.0</strong></td>
<td>Not supported</td>
<td>X</td>
<td>X</td>
<td>Not supported</td>
</tr>
<tr>
<td><strong>Domino 8.5.1, 8.5.2, 8.5.3</strong></td>
<td>Not supported</td>
<td>X</td>
<td>X</td>
<td>X (2)</td>
</tr>
<tr>
<td><strong>Domino 8.5</strong></td>
<td>Not supported</td>
<td>Not supported</td>
<td>X</td>
<td>X (2)</td>
</tr>
<tr>
<td><strong>Domino 8.0.1, 8.0.2</strong></td>
<td>Not supported</td>
<td>Not supported</td>
<td>X (2)</td>
<td>X</td>
</tr>
<tr>
<td><strong>Domino 8.0</strong></td>
<td>Not supported</td>
<td>Not supported</td>
<td>Not supported</td>
<td>X</td>
</tr>
</tbody>
</table>
Load Source > 17GB for 5.4, 6.1, & 7.1

<table>
<thead>
<tr>
<th>Unit</th>
<th>Type</th>
<th>Size (M)</th>
<th>Used</th>
<th>I/O Rqs</th>
<th>Request Size (K)</th>
<th>Read Rqs</th>
<th>Write Rqs</th>
<th>Read (K)</th>
<th>Write (K)</th>
<th>% Busy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4326</td>
<td>26373</td>
<td>33.3</td>
<td>.0</td>
<td>.0</td>
<td>.0</td>
<td>.0</td>
<td>.0</td>
<td>.0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>4326</td>
<td>26373</td>
<td>28.0</td>
<td>.0</td>
<td>.0</td>
<td>.0</td>
<td>.0</td>
<td>.0</td>
<td>.0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>4326</td>
<td>26373</td>
<td>28.0</td>
<td>.0</td>
<td>.0</td>
<td>.0</td>
<td>.0</td>
<td>.0</td>
<td>.0</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>4326</td>
<td>26373</td>
<td>28.0</td>
<td>.0</td>
<td>.0</td>
<td>.0</td>
<td>.0</td>
<td>.0</td>
<td>.0</td>
<td>0</td>
</tr>
</tbody>
</table>

Elapsed time: 00:00:00

02/26/07 11:13:27

Command

F3=Exit  F5=Refresh  F12=Cancel  F24=More keys

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

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)
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.
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.
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 II14131
  • 6.1 - APAR II14310
  • 7.1 – APAR II14482
  • 7.2 -
    https://www.ibm.com/developerworks/community/wiki/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/wiki/home?lang=en#!/wiki/IBM%20i%20and%20Related%20Software/page/Required%20PTFs%20for%20upgrading%20to%20IBM%20i%207.3
4. 17 Aug 2006 Information APAR III4188 contains information about New Firmware and Software Requirements for processor upgrades (M3).


Topic titled: Required: Allocating additional space for Licensed Internal Code. If using Virtual Media Install, verify the latest PTFs are installed.

See information APAR III4191 for the latest PTFs required.
### CDs – ReSpin or ReSave

**I_BASE_01 – Version**

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


**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
http://www.ibm.com/eserver/ess
Select License Keys you want

Select at least one license Key/Product, and click on one of the options below.

Product number | Product name          | Version / release
----------------|-----------------------|-------------------
5722S01         | i5/OS - Per Processor | V5                
Select all

Product number | Product name          | Version / release
----------------|-----------------------|-------------------
5722QU1         | Query                 | V5R4M0            
5722S1          | i5/OS                 | V5R4M0            
5722WS9         | WebSphere Development Studio | V5R4M0  
5722XW1         | iSeries Access Family Per User | V5R4M0  
Select all

Download key(s) (<10KB)
These are your Keys

- Product name: iSeries Access Family Per User
  Key output: ADDLICKEY PROID (5722XW01)

- Product name: WebSphere Development Studio
  Key output: ADDLICKEY PROID (5722W09)

- Product name: Query
  Key output: ADDLICKEY PROID (5722QU1)

- Product name: i5/OS
Enter each Key

Add License Key Information (ADDLICKEY)

Type choices, press Enter.

License key input ............ *PROMPT ............ *PROMPT, *LICKEYFILE, *TAPE
Product identifier ............ 5722ss1 ............ Identifier
License term ................. V5R4m0 ............ Vx, VxRy, VxRyMz
Feature ...................... 5050 ............ 5001-9999
System serial number ........ *LOCAL ............ Number, *LOCAL, *REMOTE, *ALL
Processor group .............. *ANY ............ Character value, *ANY
License key:
    Characters 1 - 6 ....... 15D93E ............ Character value
    Characters 7 - 12 ....... 550D78 ............ Character value
    Characters 13 - 18 ..... E10T01 ............ Character value
Usage limit .................. *nomax ............ 0-999999, *NOMAX
Expiration date .............. *NONE ............ Date, *NONE
Vendor data .................. *NONE ............ Character value, *NONE

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

MR a 14/040
   59 1002 - Session successfully started
   (Win3PDF on PDFFILE:...
Confirmation on Key

Previous commands and messages:
> ADDLICKEY PRDID(5722SS1) LICTRM(V5R4MO) FEATURE(5050) SERIAL(*LOCAL) LICKEY(D5D93F 530D78 E18701) USGLMT(*NOMAX)
1 license key information records added to repository.
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)
Let's start to Prepare: GO LICPGM

LICPGM Work with Licensed Programs

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

Selection or command

F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F16=AS/400 Main menu

Prepare for Install

Type option, press Enter.
1=Select

<table>
<thead>
<tr>
<th>Opt</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Work with licensed programs for target release</td>
</tr>
<tr>
<td>1</td>
<td>Work with licensed programs to delete</td>
</tr>
<tr>
<td>1</td>
<td>List licensed programs not found on media</td>
</tr>
<tr>
<td>1</td>
<td>Display licensed programs for target release</td>
</tr>
<tr>
<td>1</td>
<td>Work with software agreements</td>
</tr>
<tr>
<td>1</td>
<td>Work with user profiles</td>
</tr>
<tr>
<td>1</td>
<td>Verify system objects</td>
</tr>
<tr>
<td>1</td>
<td>Estimate storage requirements for system ASP</td>
</tr>
<tr>
<td>1</td>
<td>Allocate additional space for LIC</td>
</tr>
<tr>
<td>1</td>
<td>Keep disk configuration</td>
</tr>
</tbody>
</table>

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

16/003
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

Allocate Additional Space for LIC

Type choice, press Enter.

Allocate space . . . . . . YES NO, YES

Please note that when specifying *YES to this prompt that the next IPL will take some time to complete while the Licensed Internal Code is reserving the additional space. Once this IPL is complete, this action cannot be undone.

F3=Exit   F12=Cancel
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

F3=Exit  F5=Refresh  F12=Cancel
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.
Document these System Values

- **WRKSYSVAL**
  - QSYSLIBL __________
  - QUSRRLIBL __________
  - QALWOBJRST _____ (Needs to be *All)
  - QVFYOBJRST _______ (Max is 3)
  - QSTRUPPGM _______________

- Good time to look at your startup program.
Verify User Profiles & Cross Ref.

Prepare for Install

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

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

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...
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

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

@ 05/037

Win2PDF on PDFFILE:
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

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

x will be 1 for Americas & western Europe f/c 5817
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, MF59282

• 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+)
Create Virtual Optical

Device description: OPTVRT01
Resource name: *VRT
Device type: *RSRCNAME
Local internet address: *
Online at IPL: *YES
Message queue: *SYSOPR
Library: Virtual Optical

Authority: *CHANGE

Bottom
### Optical Devices Required

A list of device descriptions is shown in the image:

<table>
<thead>
<tr>
<th>Opt</th>
<th>Device</th>
<th>Type</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>OPTVRT01</td>
<td>632B</td>
<td>Virtual Optical Device</td>
</tr>
<tr>
<td>1</td>
<td>OPT01</td>
<td>6331</td>
<td>Optical DVD in CEC</td>
</tr>
</tbody>
</table>

This list is part of a computer interface, likely from a system management software. The interface includes options for working with device descriptions, such as change, copy, delete, display, print, rename, work with status, and retrieve source. The system is labeled as `ITECH07`.
For Each CD in the Order we perform this
## Work with Image Catalog Entries

**System:** ITECH07

<table>
<thead>
<tr>
<th>Catalog</th>
<th>V72UPGRADE</th>
<th>Status</th>
<th>Not ready</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Optical</td>
<td>Device</td>
<td></td>
</tr>
<tr>
<td>Directory</td>
<td>/av72upgrade</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Type options, press Enter:**

- 1=Add
- 2=Change
- 4=Remove
- 6=Mount
- 8=Load
- 9=Unload
- 10=Initialize volume
- 12=Work with volume

### Image File Name

<table>
<thead>
<tr>
<th>Opt</th>
<th>Index</th>
<th>Status</th>
<th>Image File Name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>*AVAIL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>Loaded</td>
<td>I_BASE_01-C</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Loaded</td>
<td>B_GROUP1_01</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Loaded</td>
<td>B_GROUP1_02</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Loaded</td>
<td>B_GROUP1_03</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Loaded</td>
<td>B_GROUP1_04</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>Loaded</td>
<td>B_GROUP1_05</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>Loaded</td>
<td>F_MULTI_NLV_WQX</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>Loaded</td>
<td>LCD8_1833_00</td>
</tr>
</tbody>
</table>

**F3=Exit  F5=Refresh  F6=Load/Unload image catalog  F7=Verify image catalog**

**F8=Reorder by index  F12=Cancel  F24=More keys**

---

**1902 - Session successfully started**
Associate Virtual Optical to Catalogue

Load or Unload Image Catalog (LODIMGCLG)

Type choices, press Enter.

Image catalog
Option
Virtual device
Write protect
Library mode

> V72UPGRADE
> *LOAD
  optvrt01
  *DFT
  *NO

Name
*LOAD, *UNLOAD
Name
*DFT, *ALL, *NONE
*NO, *YES

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

07/037
Optical Device loaded and Ready

<table>
<thead>
<tr>
<th>Opt</th>
<th>Index</th>
<th>Status</th>
<th>Image File Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>__</td>
<td>1</td>
<td>Mounted</td>
<td>I_BASE_01-C</td>
</tr>
<tr>
<td>__</td>
<td>2</td>
<td>Loaded</td>
<td>B_GROUP1_01</td>
</tr>
<tr>
<td>__</td>
<td>3</td>
<td>Loaded</td>
<td>B_GROUP1_02</td>
</tr>
<tr>
<td>__</td>
<td>4</td>
<td>Loaded</td>
<td>B_GROUP1_03</td>
</tr>
<tr>
<td>__</td>
<td>5</td>
<td>Loaded</td>
<td>B_GROUP1_04</td>
</tr>
<tr>
<td>__</td>
<td>6</td>
<td>Loaded</td>
<td>B_GROUP1_05</td>
</tr>
<tr>
<td>__</td>
<td>7</td>
<td>Loaded</td>
<td>F_MULTI_NLV_WQX</td>
</tr>
<tr>
<td>__</td>
<td>8</td>
<td>Loaded</td>
<td>LCD8_1833_00</td>
</tr>
</tbody>
</table>

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

F3=Exit          F5=Refresh          F6=Load/Unload image catalog          F7=Verify image catalog
F8=Reorder by index        F12=Cancel          F24=More keys
Create List for what to upgrade

<table>
<thead>
<tr>
<th>Opt</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Work with licensed programs for target release</td>
</tr>
<tr>
<td></td>
<td>Work with licensed programs to delete</td>
</tr>
<tr>
<td></td>
<td>List licensed programs not found on media</td>
</tr>
<tr>
<td></td>
<td>Display licensed programs for target release</td>
</tr>
<tr>
<td></td>
<td>Work with software agreements</td>
</tr>
<tr>
<td></td>
<td>Work with user profiles</td>
</tr>
<tr>
<td></td>
<td>Verify system objects</td>
</tr>
<tr>
<td></td>
<td>Estimate storage requirements for system ASP</td>
</tr>
<tr>
<td></td>
<td>Allocate additional space for LIC</td>
</tr>
<tr>
<td></td>
<td>Keep disk configuration</td>
</tr>
</tbody>
</table>

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

Type choices, press Enter.

Generate list from  1
1=Distribution media
2=Merge with additional distribution media
3=Modify previously generated list

Optical device . . . optvrt01 *NONE, Name
Target Release . . . V7R2M0 VxRxMx

F3=Exit  F12=Cancel
## Select LPPs

**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`

<table>
<thead>
<tr>
<th>Opt</th>
<th>Licensed Program</th>
<th>Product Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5770999</td>
<td>*BASE</td>
<td>Licensed Internal Code</td>
</tr>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>*BASE</td>
<td>IBM i</td>
</tr>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>Library QGPL</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>Library QUSRYS</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>1</td>
<td>Extended Base Support</td>
</tr>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>2</td>
<td>Online Information</td>
</tr>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>3</td>
<td>Extended Base Directory Support</td>
</tr>
<tr>
<td>_</td>
<td>5770SS1</td>
<td>5</td>
<td>System/36 Environment</td>
</tr>
<tr>
<td>_</td>
<td>5770SS1</td>
<td>6</td>
<td>System/38 Environment</td>
</tr>
</tbody>
</table>

**F3=Exit  F11=Display additional storage  F12=Cancel**

**F19=Display trademarks**
F11 – Additional Storage

<table>
<thead>
<tr>
<th>Opt</th>
<th>Licensed Program</th>
<th>Additional Storage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5770999</td>
<td>2432.69</td>
<td>Licensed Internal Code</td>
</tr>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>-174.63</td>
<td>IBM i</td>
</tr>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>0.48</td>
<td>Library QGPL</td>
</tr>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>8.35</td>
<td>Library QUSRSYS</td>
</tr>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>87.67</td>
<td>Extended Base Support</td>
</tr>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>1.40</td>
<td>Online Information</td>
</tr>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>135.66</td>
<td>Extended Base Directory Support</td>
</tr>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>0.00</td>
<td>System/36 Environment</td>
</tr>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>0.00</td>
<td>System/38 Environment</td>
</tr>
</tbody>
</table>

Target release: ........................................ V7R2M0
Estimated additional storage for selections (M): ........ 3219.74

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

More...

F3=Exit      F11=Display expected release      F12=Cancel      F19=Display trademarks
F11 – Expected release

<table>
<thead>
<tr>
<th>Opt</th>
<th>Licensed Program</th>
<th>Expected Release</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5770999</td>
<td>V7R2M0</td>
<td>Licensed Internal Code</td>
</tr>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>V7R2M0</td>
<td>IBM i</td>
</tr>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>V7R2M0</td>
<td>Library QGPL</td>
</tr>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>V7R2M0</td>
<td>Library QUSRYSYS</td>
</tr>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>V7R2M0</td>
<td>Extended Base Support</td>
</tr>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>V7R2M0</td>
<td>Online Information</td>
</tr>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>V7R2M0</td>
<td>Extended Base Directory Support</td>
</tr>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>V7R2M0</td>
<td>System/36 Environment</td>
</tr>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>V7R2M0</td>
<td>System/38 Environment</td>
</tr>
</tbody>
</table>

F3=Exit    F11=Display expected action    F12=Cancel    F19=Display trademarks
F11 – Expected Action

<table>
<thead>
<tr>
<th>Opt</th>
<th>Program</th>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5770JV1</td>
<td>Replace</td>
<td>IBM Developer Kit for Java</td>
</tr>
<tr>
<td>1</td>
<td>5770JV1</td>
<td>Replace</td>
<td>Java SE 6 32 bit</td>
</tr>
<tr>
<td>1</td>
<td>5770JV1</td>
<td>Replace</td>
<td>Java SE 6 64 bit</td>
</tr>
<tr>
<td>1</td>
<td>5770JV1</td>
<td>Add</td>
<td>Java SE 7 32 bit</td>
</tr>
<tr>
<td>1</td>
<td>5770JV1</td>
<td>Add</td>
<td>Java SE 7 64 bit</td>
</tr>
<tr>
<td>1</td>
<td>5770MG1</td>
<td></td>
<td>IBM Managed System Services for i</td>
</tr>
<tr>
<td>1</td>
<td>5770NAE</td>
<td>Replace</td>
<td>IBM Network Authentication Enablement for i</td>
</tr>
<tr>
<td>1</td>
<td>5733OMF</td>
<td>Replace</td>
<td>OmniFind Text Search Server for DB2 for i</td>
</tr>
<tr>
<td>1</td>
<td>5770PT1</td>
<td>Replace</td>
<td>IBM Performance Tools for i</td>
</tr>
</tbody>
</table>

F3=Exit    F11=Display product option  F12=Cancel  F19=Display trademarks

Make more changes or press Enter to confirm changes.
Our menu

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
  - Allocate additional space for LIC
  - Keep disk configuration

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

1902 - Session successfully started
Software to Delete – Should be Empty

Target release . . . : V7R2M0

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

<table>
<thead>
<tr>
<th>Opt</th>
<th>Program</th>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5733Q2</td>
<td>*BASE</td>
<td></td>
<td>IBM DB2 Web Query for i</td>
</tr>
<tr>
<td>5733Q2</td>
<td>1</td>
<td></td>
<td>Active Reports</td>
</tr>
<tr>
<td>5733Q2</td>
<td>2</td>
<td></td>
<td>OLAP Enablement</td>
</tr>
<tr>
<td>5733Q2</td>
<td>4</td>
<td></td>
<td>Run Time User Enablement</td>
</tr>
<tr>
<td>5733Q2</td>
<td>5</td>
<td></td>
<td>Spreadsheet Client</td>
</tr>
<tr>
<td>5733Q2</td>
<td>6</td>
<td></td>
<td>Adapter for Microsoft SQL Server</td>
</tr>
</tbody>
</table>

F3=Exit  F9=Command line  F11=Display reasons  F12=Cancel  F19=Display trademarks
Software not found on Media

<table>
<thead>
<tr>
<th>Licensed</th>
<th>Product</th>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
</table>

Target release: V7R2M0

Type options, press Enter:

5 = Display release to release mapping

Caution

F3 = Exit  F12 = Cancel  F19 = Display trademarks
Software for Target release

![Software for Target release screenshot](image)

<table>
<thead>
<tr>
<th>Opt</th>
<th>Program</th>
<th>Description</th>
<th>Expected Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>Digital Certificate Manager</td>
<td>Replace</td>
</tr>
<tr>
<td>2</td>
<td>5770SS1</td>
<td>International Components for Unicode</td>
<td>Replace</td>
</tr>
<tr>
<td>3</td>
<td>5770SS1</td>
<td>Additional Fonts</td>
<td>Replace</td>
</tr>
<tr>
<td>4</td>
<td>5770SS1</td>
<td>IBM Advanced Data Security for i</td>
<td>Add</td>
</tr>
<tr>
<td>5</td>
<td>5770DG1</td>
<td>IBM HTTP Server for i</td>
<td>Replace</td>
</tr>
<tr>
<td>6</td>
<td>5770JV1</td>
<td>IBM Developer Kit for Java</td>
<td>Replace</td>
</tr>
<tr>
<td>7</td>
<td>5770JV1</td>
<td>Java SE 6 32 bit</td>
<td>Replace</td>
</tr>
<tr>
<td>8</td>
<td>5770JV1</td>
<td>Java SE 6 64 bit</td>
<td>Replace</td>
</tr>
<tr>
<td>9</td>
<td>5770JV1</td>
<td>Java SE 7 32 bit</td>
<td>Add</td>
</tr>
</tbody>
</table>

F3=Exit    F9=Command line    F11=Display view 2    F12=Cancel
F19=Display trademarks
Accept Software Licenses

Currently selected language: English

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

<table>
<thead>
<tr>
<th>Opt</th>
<th>Licensed Program</th>
<th>Product Option</th>
<th>Product Release</th>
<th>Accept Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>*MCHCDD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>*BASE</td>
<td>V7R2M0</td>
<td>No</td>
</tr>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>13</td>
<td>V7R2M0</td>
<td>No</td>
</tr>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>29</td>
<td>V7R2M0</td>
<td>No</td>
</tr>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>30</td>
<td>V7R2M0</td>
<td>No</td>
</tr>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>31</td>
<td>V7R2M0</td>
<td>No</td>
</tr>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>33</td>
<td>V7R2M0</td>
<td>No</td>
</tr>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>39</td>
<td>V7R2M0</td>
<td>No</td>
</tr>
<tr>
<td>1</td>
<td>5770SS1</td>
<td>47</td>
<td>V7R2M0</td>
<td>No</td>
</tr>
<tr>
<td>1</td>
<td>5770DG1</td>
<td>*BASE</td>
<td>V7R2M0</td>
<td>No</td>
</tr>
<tr>
<td>1</td>
<td>5770JV1</td>
<td>*BASE</td>
<td>V7R2M0</td>
<td>No</td>
</tr>
</tbody>
</table>

F3=Exit  F11=Display description  F12=Cancel  F13=Select language  
F19=Display trademarks  F22=Restore software agreements
Accept Software Licenses

SOFTWARE AGREEMENT

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.

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

More...
Everyone must display YES
Estimate Additional Storage

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
We have enough Disk space

**Estimated Storage Requirements for System ASP**

- **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
Set Console Type

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

Selection

F3=Exit  F10=Command entry  F12=Cancel
Select Console

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

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

1902 - Session successfully started
Select YOUR console

Select Console

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

Select one of the following:
  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
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 !!!
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
# No Commitment Definitions

A session is initiated successfully.

Options for the commitment definitions window:

- **5**: Display status
- **12**: Work with job
- **14**: Forced commit
- **16**: Forced rollback

<table>
<thead>
<tr>
<th>Commitment</th>
<th>Job</th>
<th>Job</th>
<th>Job</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opt</td>
<td>Definition</td>
<td>Number</td>
<td>User</td>
</tr>
<tr>
<td></td>
<td>Name</td>
<td>Thread</td>
<td>User</td>
</tr>
</tbody>
</table>

(No commitment definitions are active)

**Keyboard Shortcuts:**

- **F3**: Exit
- **F5**: Refresh
- **F9**: Command line
- **F11**: Display resync in progress
- **F12**: Cancel
- **F16**: Sort by user
- **F17**: Position to
- **F23**: More options
Most important Step – FULL SAVE (21 or BRMS)

Select one of the following:

Save System and User Data
20. Define save system and user data defaults
21. Entire system
22. System data only
23. All user data

Save Document Library Objects
30. All documents, folders, and mail
31. New and changed documents, new folders, all mail
32. Documents and folders
33. Mail only
34. Calendars

Don’t Forget
More...

Selection or command

F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F16=System Main menu

20/009
Verify for Upgrade

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

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

1902 - Session successfully started
NOT Good
Work with Image Catalog Entries

System: NORMAN

Catalog . . . : UPGRADE
Type . . . . : Optical
Directory . . : /V6R1

Status . . . : Ready
Device . . . : OPTVRT01

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

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.
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

Power Down System (PWRDWN SYS)

Type choices, press Enter.

- How to end: *CNTRLD
- Controlled end delay time: 30 (Seconds, *NOLIMIT)
- Restart options:
  - Restart after power down: *YES
  - Restart type: *IPLA
  - IPL source: *IMGCLG
  - Image catalog: V72upgrade

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

902 - Session successfully started
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

+---------------------------------------------------+
Stage 2 | XX % |
+---------------------------------------------------+

Installation Stage                                                                 Objects

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

System: ITECHO5

Licensed programs processed: 16 of 67

<table>
<thead>
<tr>
<th>Program</th>
<th>Option</th>
<th>Description</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>5770SS1</td>
<td>3</td>
<td>Extended Base Directory Support</td>
<td>*PGM</td>
</tr>
<tr>
<td>5770SS1</td>
<td>8</td>
<td>AFP Compatibility Fonts</td>
<td>*PGM</td>
</tr>
<tr>
<td>5770SS1</td>
<td>12</td>
<td>Host Servers</td>
<td>*PGM</td>
</tr>
<tr>
<td>5770SS1</td>
<td>13</td>
<td>System Openness Includes</td>
<td>*PGM</td>
</tr>
<tr>
<td>5770SS1</td>
<td>29</td>
<td>Integrated Server Support</td>
<td>*PGM</td>
</tr>
<tr>
<td>5770SS1</td>
<td>33</td>
<td>Portable App Solutions Environment</td>
<td>*PGM</td>
</tr>
<tr>
<td>5770SS1</td>
<td>43</td>
<td>Additional Fonts</td>
<td>*PGM</td>
</tr>
<tr>
<td>5770BR1</td>
<td>*BASE</td>
<td>IBM Backup, Recovery and Media Services for iSeries</td>
<td>*PGM</td>
</tr>
<tr>
<td>5770DG1</td>
<td>*BASE</td>
<td>IBM HTTP Server for iSeries</td>
<td>*PGM</td>
</tr>
<tr>
<td>5781JV1</td>
<td>*BASE</td>
<td>IBM Developer Kit for Java</td>
<td>*PGM</td>
</tr>
<tr>
<td>5770NAE</td>
<td>*BASE</td>
<td>IBM Network Authentication Enablement for iSeries</td>
<td>*PGM</td>
</tr>
<tr>
<td>5770TC1</td>
<td>*BASE</td>
<td>IBM TCP/IP Connectivity Utilities for iSeries</td>
<td>*PGM</td>
</tr>
</tbody>
</table>

Copying temporary files from installation device
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

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

Selection or command

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

Display History Log Contents

V7R1M0 version, release and modification level of library QSYS installed.
Licensed program installation process started.
Install of IBM i directories completed.
Library QGPL installed.
Library QUSR SY S installed.
*PGM objects for product 5770SS1 option 1 release V7R1M0 restored.
*PGM objects for licensed program 5722BZ1 option *BASE already installed.
*LNG objects for NLV 2984 for product 5770SS1 option 1 release V7R1M0 restore
*PGM objects for product 5770SS1 option 2 release V7R1M0 restored.
*PGM objects for product 5770SS1 option 7 release V7R1M0 restored.
*PGM objects for product 5770SS1 option 44 release V7R1M0 restored.
*PGM objects for product 5770SS1 option 22 release V7R1M0 restored.
*PGM objects for product 5770SS1 option 18 release V7R1M0 restored.
License key information not found.
*PGM objects for product 5770QU1 option *BASE release V7R1M0 restored.
License key information not found.
*LNG objects for NLV 2984 for product 5770SS1 option 22 release V7R1M0 restore

Press Enter to continue.
F3=Exit   F10=Display all   F12=Cancel
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.

Press Enter to continue.

F3=Exit  F10=Display all  F12=Cancel
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
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

1  192.168.110.3 interface not started.

2  Conversion of mail logs complete.

3  0 writers started. 1 writers did not start.

4  Initialization of calendar files complete.

5  Line ETHERNET2 failed.

6  Initialize System (INZSYS) started.

7  Interface ::1 is active.

8  IPv6 interface started successfully.

9  Interface 192.168.210.3 is active.

10 User QTCP started IP interface 192.168.210.3 on ETHERNET.

11 Controller ETHERNET contacted on line ETHERNET.

12 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
INZSYS Completed

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
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')
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