IBM System i High Availability Solutions Manager helps you administer, configure, and manage your high availability solution

At a glance

System i™ High Availability Solutions Manager (HASM) delivers:

- Complete high-availability solution based on independent auxiliary storage pools (IASPs) using cross-site mirroring (XSM), Metro Mirror, Global Mirror, FlashCopy®, and system administrative domain

- GUI to manage clusters, resource groups, and domains

- Green screen interface for command-line management

For ordering, contact:

Your IBM representative or the Americas Call Centers at

   800-IBM-CALL Reference: AE001

Overview

High Availability Solutions Manager (HASM) is a high availability clustering offering for the i5/OS™ V6R1 operating system. HASM, when combined with IASPs and HASR (i5/OS option 41), enables a complete end-to-end hardware-based clustering solution for high availability and disaster recovery operations. HASM along with cross-site mirroring (XSM) enables solutions to be deployed via the IBM DS8000™ storage server or internal disk. It also includes tools that enable administrators to configure and manage high availability solutions using one of two GUIs as well as the option for a command-line interface.

Key prerequisites

- Systems must be running i5/OS V6R1.

- Applications and data must be deployed using IASPs. Several commercial applications are available to take advantage of IASPs.

Planned availability date

March 21, 2008

Description

System i High Availability Solutions Manager (5761-HAS)

System i High Availability Solutions Manager (HASM) helps protect critical business applications from outages. Combined with i5/OS V6R1, HASM delivers tools for configuring, monitoring, and managing your high availability clustering solution.

HASM includes three types of interfaces for controlling and managing the high availability environment:

- HASM solution-based GUI for small business environments (deploying on a single IASP topology, which can include a mirrored copy via geographic mirroring)
- Cluster Resource Services (task-based) GUI for all environments
- Traditional command-line interface

GUI operations are deployed via IBM Systems Director for i5/OS, a Web-based console.

These user interfaces invoke cross-site mirroring (XSM) to manage geographic mirroring (native i5/OS replication), Metro Mirror (DS8000 synchronous replication), or global mirroring (DS8000 asynchronous replication). Using either the command-line interface or the task-based GUI, you can also perform FlashCopy operations on the DS8000 server.

Note: The GUI is planned to be available via PTF by June 13, 2008. Global mirroring is planned to be available via PTF on September 19, 2008. To find the appropriate PTFs, visit

http://www-912.ibm.com/s_dir/slkbase.nsf/recommendedfixes

HASM, along with i5/OS V6R1, offers the following functions and benefits:

- i5/OS V6R1 enables integrated support that uses i5/OS and HASM to enable an end-to-end high availability deployment and management solution. You can cluster partitions on a single system, multiple systems, or a combination of systems. HASM capabilities include switching of additional switchable devices as well as IASPs. These include printers, tape and optical devices, various communication line descriptions, and network server descriptions.
- Cluster administrative domain covers the majority of system-based objects required by switchable applications. This means that in most cases, the application environment on the cluster nodes are synchronized. Application and data can be activated seamlessly on an alternate node.
- HASM also includes integrated source and target side tracking for XSM and geographic mirroring. This means that when you detach a target system, the resync operation, after reattaching, includes only the changed objects on the source and target system.
- XSM enables you to perform role-swap operations using Metro Mirror, a synchronous replication product for the DS8000 server. You can readily perform both planned and unplanned switching operations with minimal impact on operational procedures. You should use Metro Mirror for best-case recovery point objective (RPO) and recovery time objective (RTO).

For disaster recovery solutions, you need to have a remote recovery center. In such cases the primary objective is not RTO but rather RPO. You can use XSM to manage geographic mirror to perform asynchronous data replication operations.

Accessibility by people with disabilities

You can request a U.S. Section 508 Voluntary Product Accessibility Template (VPAT) containing details on accessibility compliance at

http://www.ibm.com/able/product_accessibility/index.html

Product positioning

HASM, when combined with i5/OS V6R1, is the first end-to-end, native i5/OS high availability

solution. It is optimized for IASP-based solutions deployed either with internal or external storage. This product offering is similar to the HACMP™ product, which is widely deployed in AIX® application environments.

Traditionally, high availability solutions in the i5/OS environment are created by IBM ISVs who deliver logical replication-based solutions (also known as software solutions).

Those solutions are optimized for replicating and recovering data, particularly for geographically dispersed environments like disaster recovery operations.

HASM and i5/OS V6R1 are designed and optimized for full high availability. True high availability includes regular and sustained role-swap operations. The primary system becomes the backup system and the backup system becomes the primary system. This configuration remains in place until the next role swap operations, when the two change roles.

Who should consider HASM:

- Anyone considering or planning on deploying an IASP-based high availability solution.

- Clients planning to implement a DS8000 storage server. With HASM and XSM, you can manage DS8000-based high availability operations from IBM Systems Director, a Web-based console. You should purchase i5/OS option 41 and HASM for two nodes in the high availability cluster. Then purchase two copies of Metro Mirror as the replication service that synchronously creates two copies of the IASP. You can use the task-based GUI (as opposed to the solution-based GUI) or the command-based interface (for those who prefer the green screen).

  For most high availability operations, you should use synchronous replication. This ensures that the mirrored pairs of IASPs are always synchronized with the application, and it eliminates loss of in-flight data.

  The DS8000 fiber attach and I/O enhancements with i5/OS V6R1 put the performance on par with internal disk operations, making it likely that many users of 570 and 595 systems will vary regarding interest in deploying the DS8000 servers for their storage options. Those 570 and 595 systems that are in need of a high availability solution can deploy i5/OS IASP clustering and Metro Mirror for campus-level operations. For distant replication operations you should consider using either Global Mirror or one of the logical replication solutions. Another advantage of using the DS8000 server is that you can manage FlashCopy operations from the task-based GUI.

- If you have a smaller installation looking for simple-to-manage high-availability environments, consider using HASM with the solutions-based GUI, enabling you to manage the new environment with only an understanding of the basic operational concepts. This GUI enables qualified partners to deploy the IASP environment, enabling you to manage the new environment with basic operational concepts. In this environment, you use XSM to manage geographic mirroring (the native i5/OS replication method) to create synchronous copies of the IASPs. After they are deployed, they are ready for easy-to-use high availability operations. At this time there is no asynchronous version of geographic mirroring. If you use the DS8000 server, you can also choose to use only geographic mirroring as opposed to deploying the Metro Mirror option.

- If you are currently using a logical replication-based solution, you may have not moved to full high availability operations where regular and sustained role swaps are conducted. HASM and i5/OS V6R1 are designed for you to move up to full high availability. The key prerequisite is the deployment of IASPs. Many commercial applications are enabled for IASP solution deployment. IBM representatives and IBM Business Partners can offer assistance and services to convert your application and data structure into an IASP topology.

- If you use a storage server for basic data replication and recovery and are using SAN storage servers to replicate data for data recoverability but are not using IASP, you will not be able to switch operations. Clustering does not perform full high availability operations. Using the basic storage server replication technology is good for data recoverability, but does nothing for switching operations or recovery time minimization. An IPL is required to attach the second copy to the backup environment. In the event of an unplanned outage, an abnormal IPL is required. To use those storage servers for true high availability, it is time to consider HASM. If you are looking at a storage server solution provider that cannot support HASM, think again. You might want to keep your options open and be ready to deploy HASM.

Business Partner information

If you are a Direct Reseller - System Reseller acquiring products from IBM, you may link directly

to Business Partner information for this announcement. A PartnerWorld ID and password are required (use IBM ID).

BP Attachment for Announcement Letter 208-015

https://www.ibm.com/partnerworld/mem/sla.jsp?num=208-015

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Product information is available via the Offering Information Web site

http://www.ibm.com/common/ssi

Publications

No publications are shipped with this programs.

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http://publib;boulder.ibm.com/infocenter/systems

Technical information

Specified operating environment

Hardware requirements: System i™ models 515, 520, 525, 550, 570, 595, 800, 810, 825, 870, 890, and MMA.

HASM is also supported on BladeCenter® model 7998-61X.

Software requirements: i5/OS™ V6R1

Planning information

Direct customer support

For technical support or assistance, contact your IBM representative or visit

http://www.ibm.com/support

Packaging: System i High Availability Solutions Manager is available on CD-ROM.

Security, auditability, and control

System i High Availability Solutions Manager uses the security and auditability features of i5/OS.

The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communication facilities.

Software Services

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  http://www.ibm.com/software/sw-services/

Ordering information

Charge metric

Program name	Part number or PID number	Charge metric
System i High Availability Solutions Manager	5761-HAS	Per Processor

Processor

A processor (commonly called a CPU or core) is a functional unit within a computing device that interprets and executes instructions. A processor consists of at least an instruction control unit and one or more arithmetic or logic unit. With multicore technology, each core is considered a processor. With full capacity licensing, a proof of entitlement (PoE) must be acquired for all activated processors available for use on the server.

Concurrent user

A concurrent user is one and only one individual within or outside your enterprise. The number of PoEs required is for the highest number of users simultaneously accessing the program or any program components either directly or indirectly (via a multiplexing program, device, or application server) through any means on behalf of the user.

IBM System i High Availability Solutions Manager for V6R1 (5761-HAS)

Charge features

Initial Order

IBM System i High Availability Solutions Manager (5761-HAS)	Per Processor
Per Processor w/1Yr SWMA	0490

Other chargeable features

	Feature number
Special delivery features	
Expedite -- Customer Expense	3446

No-charge features

	Feature

Special delivery features

```
  Ship Media Only                     3470
  Ship Documentation Only             3471
```

Special delivery features

```
  Electronic SW Delivery              3450
```

Language features

```
  English U/L SBCS Primary            2924
  English U/C DBCS Primary            2938
  English U/L DBCS Primary            2984
```

Manufacturing features

```
  LPAR System Indicator               3441
```

Supply features

```
  V6R1 Supply                         5819
```

Other features

```
  ePoE Upg Reg                        2001
  SW Key 1st MT Digit V6              4001
  SW Key 2nd MT Digit V6              4002
  SW Key 3rd MT Digit V6              4003
  SW Key 4th MT Digit V6              4004
  SW Key 1st CPU Digit V6             4005
  SW Key 2nd CPU Digit V6            4006
  SW Key 3rd CPU Digit V6            4007
  SW Key 4th CPU Digit V6            4008
  SW Key 5th CPU Digit V6            4009
  SW Key 6th CPU Digit V6            4010
  SW Key 7th CPU Digit V6            4011
```

HASM 1Yr SW Maintenance (5660-HAS)

Charge features

Initial Order

```
HASM 1Yr SW Maintenance
(5660-HAS)                     Per Processor

Per Processor 1Yr Registration 1127
Per Processor 24/7 Support     1129
```

No-charge features

```
                               Feature
                               number
```

Language features

```
  Multilingual Language               2935
```

Supply features

```
     V6R1 Supply                                      5809
```

HASM 1Yr SW Maintenance After License (5661-HAS)

Charge features: Initial order

```
 HASM 1Yr SW Maintenance
 After License (5661-HAS)        Per Processor

 Per Proc 24/7 1Yr After Lic    0338

 Per Proc 1 Yr AfterLicense     0336
```

No-charge features

```
                                           Feature
                                           number

Language features

  Multilingual Language                    2935

Supply features

  V6R1 Supply                              5809
```

HASM 3Yr SW Maintenance Registration (5662-HAS)

Charge features

```
Initial order

 HASM 3Yr SW Maintenance
 Registration (5662-HAS)        Per Processor

 Per Proc 24/7 3Yr Registration  0443

 Per Proc 3 Yr PrePay           0441
```

No-charge features

```
                                           Feature
                                           number

Language features

  Multilingual Language                    2935

Supply features

  V6R1 Supply                              5809
```

No-charge features

```
                                           Feature
                                           number

Language features

  Multilingual Language                    2935
```

```
Supply features


  V6R1 Supply                                       5809
```

HASM 3Yr SW Maintenance After License (5664-HAS)

Charge features

```
Initial order


 HASM 3Yr SW Maintenance
 After License (5664-HAS)        Per Processor

 Per Proc 3 Yr AfterLicense      0001
 Per Proc 24/7 3Yr After Lic     0003
```

Remove Keys/ePoEs for Transferred Software (5733-NKY)

No-charge features

```
                                       Feature
                                       number

ePoE features


  System i High Avail (5761-HAS)       2515
```

System i Temporary Software License (5733-ITL)

No-charge features

```
                                       Feature
                                       number

Supply features


  System i High Availability Solutions (5761-HAS)    5826
```

This software license includes Software Maintenance, previously referred to as Software Subscription and Technical Support.

You can extend coverage for a total of three years from the date of acquisition. Order the program number, feature number, and quantity to extend coverage for your software licenses. If maintenance has expired, specify the after license feature number.

```
Software license includes 1 year Software Maintenance
5761-HAS -- System i High Availability Solutions Manager


5660-HAS Maintenance no charge 1 year registration + 1 year renewal


5662-HAS    Maintenance 3 year registration (2 year uplift)

5661-HAS -- Software Maintenance After License, 1 year
Software Maintenance After License


5664-HAS -- Software Maintenance After License, 3 year
```

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Passport Advantage applies: No

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For more information about the Passport Advantage Agreement, visit the Passport Advantage

Web site at

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System i Software Maintenance applies: No

Variable charges apply: No

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To learn how Electronic Services can work for you, visit

Prices

IBM System i High Availability Solutions Manager for V6R1 (5761-HAS)

Charge features

```
Initial order
```

IBM System i High Availability Solutions Manager (5761-HAS)	Per Processor Feature	Per Processor OTC
Per Processor w/1Yr SWMA	0490	$3,200

```
Other chargeable features
```

	Feature number	OTC
Special delivery features		
Expedite -- Customer Expense	3446	$30

HASM 1Yr SW Maintenance (5660-HAS)

Charge features

```
Initial order
```

HASM 1Yr SW Maintenance (5660-HAS)	Per Processor Feature	Per Processor OTC
Per Processor 1Yr Registration	1127	$ 0
Per Processor 24/7 Support	1129	45

HASM 1Yr SW Maintenance After License (5661-HAS)

Charge features

```
Initial order
```

HASM 1Yr SW Maintenance After License (5661-HAS)	Per Processor Feature	Per Processor OTC
Per Proc 24/7 1Yr After Lic	0338	$ 45
Per Proc 1 Yr AfterLicense	0336	1,920

HASM 3Yr SW Maintenance Registration (5662-HAS)

Charge features

```
Initial order
```

HASM 3Yr SW Maintenance Registration (5662-HAS)	Per Processor Feature	Per Processor OTC
Per Proc 24/7 3Yr Registration	0443	$ 121
Per Proc 3 Yr PrePay	0441	1,088

HASM 3Yr SW Maintenance After License (5664-HAS)

Charge features

```
Initial order
```

HASM 3Yr SW Maintenance After License (5664-HAS)	Per Processor Feature	Per Processor OTC
Per Proc 3 Yr AfterLicense	0001	$3,008
Per Proc 24/7 3Yr After Lic	0003	121

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```
Reference: AE001
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