Implementing High Availability for Oracle's JD Edwards EnterpriseOne Using IBM i

Mike Breitbach
Pat Moore
Dan Sundt

IBM Cognitive Systems
IBM i Development
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Change history

Version	Date	Editor	Editing description
1.0	01/09/13	John Brock	Original version
2.0	03/15/18	Mike Breitbach	Updates for IBM i 7.3, JDE E1 9.2, WebSphere Application Server 8.5.5, and other clarifications

Abstract

This document is intended for IBM i technical professionals interested in implementing a PowerHA® environment for the JD Edwards EnterpriseOne applications. It describes the process used to configure a PowerHA environment on external disk storage (IBM Storwize® V7000) and for migrating a WebSphere® Express and JD Edwards EnterpriseOne installation to an independent auxiliary storage pool (IASP) to enable metro mirroring, and the use of flash copy for backup operations. The configuration used is an 'all-on-i' configuration, with the web components, application, and database services all on the IBM i server. Most of the considerations in this document are applicable to any environment which includes configuring JD Edwards EnterpriseOne to run in an independent ASP.

Introduction

The quantity of online information has expanded exponentially in the modern era and people increasingly expect this information to be available. They expect to read the news, shop online, or consult their financial accounts at any time during the day or night. Easy access to information started as a competitive differentiator but has become a basic requirement for many companies. Globalization also plays an important role in this evolution as more and more enterprises have suppliers and customers all around the world. It is always the middle of the business day somewhere.

At the same time, solutions continue to become more complex and thus more difficult to recover in a timely fashion using traditional techniques such as restoring from backup media or rerunning batch reports. These pressures increase the demand for solutions that maximize the availability of an environment in order to provide uninterrupted access to information and for executing business transactions.

To address these requirements, IBM i continues to create and extend the portfolio of High Availability solutions based on independent auxiliary storage pool (IASP) support. JD Edwards World has supported an IASP environment since release A7.3 while JD Edwards EnterpriseOne has been supported since the release of EnterpriseOne Tools SP21 or 8.94.

This paper documents the procedures for migrating a JD Edwards EnterpriseOne environment into a PowerHA environment with an IASP.

Prerequisites

It is assumed that the reader has a working knowledge of the following topics:

- IBM i including some knowledge of work management
- JD Edwards EnterpriseOne configuration
- WebSphere Application Server

High availability overview

Application environments on IBM i can be protected against outages using a variety of high availability technologies. These technologies can be grouped into three general categories:

1. Switched disk
2. Cross-site mirroring (XSM)
3. Logical replication

Each of these methods will be described in the following sections.

Switched disk

A switched disk configuration utilizes disks that can be switched between different nodes in a high availability cluster. Switched disk can be used to create a simple and cost effective high availability solution for planned and some unplanned outages. In a switched disk environment only one copy of the data exists. Because there is only one copy of the data, performance is not impacted by data synchronization.

In a switched disk configuration the data is stored in an independent auxiliary storage pool (IASP). An auxiliary storage pool (ASP) is a collection of disks grouped together logically. These disks can be located on either internal or external storage. To your system an ASP looks like a single unit of storage. An IASP is an ASP that can be brought online or taken offline independently of system data or other ASPs.

In a switched disk environment, the distance between the production and backup system is limited by the physical length of the cables used to connect the systems. The maximum distance recommended is fifteen meters.

In addition to using IASP's, switched disk requires IBM i high availability cluster technology. The cluster technology is shipped with operating system option 41 “HA Switchable Resources”. An IASP must be configured as part of a high availability cluster in order to be switchable.

Cross-site mirroring

Cross-site mirroring is a collective term for high availability technologies that utilize different types of hardware replication. With hardware replication a copy of the production data is mirrored to a backup system, so two or more copies of the data will exist. The three variations of cross-site mirroring include: geographic mirror, metro mirror, and global mirror.

Geographic mirroring

Geographic mirroring utilizes page level mirroring performed at the operating system level. An exact copy of the production data is maintained on a backup system by utilizing synchronous mirroring. Synchronous mirroring means that the source system waits until acknowledgement from the target system that the data has been received. Synchronous mirroring keeps the data consistent and prevents data loss. Geographic mirroring allows for production and mirrored copies to be separated geographically. This offers protection in the event of a site-wide outage. However, because of synchronous communication, longer distances may impact performance and require more network bandwidth.

HA switchable resources (option 41 of the operating system) and IASPs are required for a geographic mirroring solution. It can be implemented using either internal disk or with an external storage server.

Metro mirror

Metro mirror is similar to geographic mirroring except that metro mirror utilizes disk sector level mirroring performed by an external storage server (SAN). In a metro mirror environment the mirroring is synchronous preventing data loss between the production and backup system. Production data and backup data can be located on the same SAN server or on different SAN servers separated geographically. With separate storage servers the production and backup storage servers can be located up to 300 kilometers apart. However, because of synchronous communication, longer distances may impact performance and/or require more network bandwidth.

External storage servers, HA switchable resources (option 41 of the operating system), and IASP's are required for a metro mirror solution.

Global mirror

Global mirror utilizes disk I/O level mirroring between SAN servers. The mirroring is asynchronous, meaning that the source system does not wait for acknowledgement from the target system that data has been received. Depending on the distance between the storage servers, this means that the data on the backup system might lag the data on the production system by a few seconds. This allows the production and the backup server to be separated by virtually unlimited distances with no impact to application performance.

External storage servers, HA switchable resources (option 41 of the operating system), and IASPs are required for a global mirror solution.

IBM i capabilities

IBM i already includes many capabilities for high availability which continue to be enhanced. Option 41 of the IBM i base operating system provides HA Switchable Resources support. IBM PowerHA SystemMirror for IBM i provides a simple, graphical interface for creating and managing clustered environments. It includes migration utilities to establish the following environments including Geographic, Metro, and Global mirroring. IBM PowerHA SystemMirror for i is a separately licensed program under the product ID 5770-HAS and is available in a standard (single local site) and enterprise (multiple site) editions. PowerHA SystemMirror for i is available for IBM i 7.1, 7.2 and 7.3.

Administrative Domains allow for managing objects which exists in the system auxiliary pool. The administrative domain simplifies management of objects such as user profiles and job descriptions in a clustered environment by automating the process of keeping objects in synch within the cluster. When the object is changed for example, the changes are automatically propagated to the other cluster nodes.

Virtualization support with the virtual I/O server (VIOS) allows external disk storage products such as the IBM DS8000® and IBM Storwize V7000 to be added to servers and shared between them, giving access to advanced features such as live partition mobility, flash copy, LUN level switching and more advanced features thru PowerHA SystemMirror for i.

For more information on these enhancements, see the following documentation:

- IBM i developerWorks: PowerHA SystemMirror for i Welcome
- IBM i developerWorks: PowerHA SystemMirror Technology Updates
- IBM i developerWorks: IBM i Virtualization Details

- IBM i developerWorks: IBM i Virtualization and Open Storage (see attachments tab)

Configuring a PowerHA environment

The example configuration (Figure 1) used in this document has two physical Power Systems ™servers. The primary server (ERPHVP) has an IBM i partition (ERPHVPHA) acting as the first partition in the PowerHA cluster and a VIOS partition for the attachment of external storage. The secondary server (ERPCLOUD) has three partitions: an IBM i partition (ERPCLOUDPHA) acting as the second partition in the cluster, a second partition (ERPCLOUDFL) to allow access to the flash copy (ERPFLASH) of the switched independent ASP (ERPIASP), and a VIOS partition for the attachment of external storage.

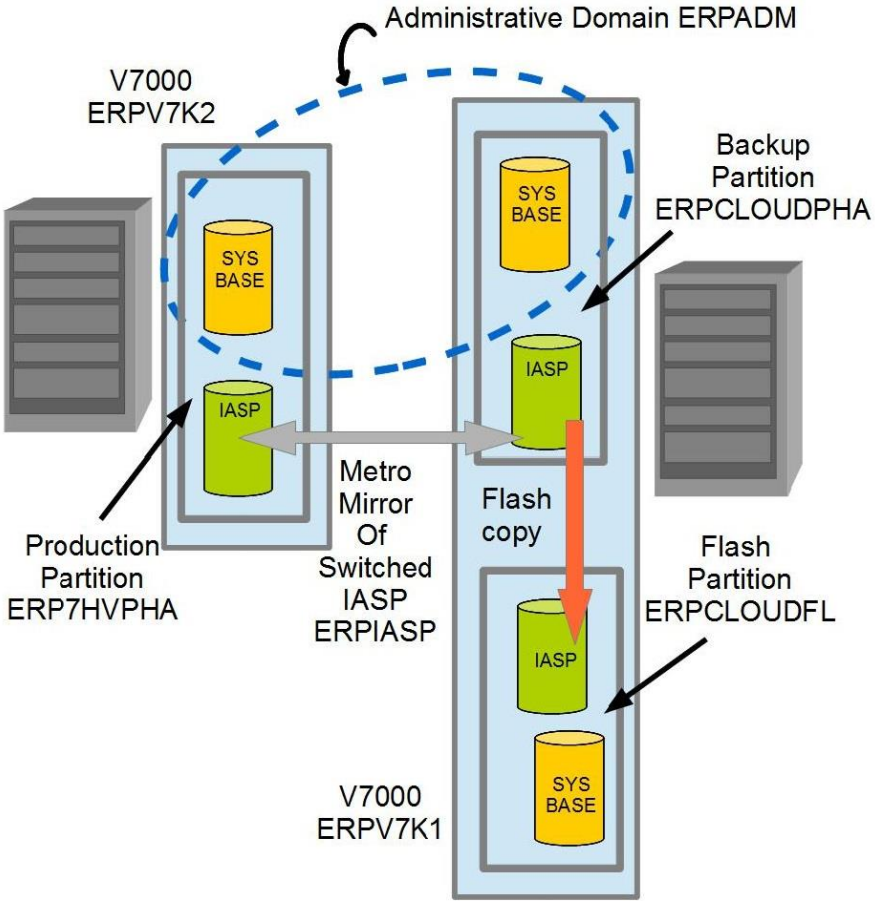


Figure 1. Example PowerHA Configuration

Disk storage is provided by IBM Storwize V7000 external storage systems with one attached to each physical server (ERPV7K2 to ERPHVP and ERPV7K1 to ERPCLOUD) and connected by a fiber channel switch (not shown). Both the system base storage (*SYSBAS) and the independent auxiliary storage pools are allocated on the V7000. This SAN device has IBM i PowerHA support first delivered with IBM i 7.1 and Technology Refresh 3 (TR3). This V7000 support is available in the base IBM i 7.2 & IBM i 7.3 releases. IBM i 7.2 or IBM i 7.3 must be installed on the IBM i partitions before the configuration described in the following section.

For detailed information on IBM PowerHA SystemMirror for i see this set of Redbooks:

- IBM PowerHA SystemMirror for i: Preparation (Volume 1 of 4) – SG24-8400
- IBM PowerHA SystemMirror for i: Using DS8000 (Volume 2 of 4) – SG24-8403
- IBM PowerHA SystemMirror for i: Using IBM Storwize (Volume 3 of 4) – SG24-8402
- IBM PowerHA SystemMirror for i: Using Geographic Mirroring (Volume 4 of 4) – SG24-8401

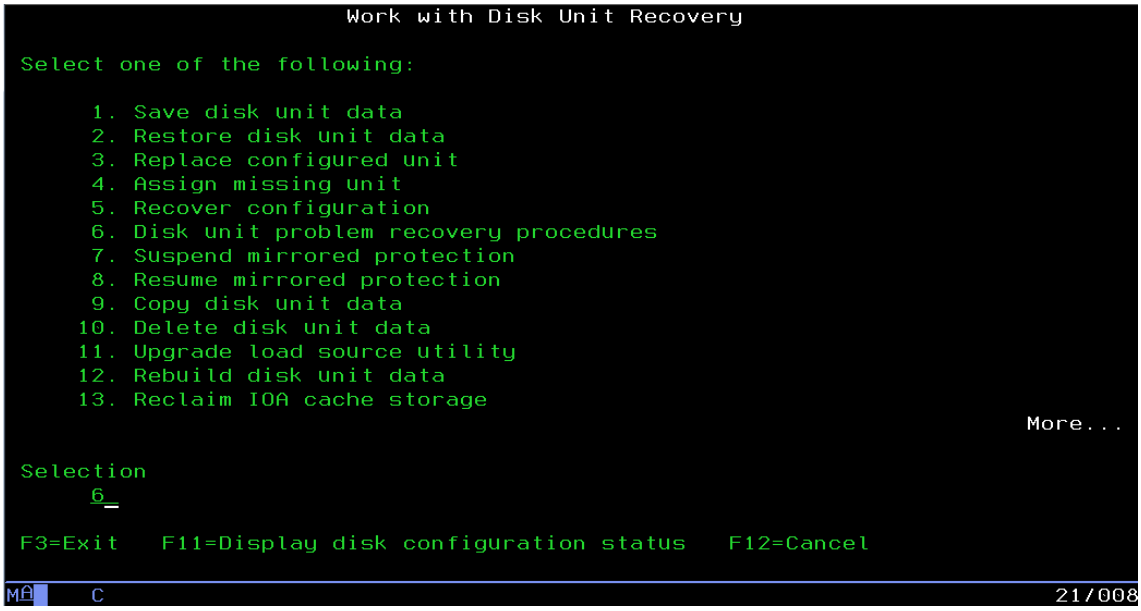
Hardware and partition configuration

This document will not describe the steps required to configure the disk space for the PowerHA environment. Here is an outline of the needed steps:

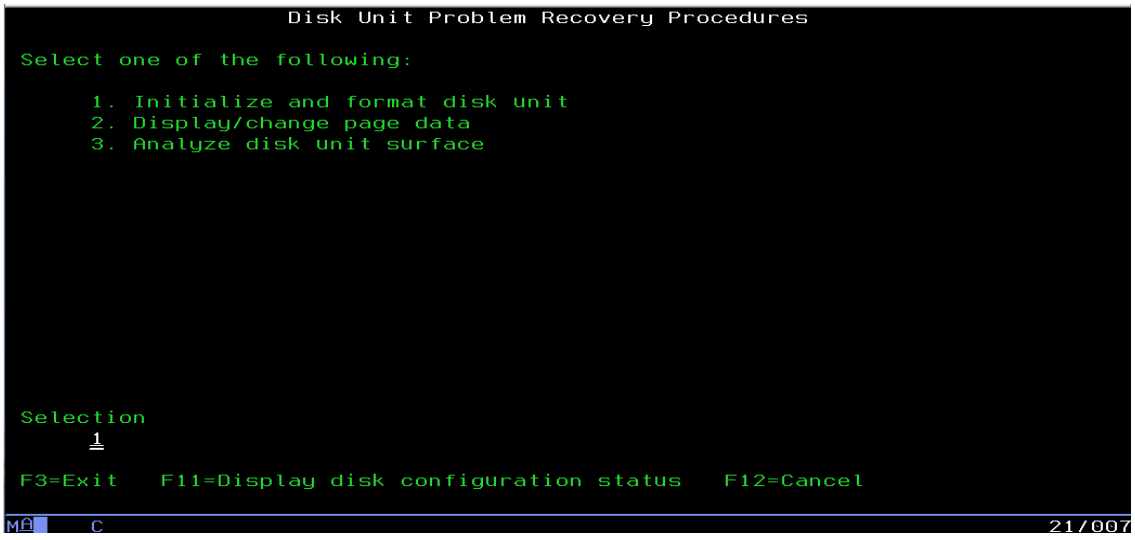
1. On the V7000, create volumes for VIOS partitions (hdisk0), one for each server VIOS partition to be created
2. Attach the fiber cards to the switch
3. On the HMC, create profiles for both VIOS partitions
4. On the switch, create a zone for each new VIOS partition
5. On the V7000, create a new host for each VIOS partition and map a volume from step 1 to that partition
6. Install both VIOS partitions
7. On the V7000's, create volumes for IBM i partitions for SYSBAS (hdisk1)
8. On the HMC, create profiles for both IBM i partitions
9. On the V7000, map each volume to one of the VIOS partitions
10. On the HMC, for each VIOS partition, map hdisk to corresponding IBM i partition
11. Install both IBM i partitions
12. On V7000 create volumes for iASP, one for primary partition (hdisk2) and one for secondary partition (hdisk3)
13. On V7000 map primary and secondary volumes for iASPs to their respective VIOS hosts
14. Telnet to each VIOS partition and run the following:
    a. cfgdev
    b. chdev -dev hdisk2 -attr reserve_policy=no_reserve
15. On the HMC, map hdisk2 to primary IBM i partition
16. On the HMC, map hdisk3 to secondary IBM i partition
17. Start each IBM i partition and from SST format the disk(s) for the IASP

At this point the operating system is installed for each partition and a disk unit is available on each partition to be used for the independent ASP (a non-configured disk unit). The PowerHA configuration will begin by initializing and formatting these disk units on each system.

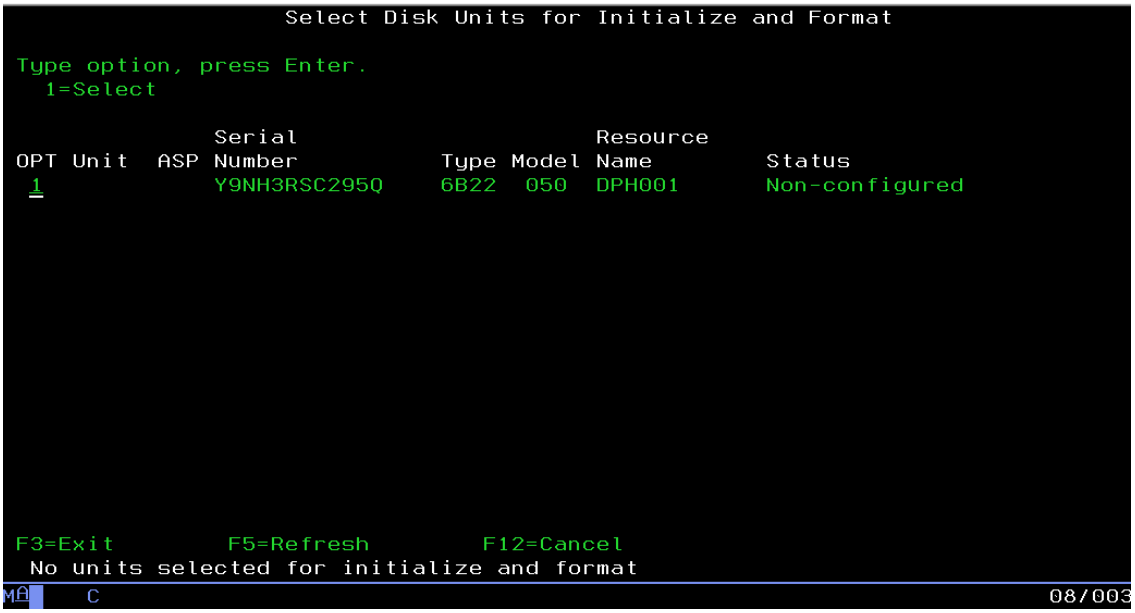
Begin by signing in to Dedicated Service Tools (DST) and choosing Work With Disk Units. Choose Work With Disk Unit Recovery on the next panel, and then option 6, Disk unit problem recovery procedures.



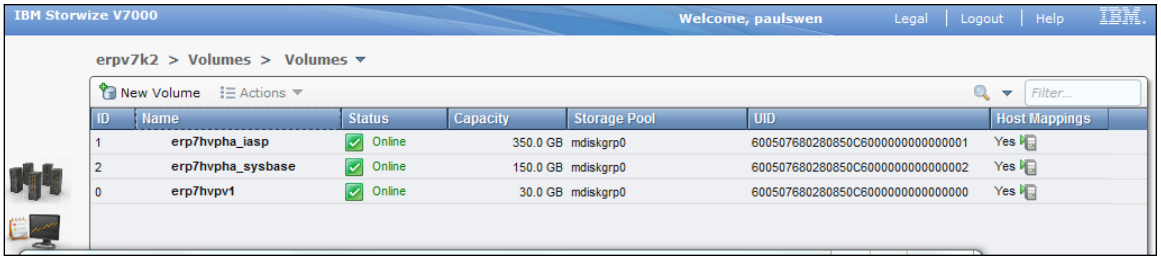
Choose option 1, initialize and format disk unit.



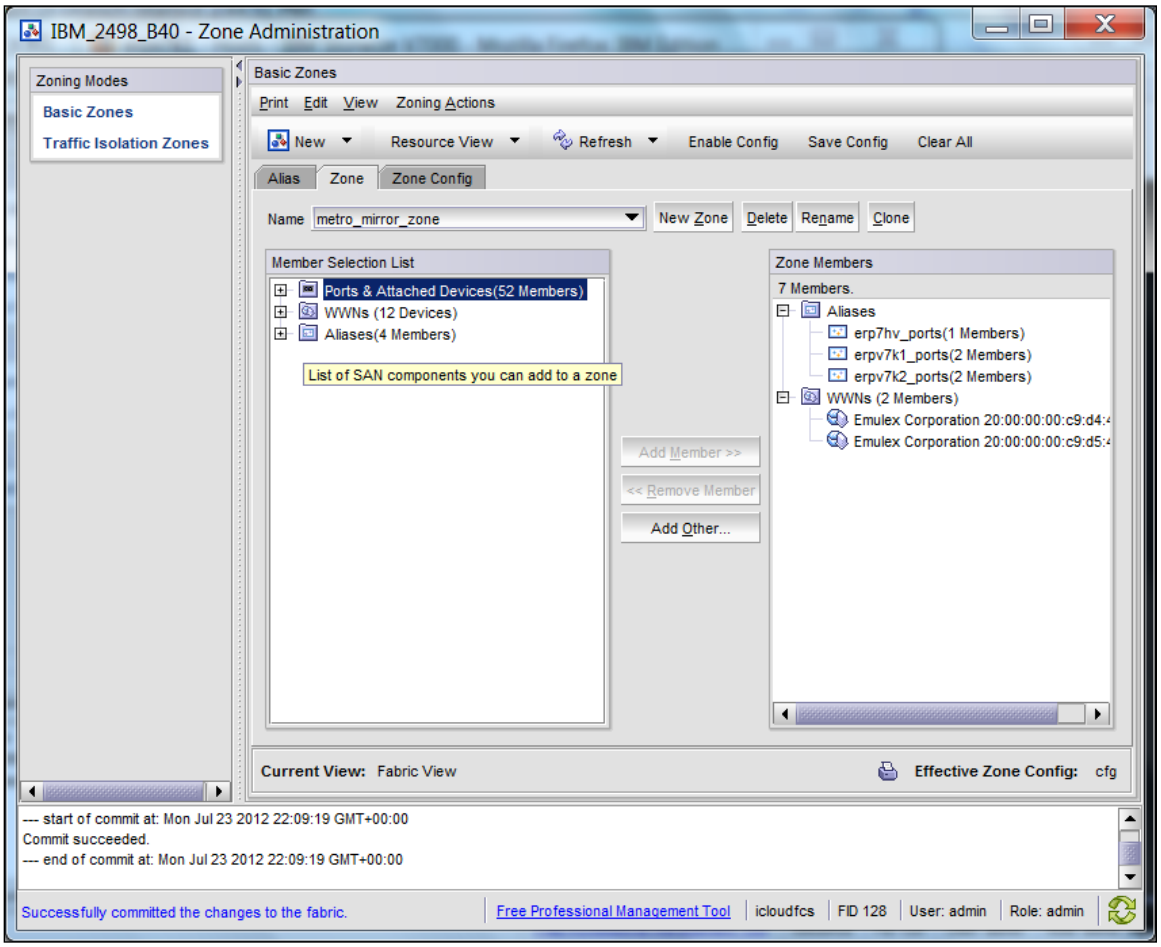
Available disk units will be listed. Select the disk unit to be used as the independent ASP.



The V7000 for the primary partition needs to have a minimum of three volumes defined. The VIOS server, the SYSBASE storage pool of the IBM i partition and the independent ASP all require a volume. Sign on to the web-based management console for the primary partition V7000 (in the example this was https://erpv7k2) and verify that the volumes have been created by moving the cursor over 'volumes' in the graphic menu on the left and then choosing 'Volumes' from the pop-up menu.



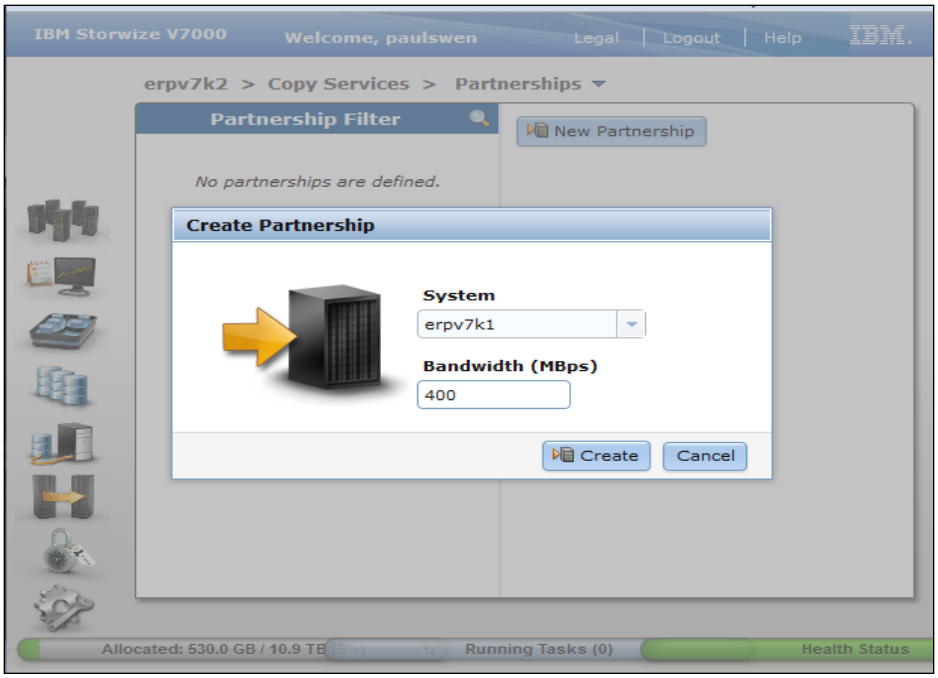
The V7000 external storage subsystems must be members of a SAN fabric. We had one fiber channel switch available, in a production configuration multiple fiber switches would be used for redundancy.

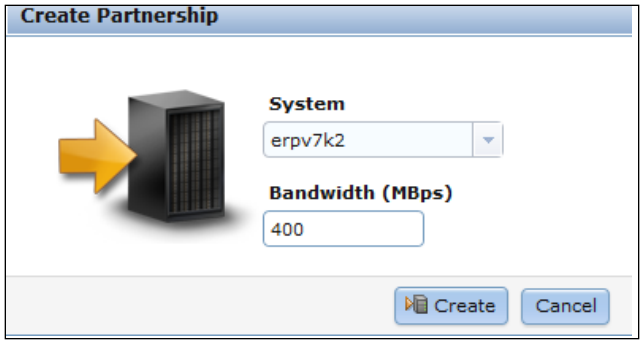


Creating V7000 copy services partnerships

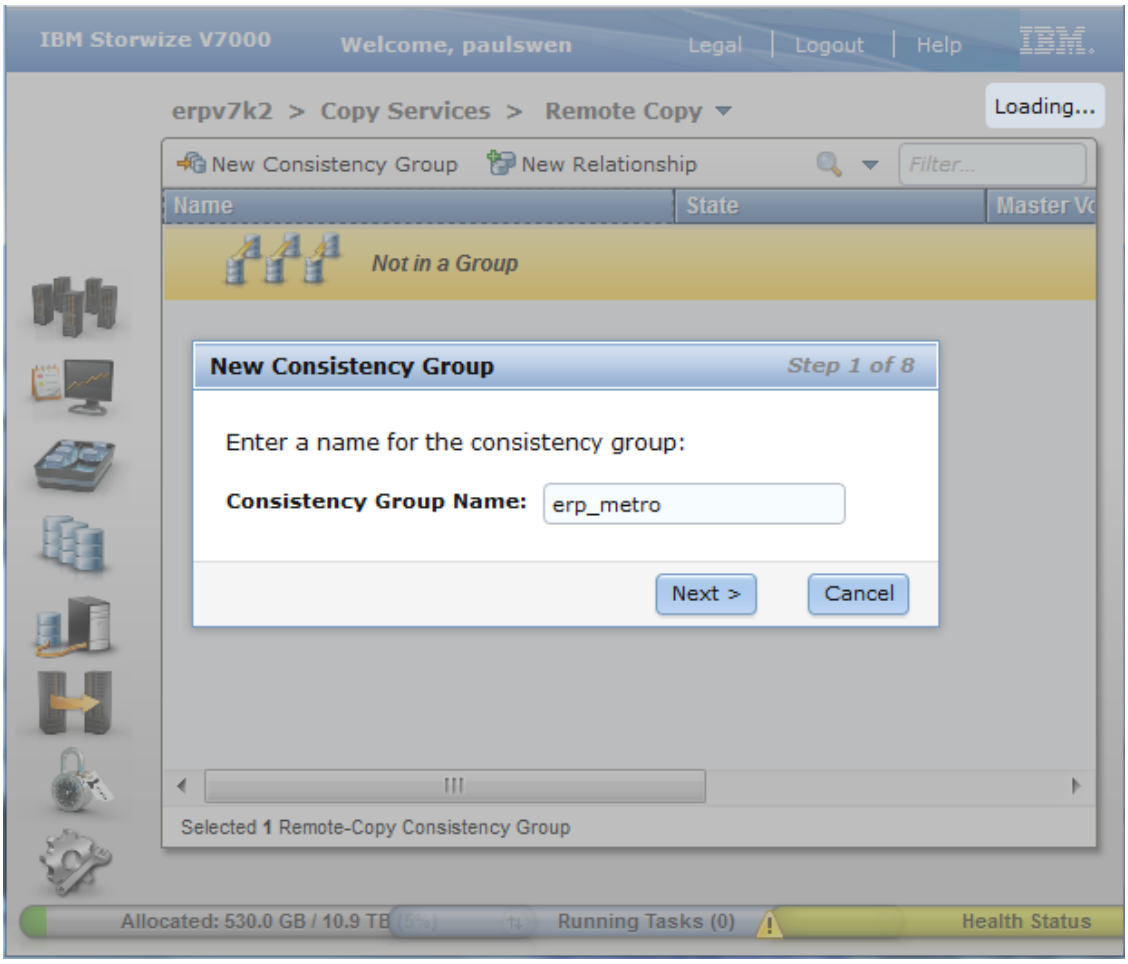
Partnerships associate a local and remote system in a cluster. This partnership must be created before a Metro Mirror or Global Mirror relationship or consistency group can be created. Create the partnership and establish remote copy before mapping volumes to hosts. If hosts are already mapped the target host can be unmapped, remote copy set up, then remapped.

To create the partnership, on the primary partition V7000, choose Copy Services → Partnerships → New Partnership. In this example there is only one eligible V7000 to use as the partner on the SAN, the secondary system's V7000. Click Create, another panel will be shown to confirm the local system as the other partner, click Create again.

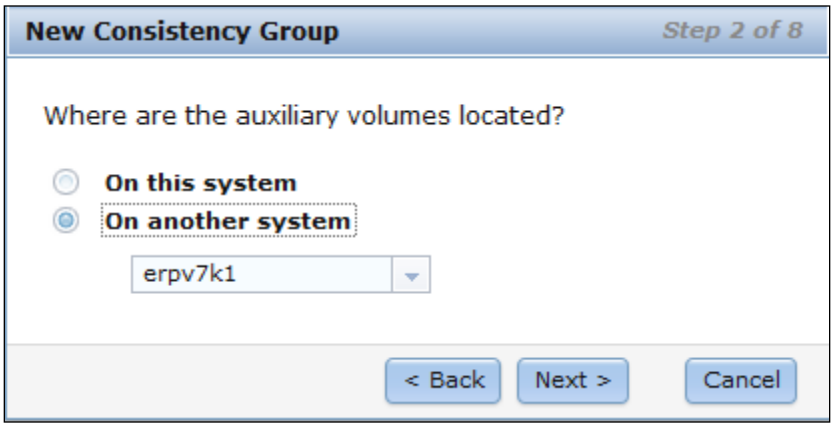




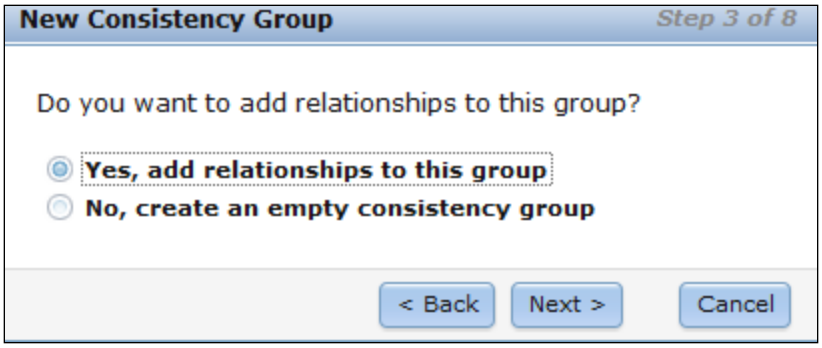
The next step is to create a consistency group to act as a container for the Metro Mirror relationship. This will be the object that controls the switched IASP on ERP7HVPHA and ERPCLOUDPHA. Storage for the IASP on each system will be added to the group. This storage will appear as a device on the primary partition. When an IASP is allocated to this storage on the primary partition, it will be mirrored to the secondary partition and therefore switchable. From Copy Services → Remote Copy, choose 'New Consistency Group'. A pop-up will appear requesting the name for the consistency group. The example uses 'erp_metro'.



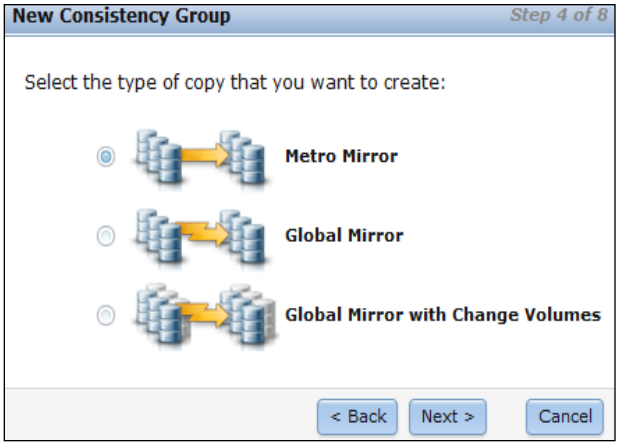
The next panel asks for the location of the auxiliary volumes, this would be the V7000 of the secondary system.



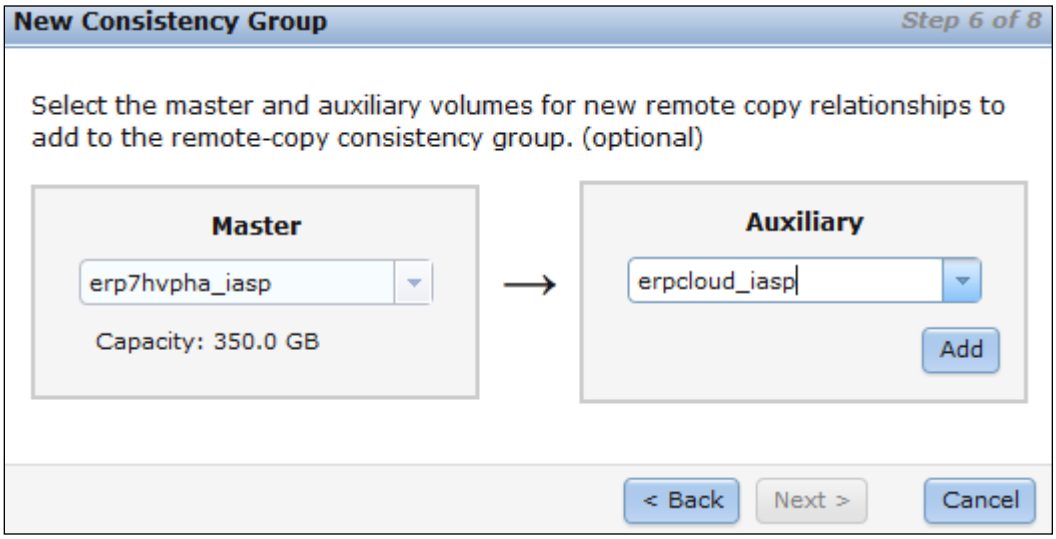
Answer “Yes” here, there is a relationship to add.



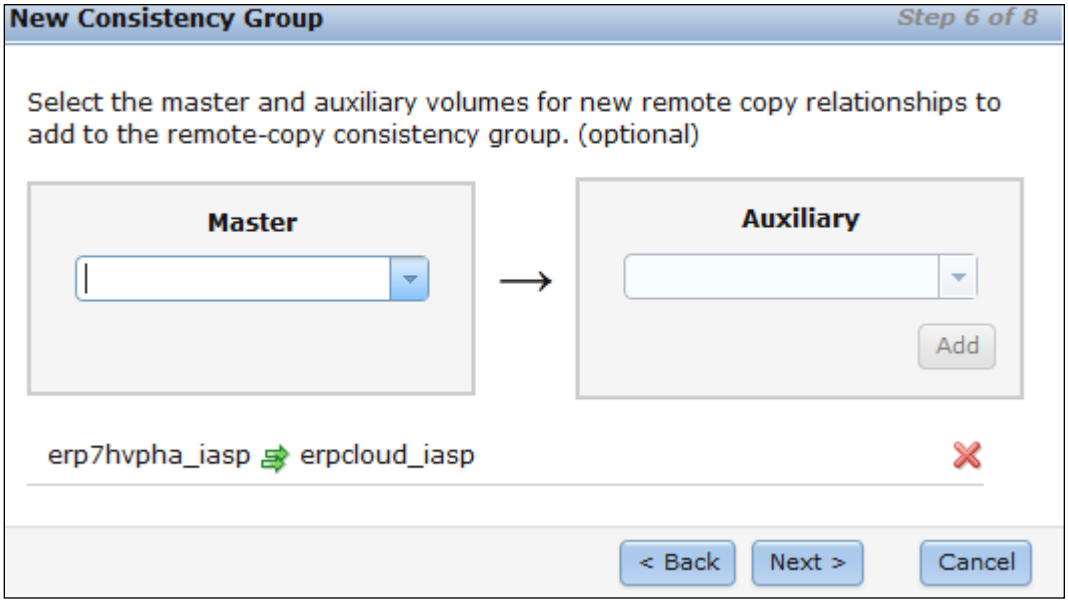
The example uses the synchronous Metro Mirror.



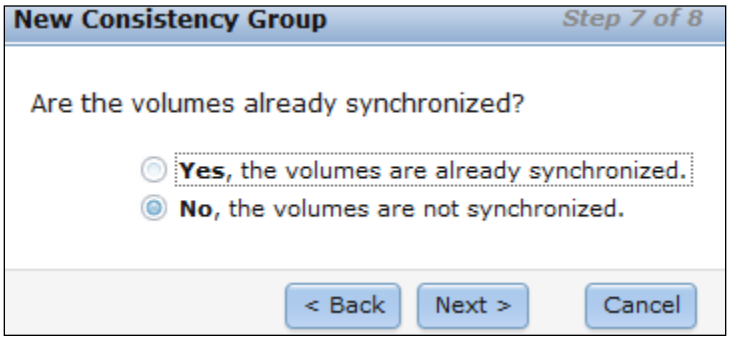
Choose the volumes for the copy. These would be the two volumes allocated for the independent ASP's on the primary and secondary servers.



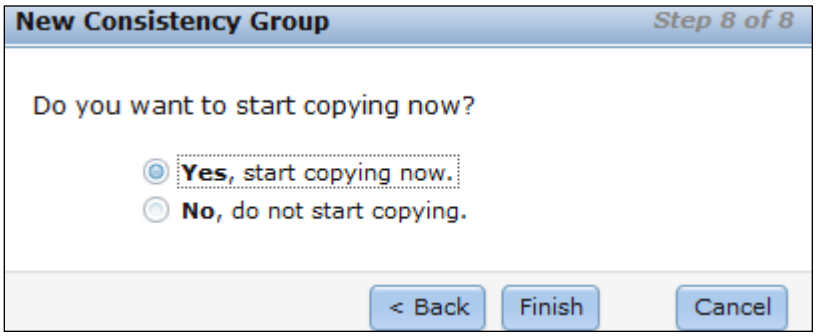
The next panel allows you to create more relationships in the group. The example only has a single relationship. Choose the 'Next' button when all desired relationships have been completed.



This step asks if the volumes are synchronized. The data on the primary has not been copied to the secondary, so they are not synchronized. Choose 'No'.



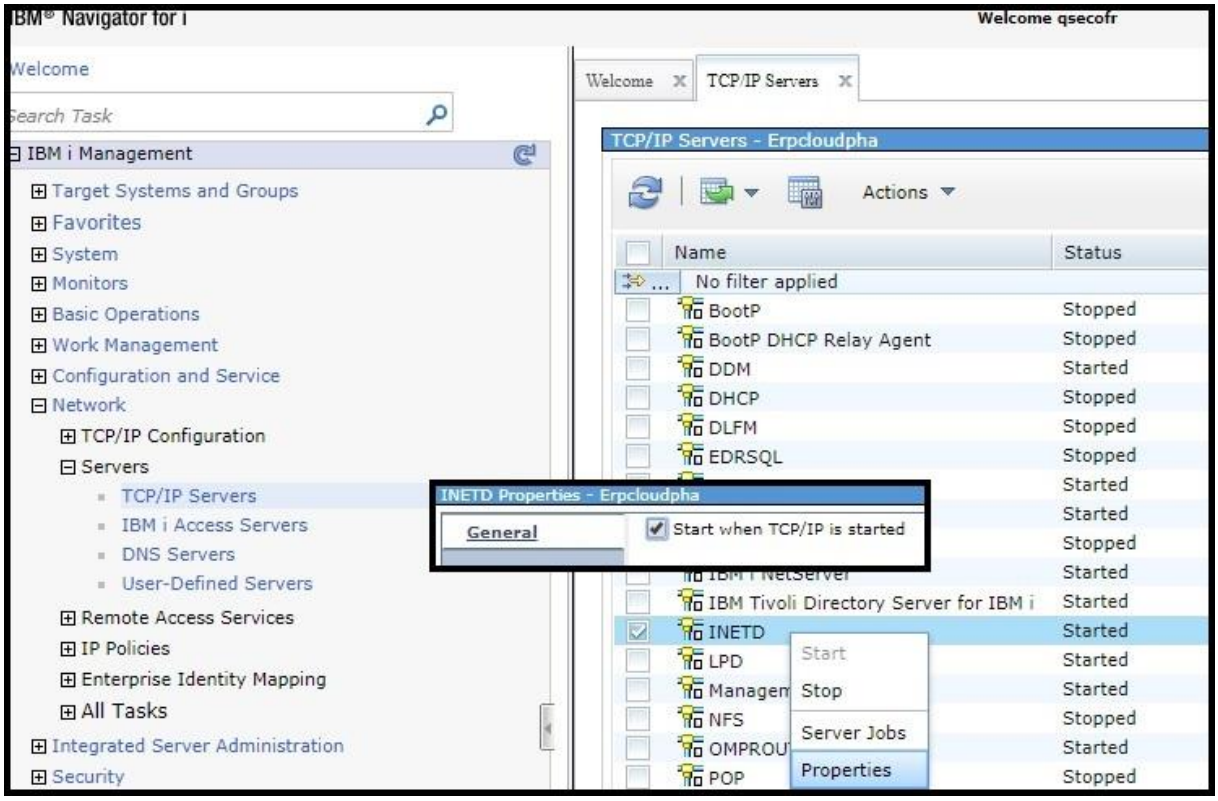
You want to start a copy to bring the volumes into synchronization. Choose yes. This step may take some time to complete as it is going to copy the entire volume from the primary to the secondary V7000.



IBM i configuration

Ensure that the TCP *INETD server is started and also ensure that the autostart value for the *INETD server is *YES. The shipped default is *NO. This value can be changed using the Change TCP Server (CHGTCPSVR) command or from IBM Navigator for i.

```
CHGTCPSVR SVRSPCVAL(*INETD) AUTOSTART(*YES)
```



Run the following commands from the IBM i command lines on both systems in the cluster.

Create the message queues that will be used to control failover of the cluster and the cluster resource group. HAMSGQ will be the cluster message queue, ERPFAIL will be the failover message queue. It is optional to define both message queues, but in this example both will be used.

```
CRTMSGQ QGPL/HAMSGQ
CRTMSGQ QGPL/ERPFAIL
```

Grant public authority *ALL on the message queues:

```
GRTOBJAUT OBJ(QGPL/HAMSGQ) OBJTYPE(*MSGQ) USER(*PUBLIC) AUT(*ALL)
GRTOBJAUT OBJ(QGPL/ERPFAIL) OBJTYPE(*MSGQ) USER(*PUBLIC) AUT(*ALL)
```

Specify that any other system can add this system as a node in a cluster:

```
CHGNETA ALWADDCLU(*ANY)
```

Allow decryptable authentication information to be retained:

```
CHGSYSVAL SYSVAL(QRETSVRSEC) VALUE('1')
```

Set the PWRDWNSYS environment variable to send an inquiry message to the operator's panel if a non-interactive job requests power down. This allows the operator to vary off any independent ASPs before powering down.

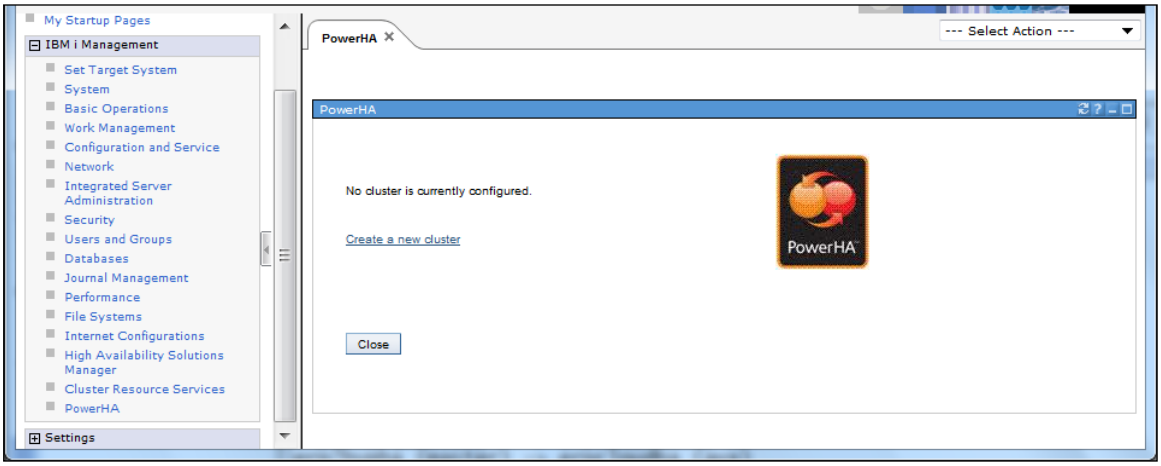
```
ADDENVVAR ENVVAR(QIBM_PWRDWNSYS_CONFIRM) LEVEL(*SYS) REPLACE(*YES)
VALUE('*YES')
```

Set the ENDSYS environment variable to display a confirmation panel, again so the independent ASPs can be varied off.

```
ADDENVVAR ENVVAR(QIBM_ENDSYS_CONFIRM) LEVEL(*SYS) REPLACE(*YES)
VALUE('*YES')
```

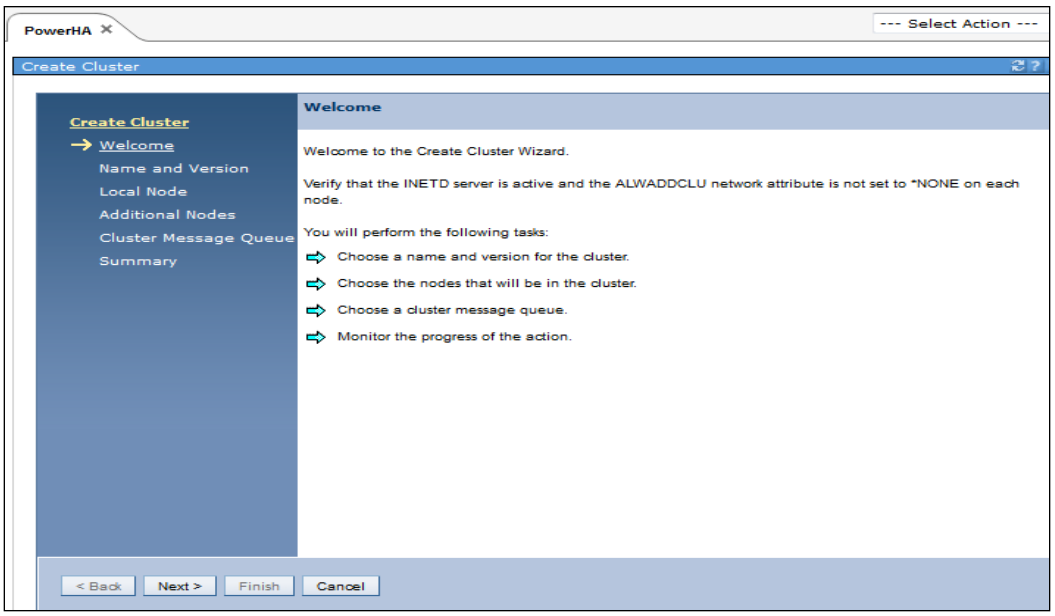
Creating the PowerHA cluster

After selecting 'PowerHA' from the left menu bar, select 'Create a new cluster' on the next panel.

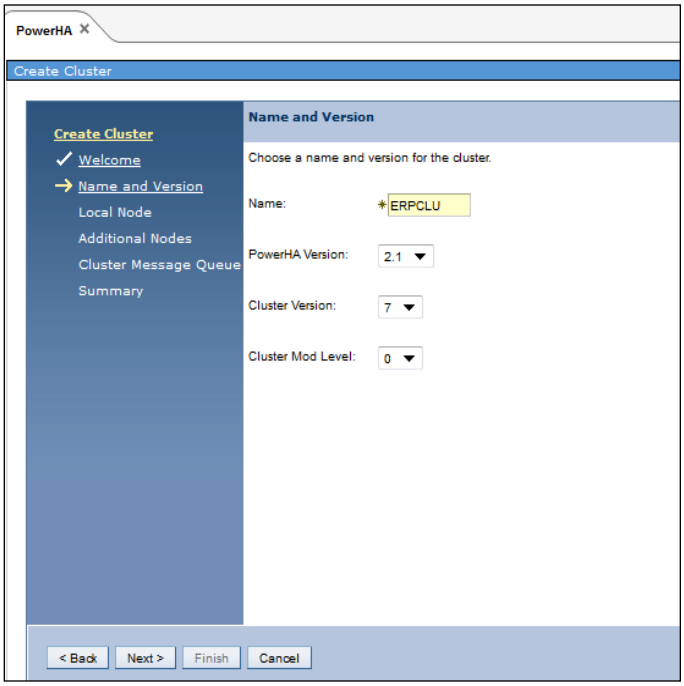


NOTE: To use the disk configuration tools from IBM Navigator for i you must have a service tools user id that is the same as the IBM i user profile you will use to sign on to Navigator. This is no longer required by the PowerHA GUI, but to use other Navigator options you'll want to have it set up. The service tools user password must have the same password in upper case as the password of the IBM i user profile. Also, the service tools security data must have the password level set to 2. The IBM i user profile must have *ALLOBJ and *SERVICE authorities. Section 2.2 of the PowerHA SystemMirror for IBM i Cookbook Redbook SG24-7994-00 has a detailed description of the steps needed to set up the service tools user id.

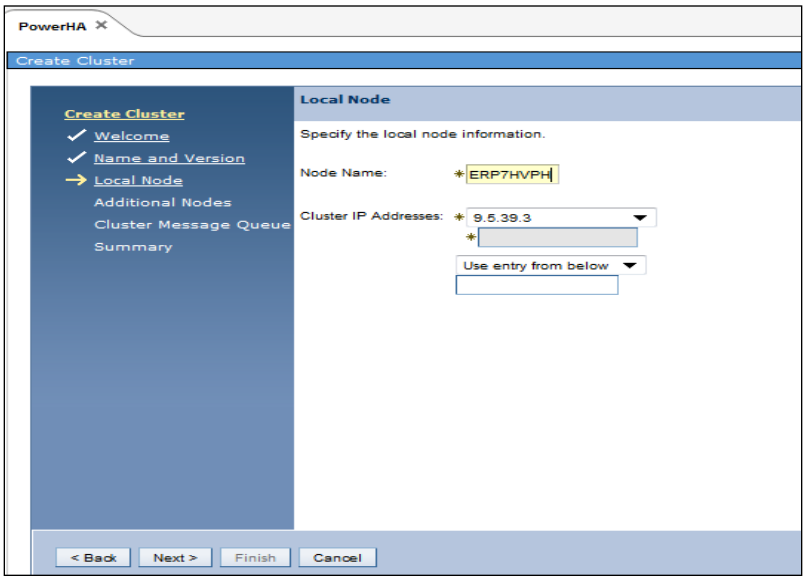
The cluster creation wizard will lead you through the cluster definition.



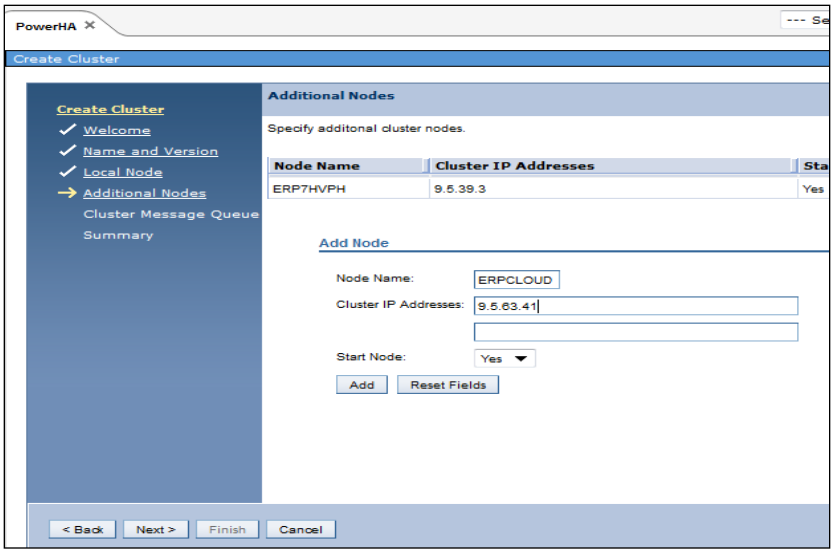
Begin by completing the name of the cluster and your installed version of the PowerHA software.



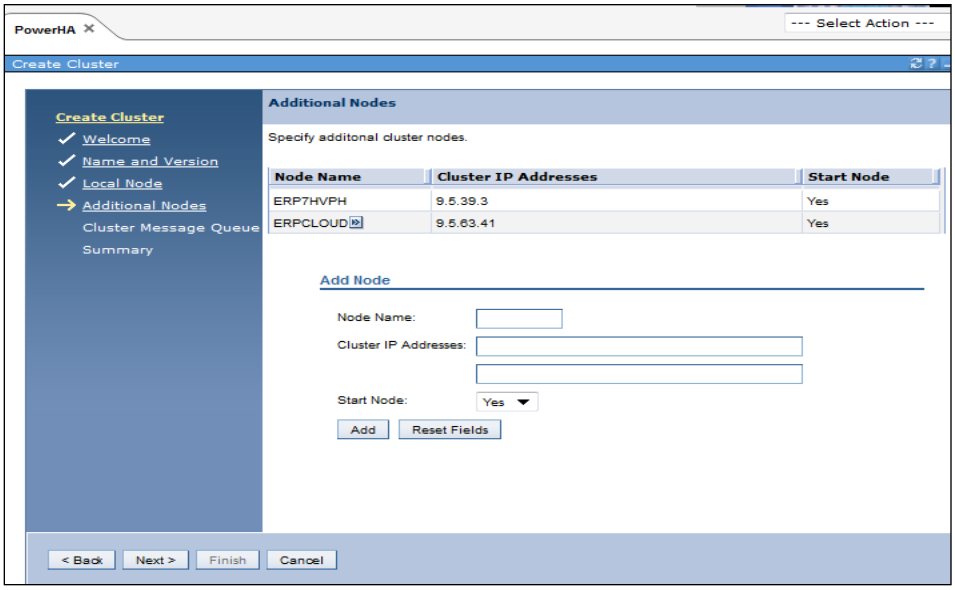
The creation is being done from the primary server's IBM i Navigator, therefore the local node is the primary server. The cluster IP address is the same as the primary server's.



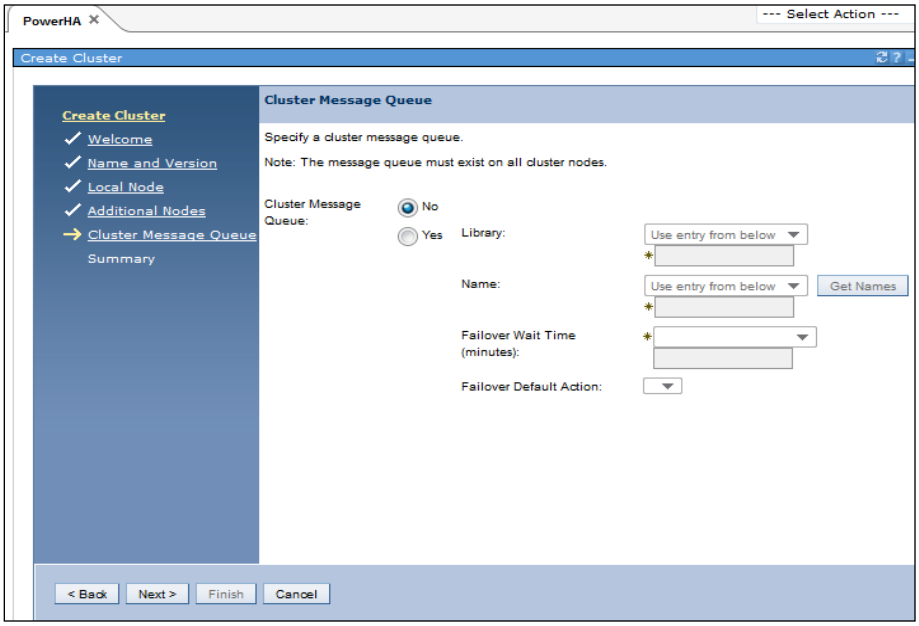
The secondary server is added as the remote node.



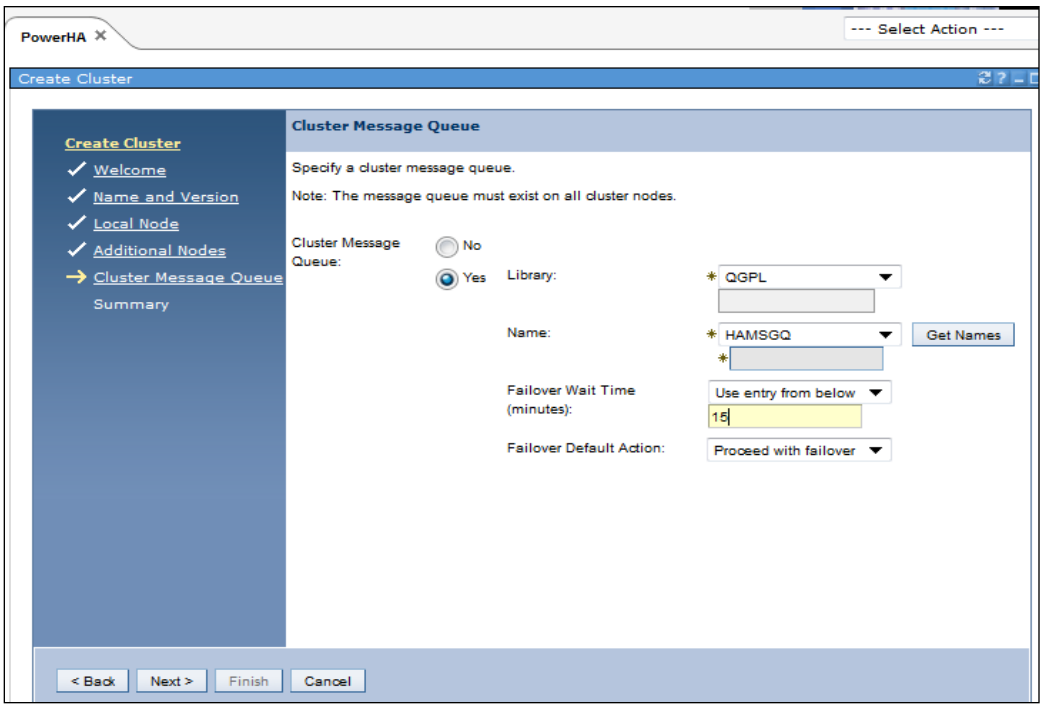
The added node, along with any existing nodes are displayed on the next panel.



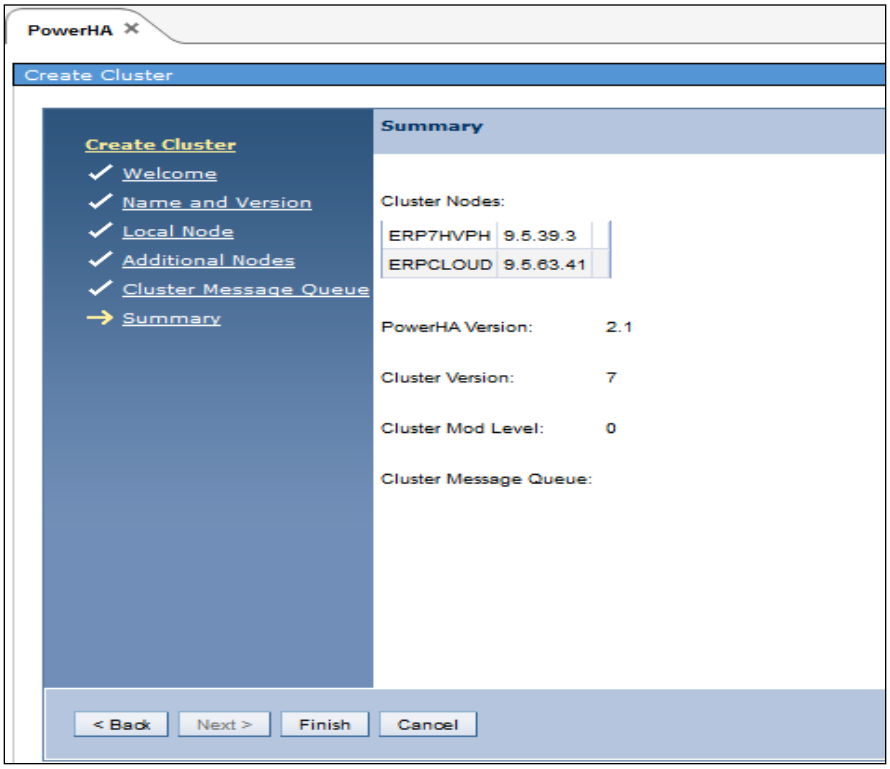
After entering all nodes, the wizard moves to cluster failover message queue creation. If the primary node fails, a message is sent to the message queue on the secondary node. The default is to not create a queue. Default behavior is to immediately fail over to the secondary node, by creating a failover message queue you can specify a delay time before failover.



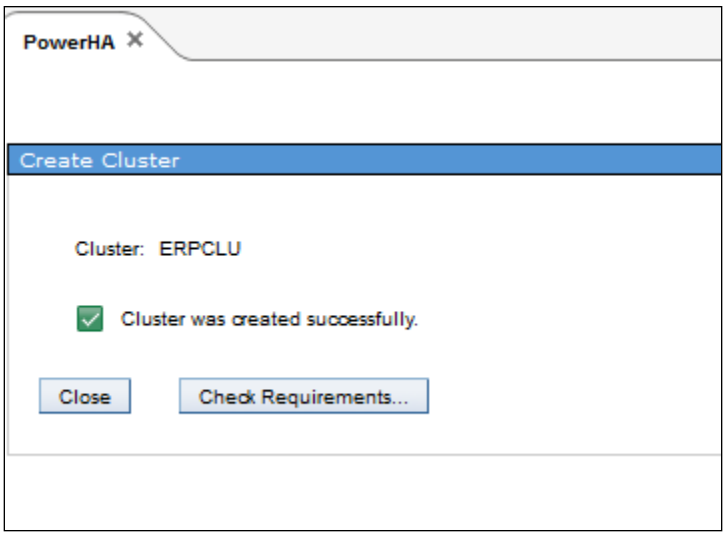
Here the delay time is being set to 15 minutes.



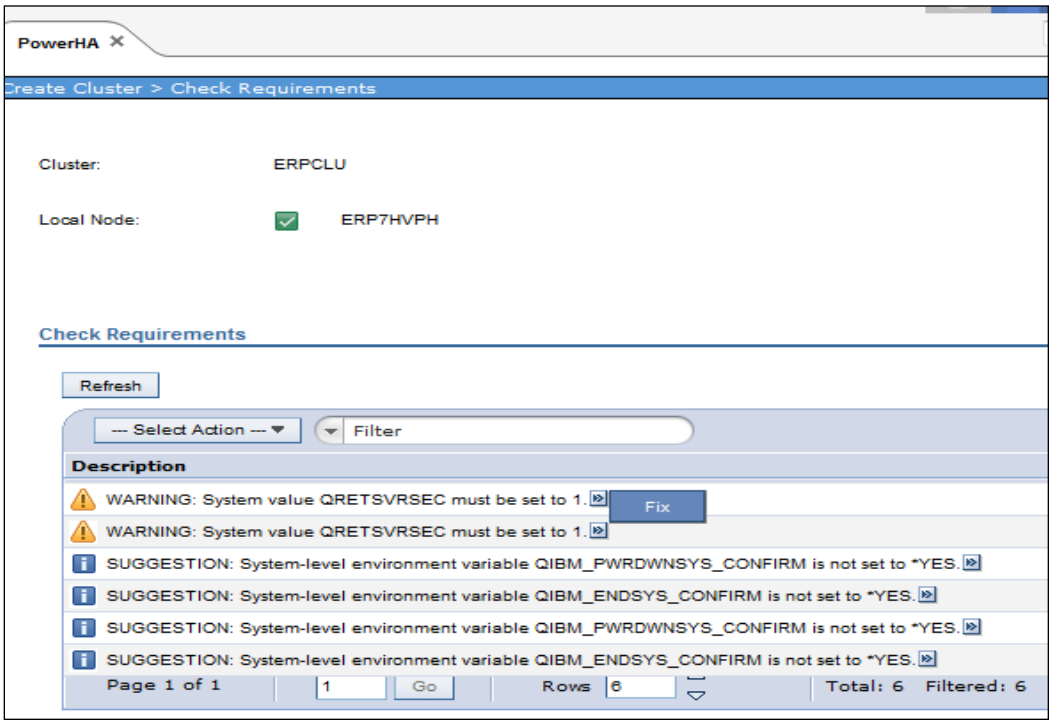
The last panel of the wizard specifies a summary of the cluster creation.



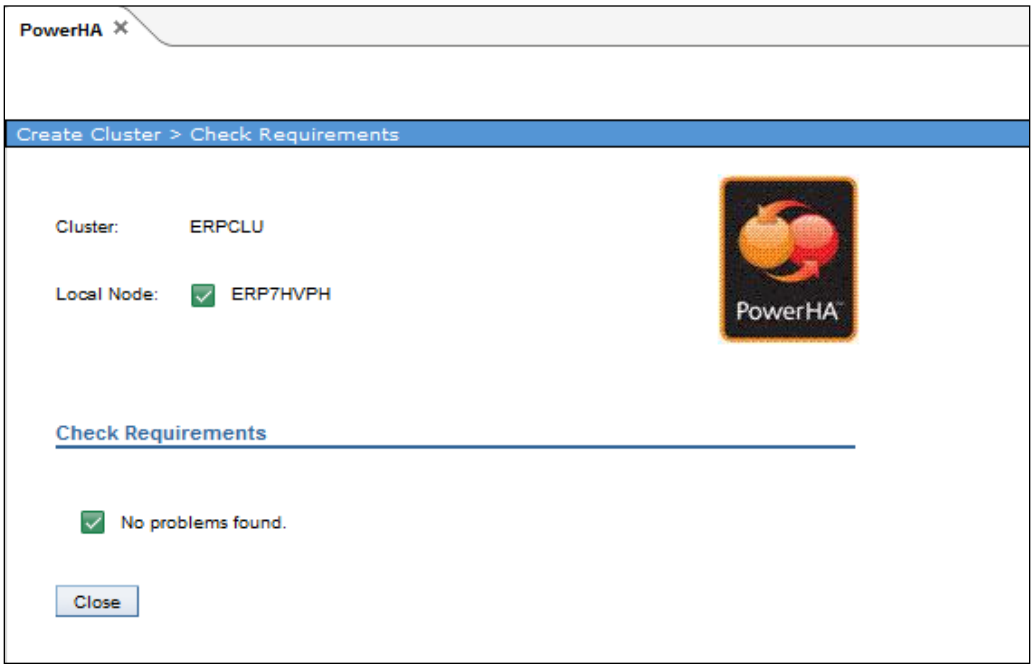
The finish button will display a completion message with an option button to check requirements.



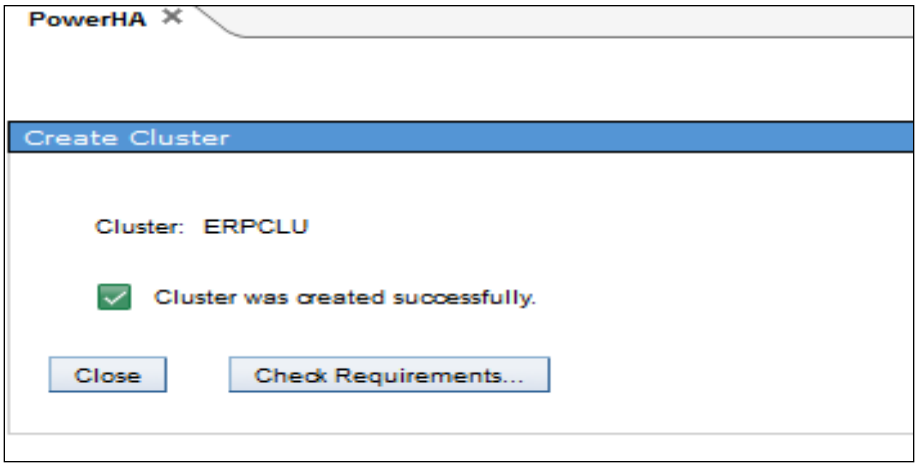
Here is what the check requirements output might look like if all requirements were not completed:



Because the example earlier set these system values, its Check Requirements panel should have no issues to be resolved:



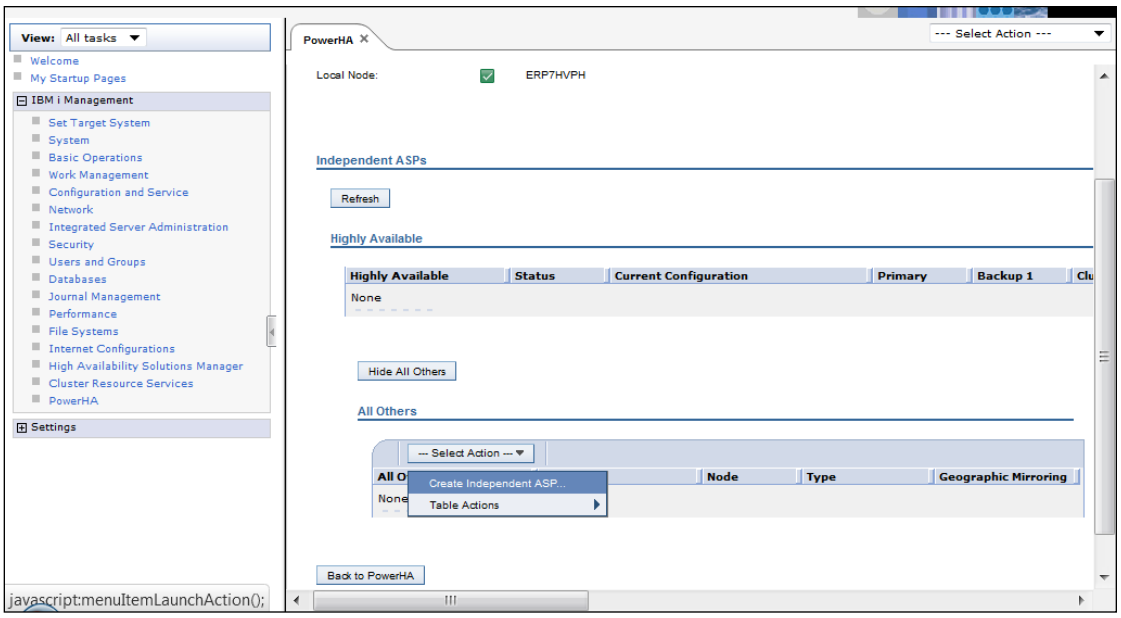
Closing the Check Requirements panel will return to the Create Cluster panel, which can also be closed to complete the cluster creation wizard.



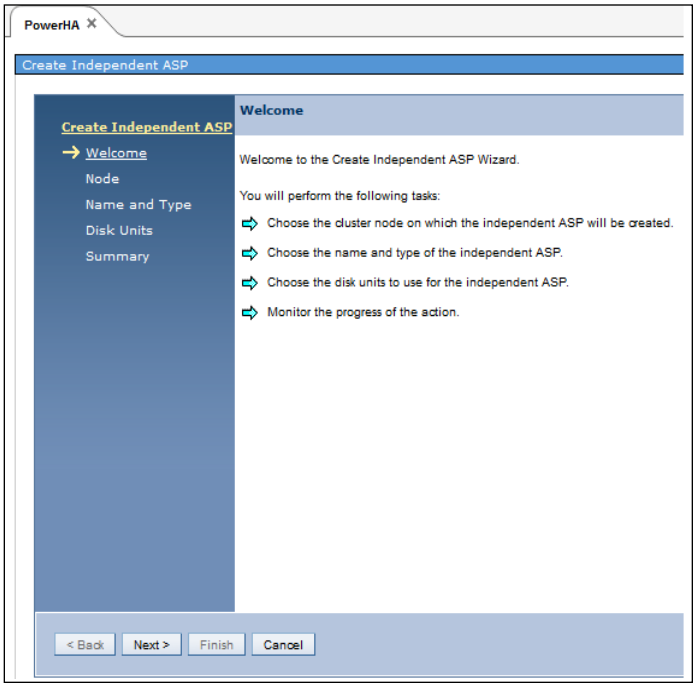
Creating an independent ASP

The switched independent ASP needs to be created on the primary partition. The consistency group created on the V7000 will take care of the relationship between the storage of the primary and secondary partitions, so the only thing needed here is what looks to be a single independent ASP on the primary partition. Use the IBM Navigator for i PowerHA menu, choose the independent ASP's option.

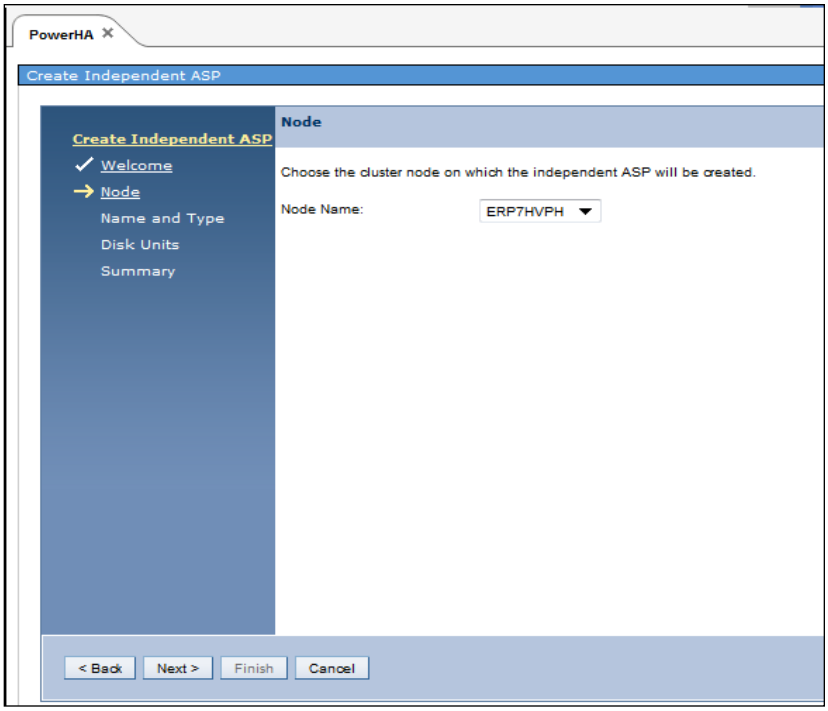
From that panel, use the Select Action pulldown to begin the Create independent ASP's wizard.



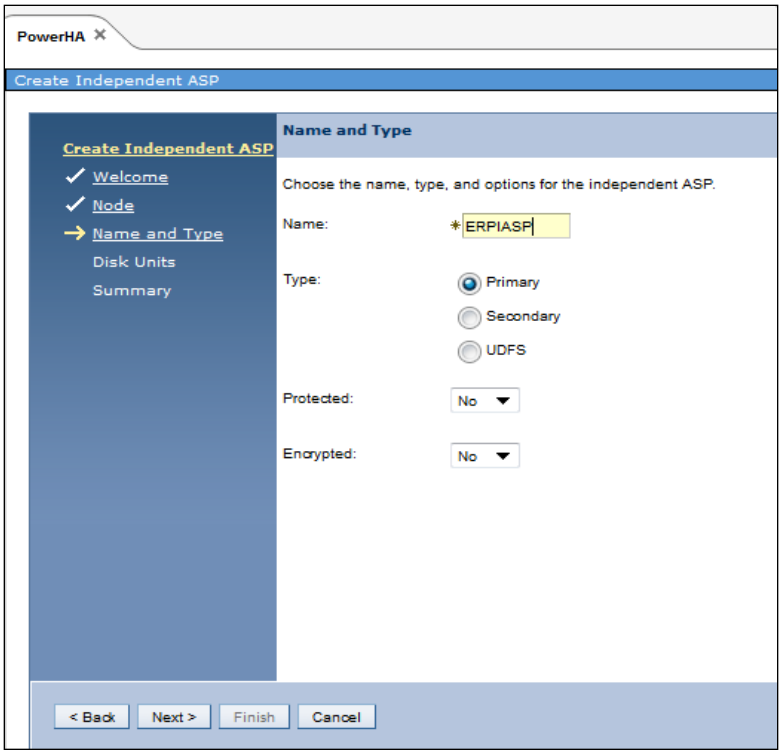
The wizard begins with an overview of the process.



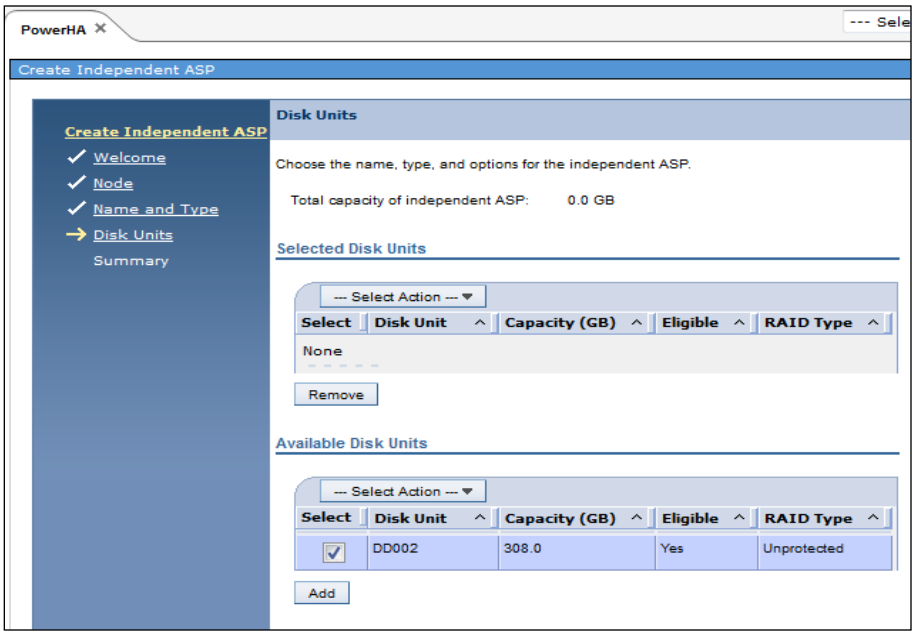
Enter the node name of the primary node on the next panel.



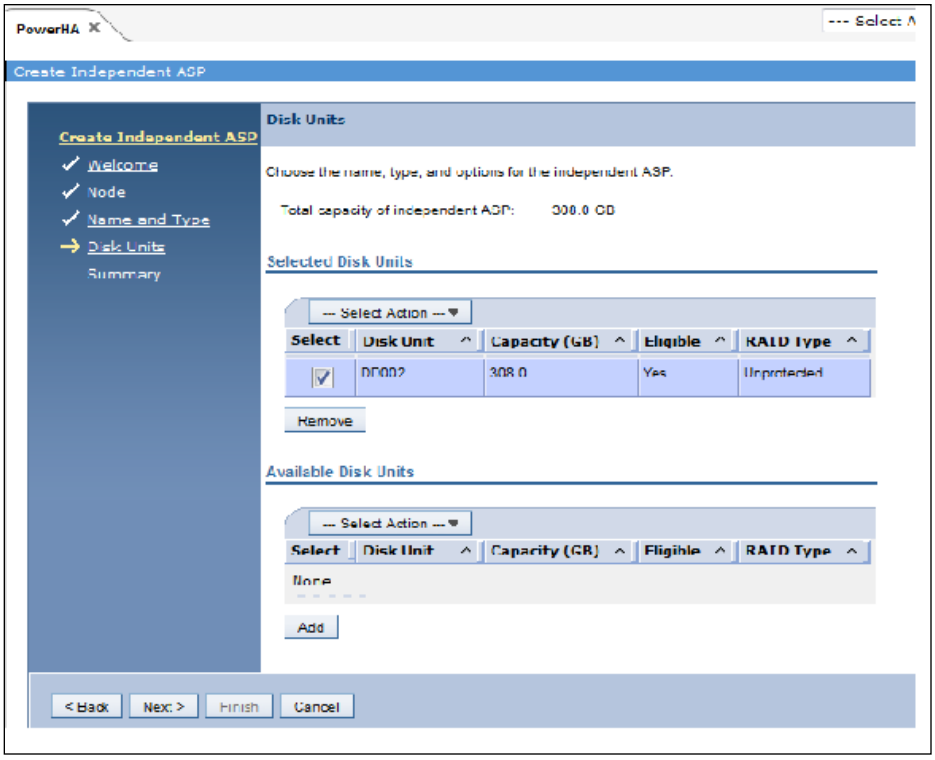
On the next panel, enter the name of the independent ASP. This is going to be the primary independent ASP.



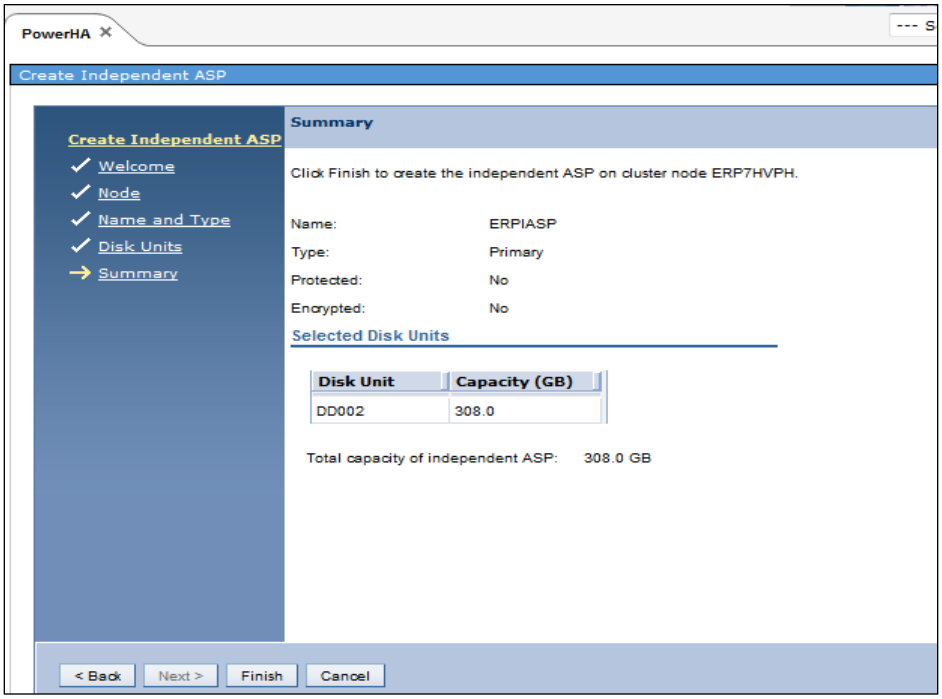
A list of available disk units should be displayed on the next panel. Select the unit allocated for the primary IASP on the V7000.



A confirmation panel will be displayed with the units moved from Available Disk Units to Selected Disk Units.



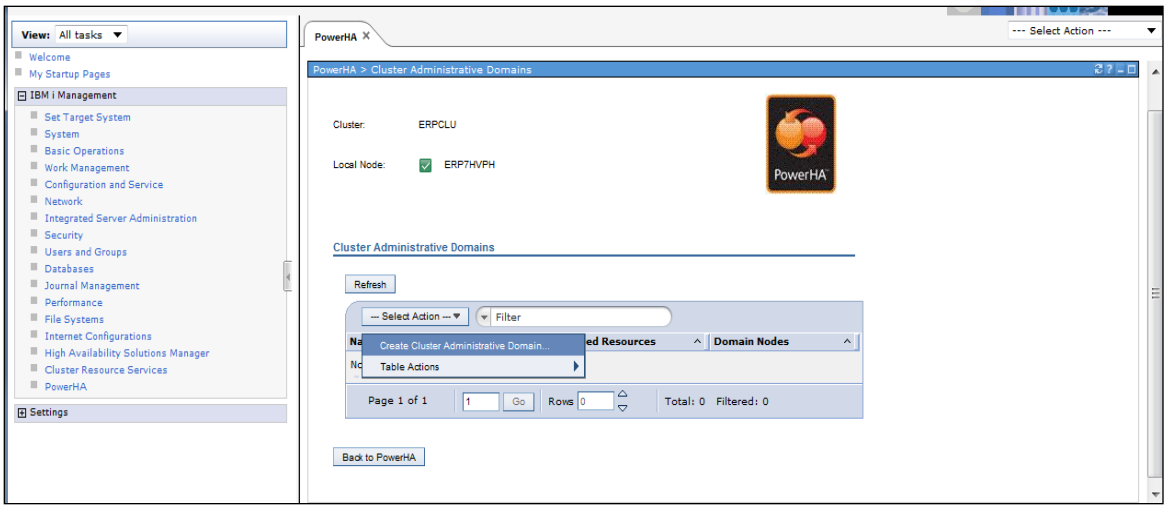
The final panel of the wizard is a summary of the actions being taken.



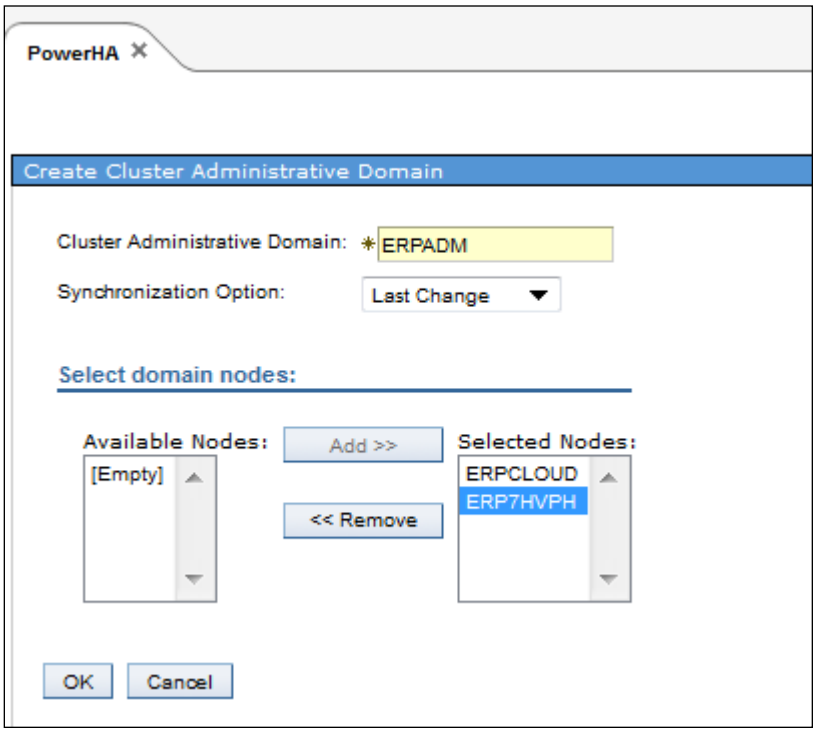
Creating the cluster administrative domain

The cluster administrative domain will be used to propagate changes to resources that need to be duplicated on the primary and secondary nodes. When added to the resource, a change made on one node in a cluster will be propagated to the other nodes in the cluster. This will be needed for the various JD Edwards user profiles (JDE, ONEWORLD) and job descriptions (ONEWORLD).

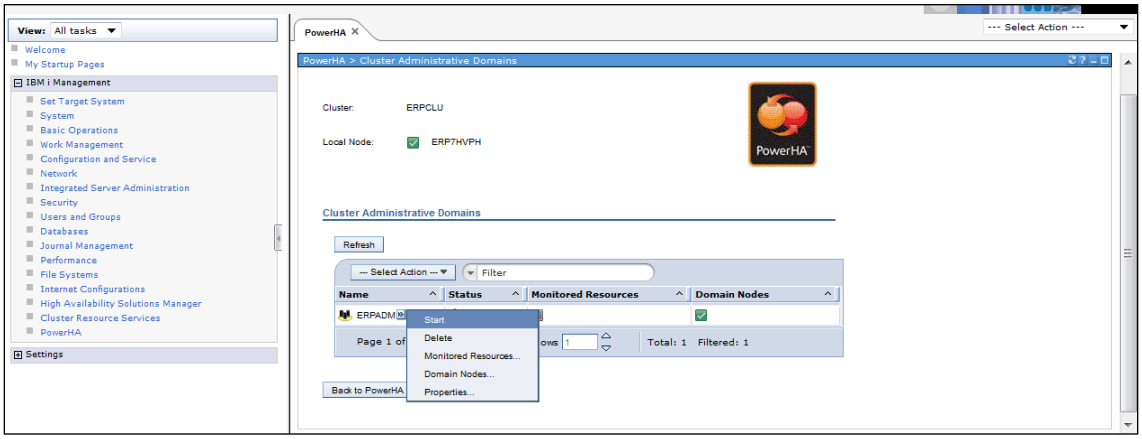
Create the cluster from the PowerHA menu of the IBM Navigator for i console on the primary node. Choose Cluster Administrative Domains from the PowerHA menu, and then from the Select Action pulldown choose Create Cluster Administrative Domain.



Enter the name to be used for the domain on the next panel, and add both the primary and secondary nodes in the 'Select domain nodes' section.

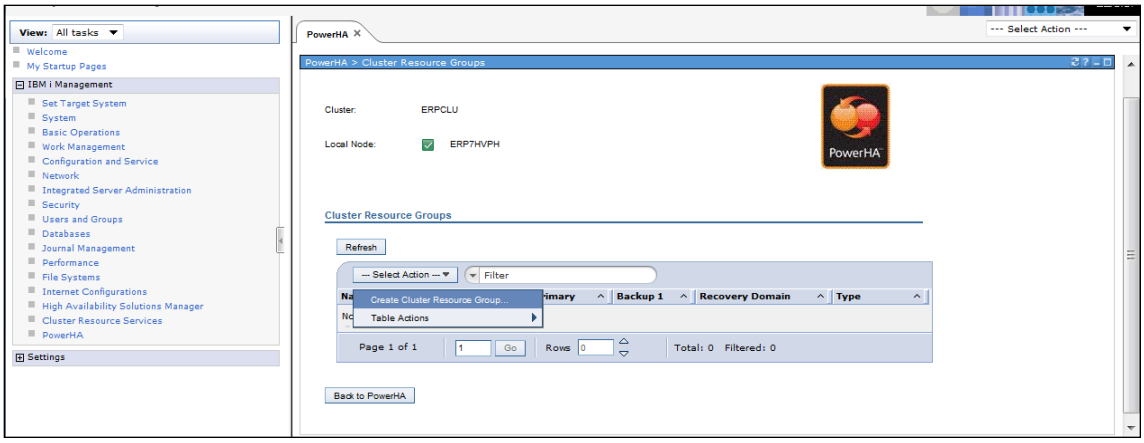


After the administrative domain is created, start it from the pulldown next to the name of the domain.

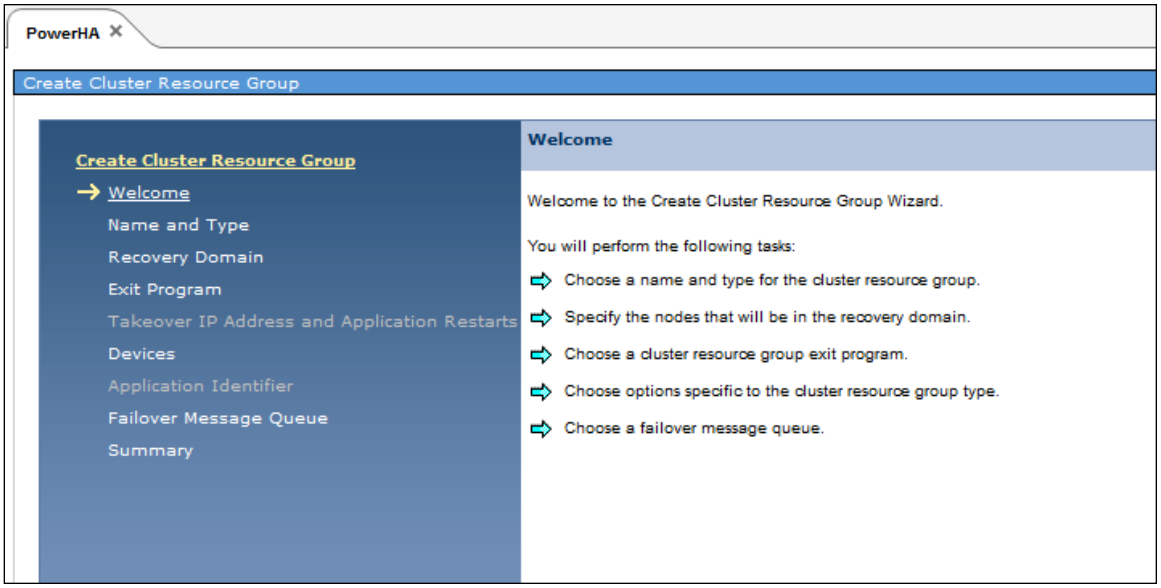


Create the cluster resource group

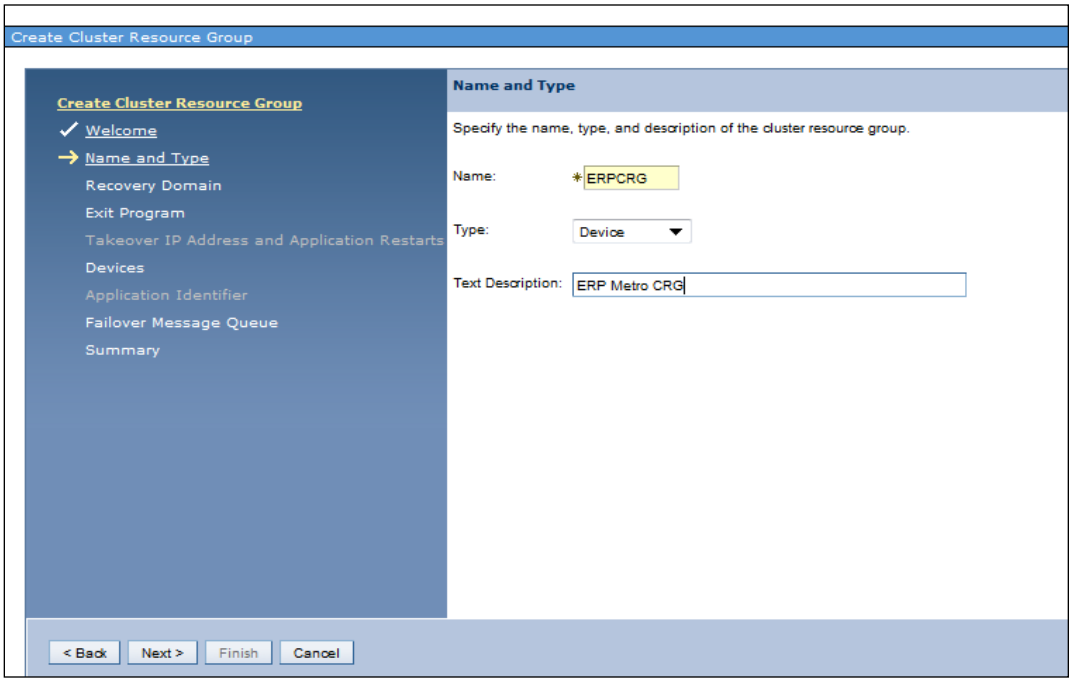
The cluster resource group is needed to define the cluster nodes in the recovery domain. There are several possible types of cluster resource groups, this one needs to be a Device CRG because there is a device (the independent ASP) to be switched between the nodes in the recovery domain. Begin by choosing the Cluster Resource Groups entry on the PowerHA menu of Navigator.



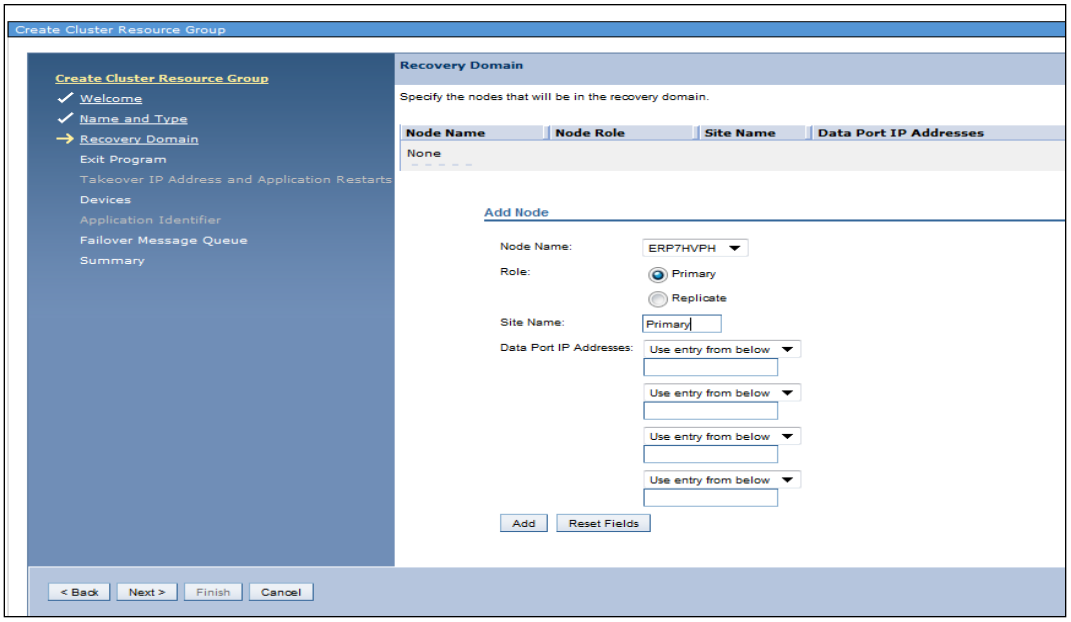
The first panel is a summary of the steps the wizard will go through.



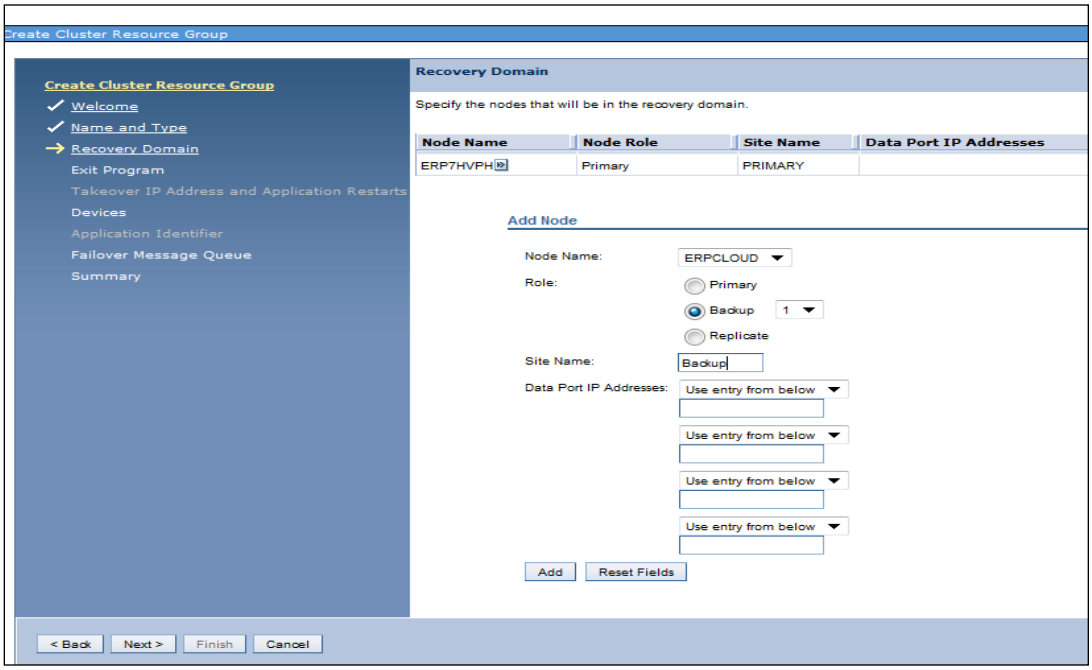
Enter the cluster resource group name on the first panel and make sure the type is “Device”.



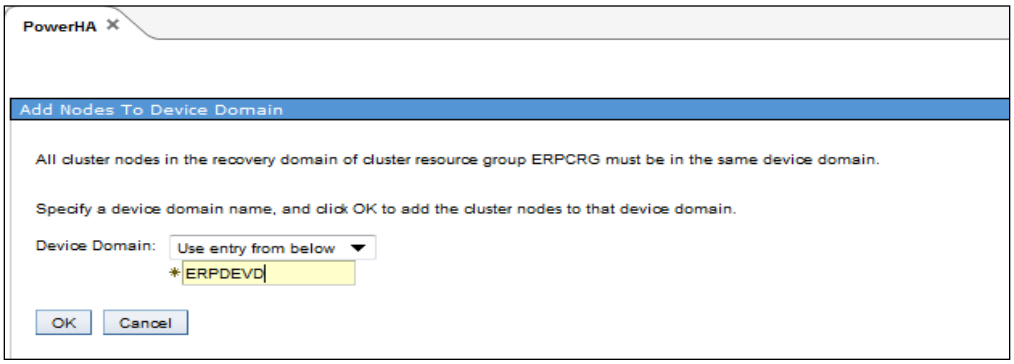
Add the first node as the primary node.



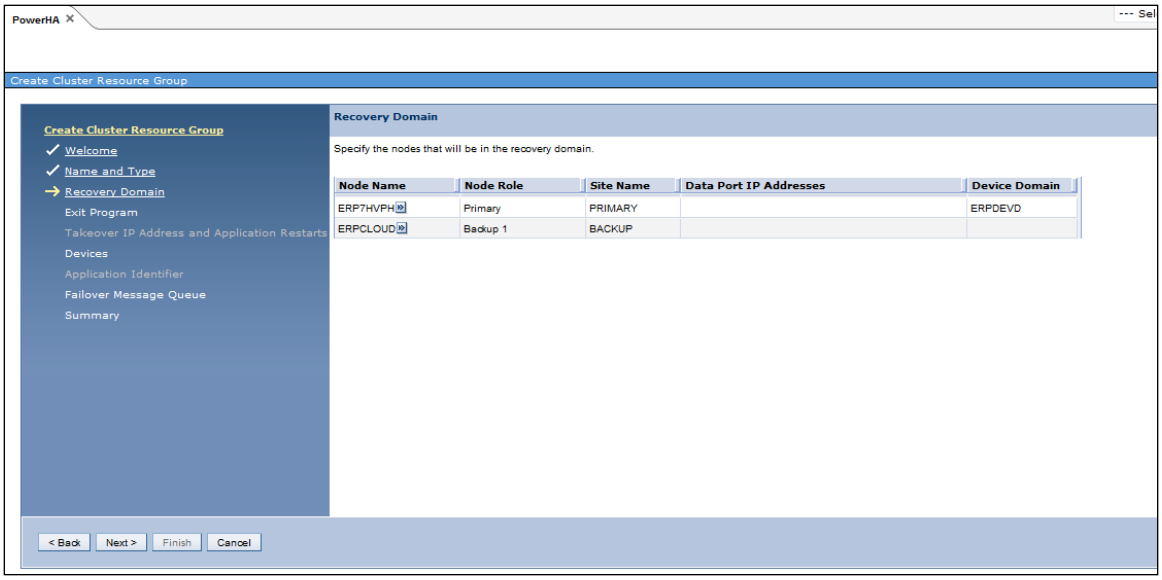
Add the second node as the backup.



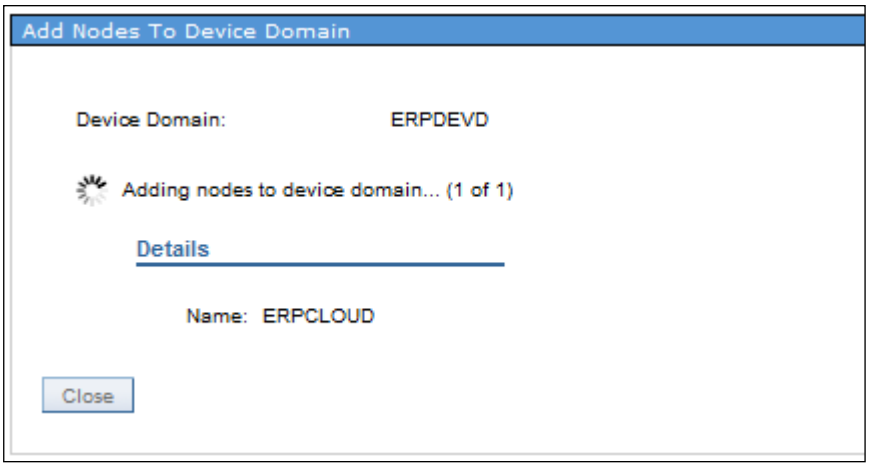
The device domain is used to verify there are no configuration conflicts that would prevent a switchover. Specify the name in the provided field.



All the nodes in the cluster resource group should be listed on the next panel.

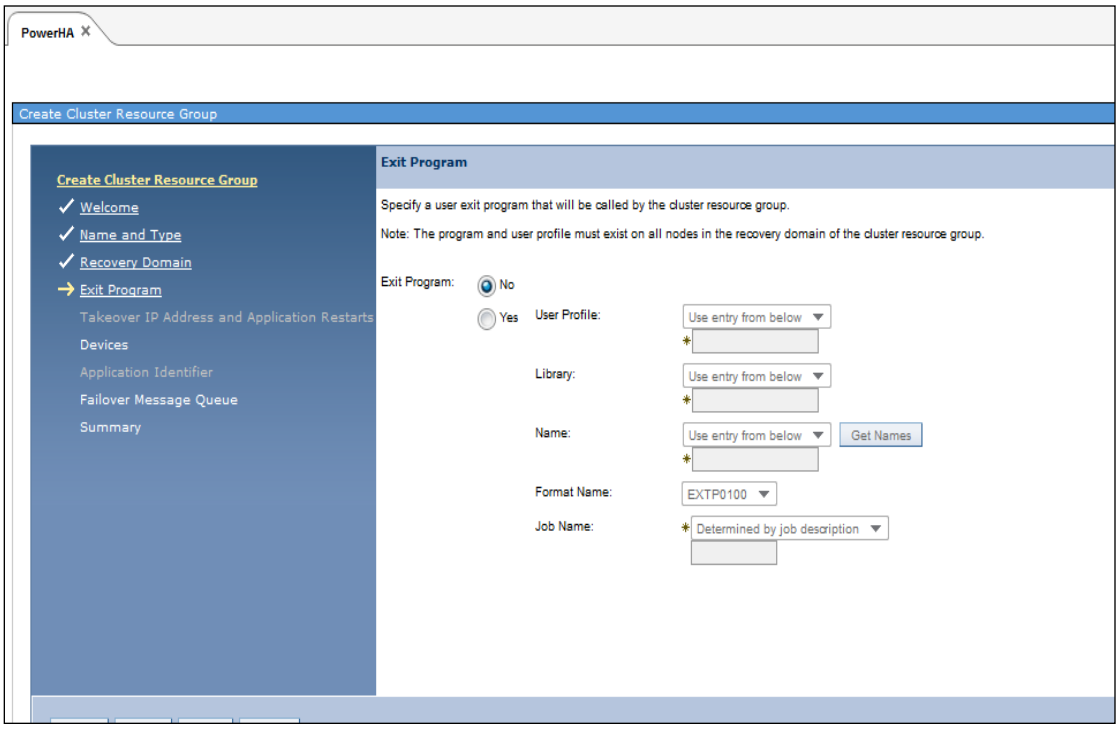


The available nodes are now added to the device domain

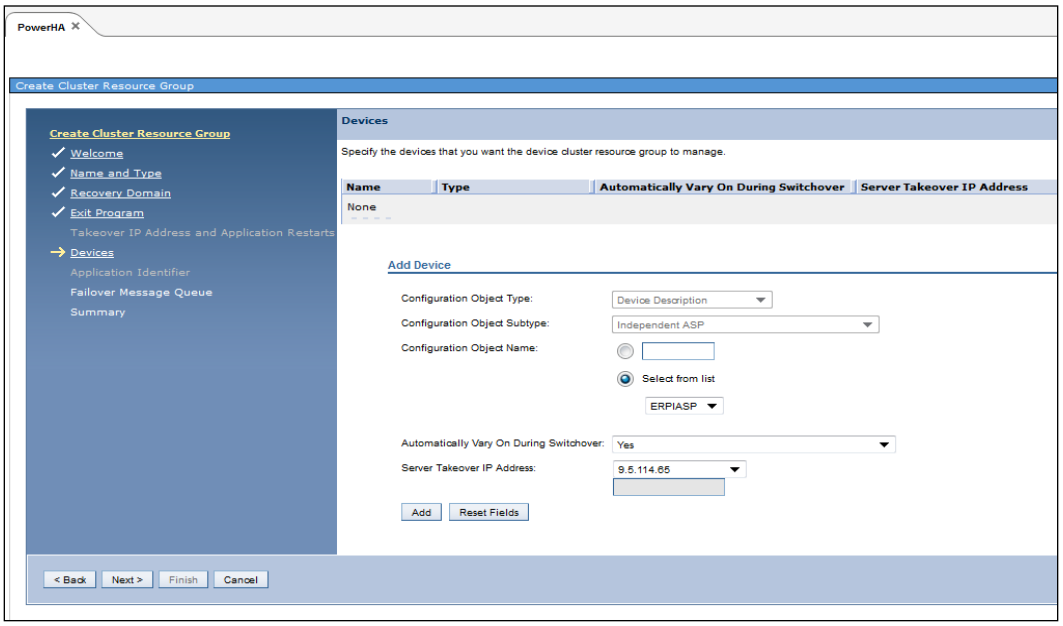


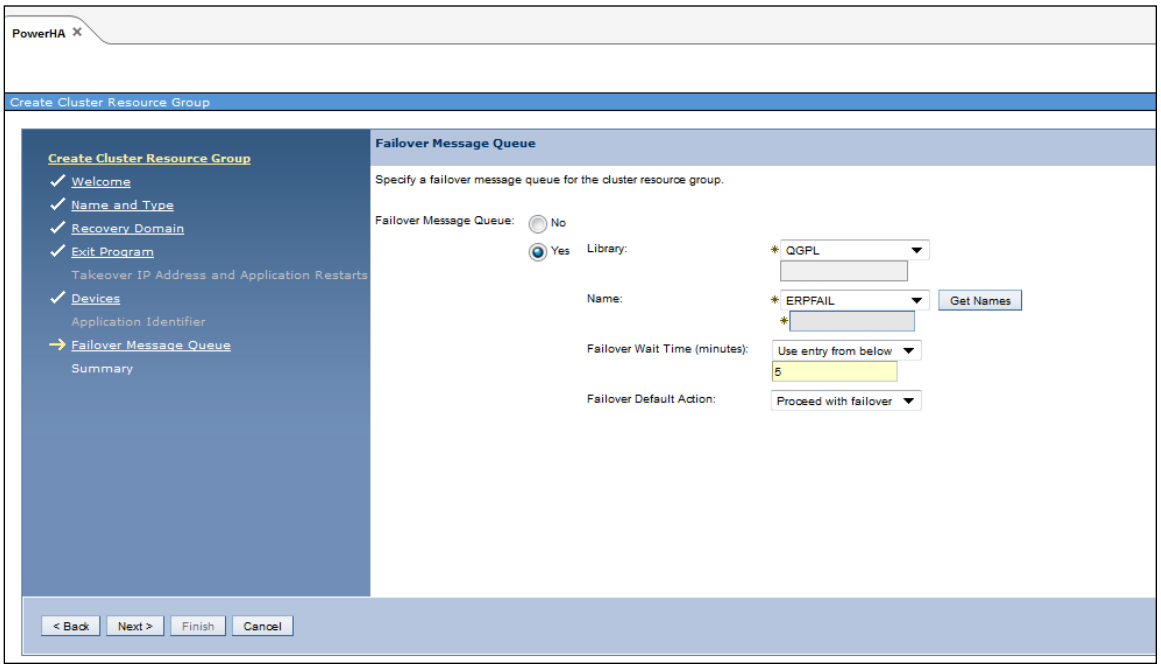
A results panel shows the successful addition of the nodes to the device domain.

The next step allows a user exit program to be specified. None is used here.



Now the devices need to be added to the device cluster resource group. In this example there is only one, the switchable independent ASP named ERPIASP.



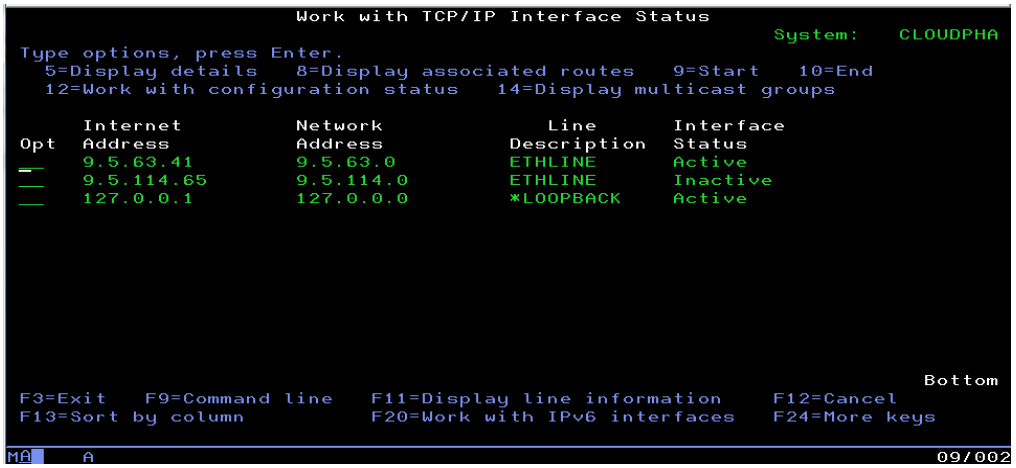


Add an optional failover message queue if you wish to control behavior of a failover rather than relying on the default behavior. This message queue is different than the cluster-wide message queue specified on cluster creation. If the cluster message queue HAMSGQ had not been defined the message queue ERPFAIL on the backup node would receive a CPABB01 inquiry message when a failure occurs, and if not answered in 5 minutes the devices in this resource group would fail over. Since the cluster message queue was defined, this failover message queue will be ignored. A node-

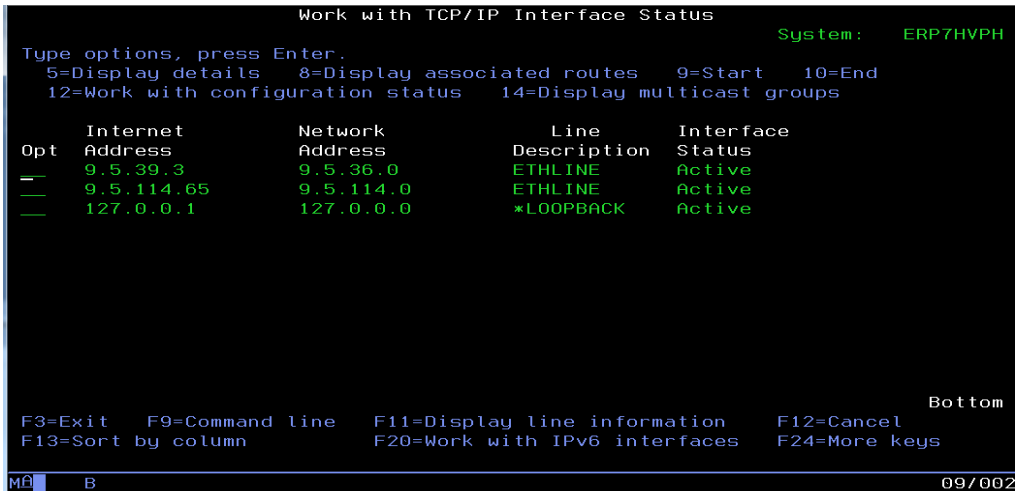
level failover will send a CPABB02 message to the HAMSGQ on the backup node, and a CRG-level failover will send a CPABB01 to the HAMSGQ on the backup node.

Before finishing the cluster resource group wizard, verify the takeover ip address is inactive on the secondary node and active on the primary node. Use the Work with TCP/IP Network Status (NETSTAT) command from the command line and choose option 1, Work with IPv4 interface status.

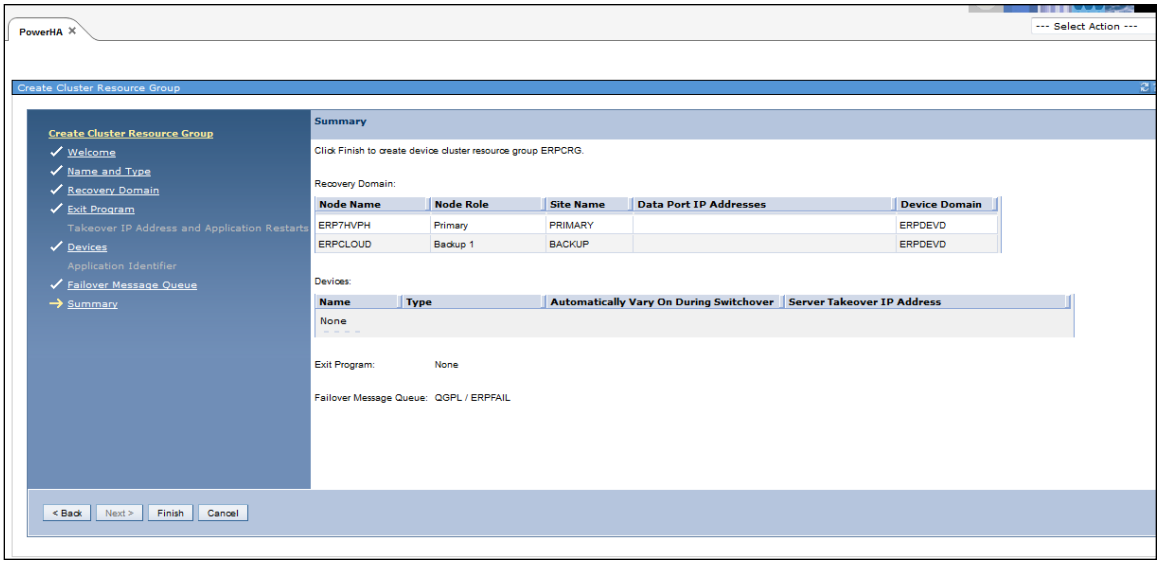
Secondary node:



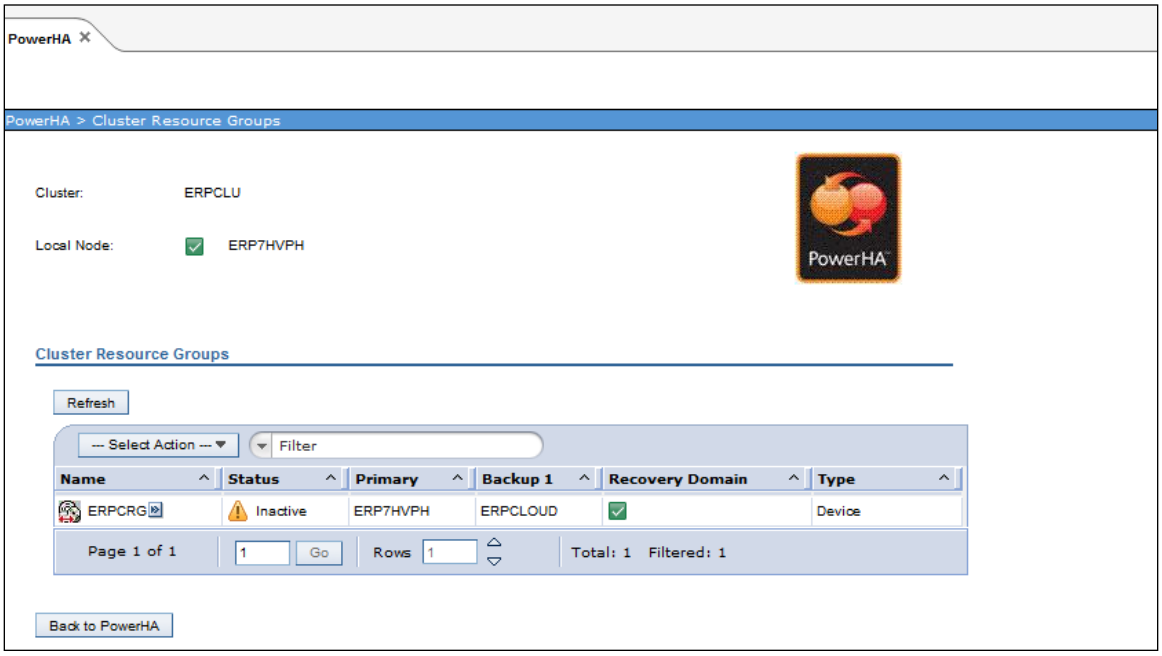
Primary node:



Now complete the Create Cluster Resource Group wizard.

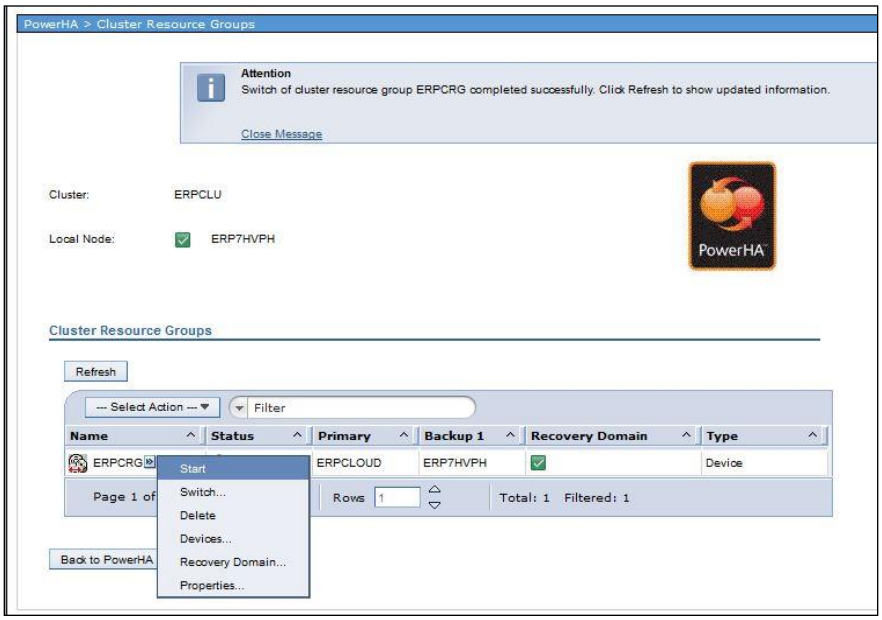


The cluster resource group should be displayed with a status of Inactive.

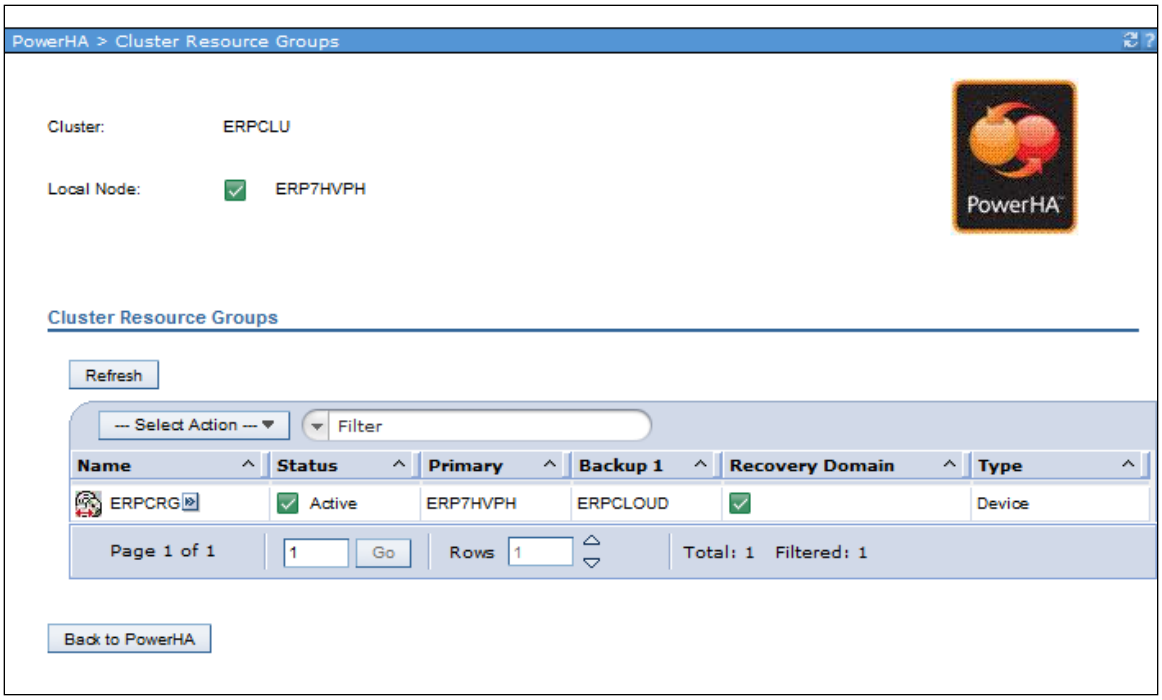


Using the pulldown following the CRG name, select “Devices” and verify the status of the IASP is available.

Go back to the cluster resource groups menu, and again using the pulldown after the CRG name, start the cluster resource group.



The cluster should now have a state of 'active'.



SAN Volume Controller (SVC) configuration

The SVC requires ssh key pairs between the V7000 and the partitions using the V7000. These instructions were developed from the PowerHA SystemMirror for IBM i Cookbook, Redbook SG24-7994-00, section 14.1.1 Setting Up an IBM i SVC/V7000 Environment.

The key pair can be generated from Qshell on the IBM i. From a command line enter QSH to begin the Qshell command environment, change directories to the High Availability Solutions Manager (HASM) key directory and then issue the ssh-keygen command.

- `cd /QIBM/UserData/HASM/hads/.ssh/`
- `ssh-keygen -t rsa -f id_rsa -N`

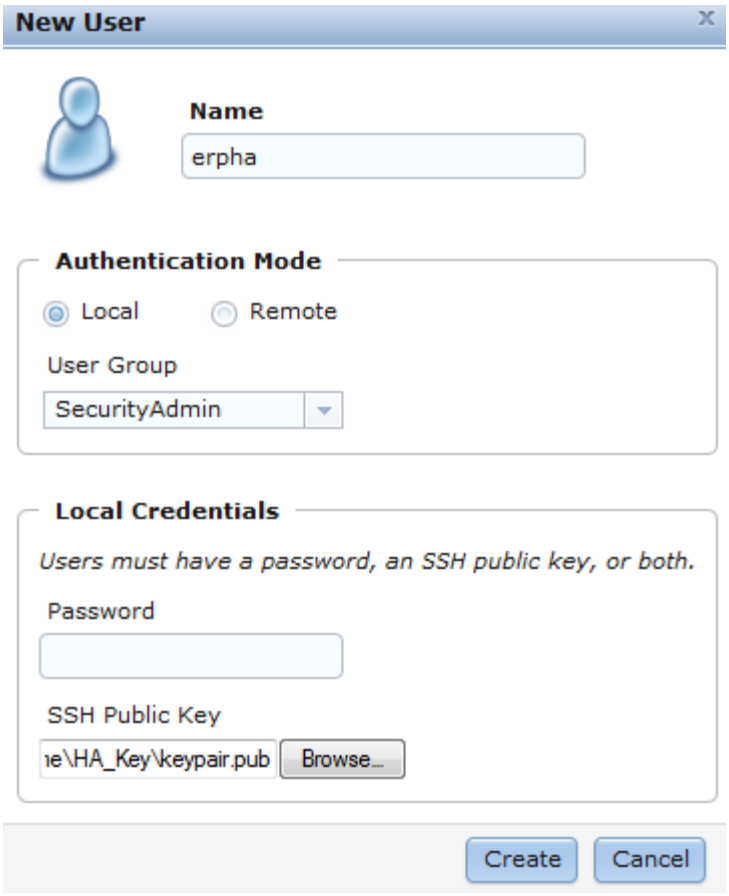
Press enter when a passphrase is asked for. You have to press enter twice and the passphrase must be blank. PowerHA currently does not support a passphrase.

The key pair will be generated to /QIBM/UserData/HASM/hads/.ssh/. Map a drive to this directory to allow importing the public key id_rsa.pub on the V7000. Put the private key id_rsa in a directory accessible to user QHAUSERPRF. It does not need explicit authority, public read will work.

Create a new user on the V7000 and the IBM i, the username in the example is erhpa. The user id must match on all systems and be the same case, lower case is recommended. This same user id and case will be used in the SVC copy description commands ADDSVCCPYD and CHGSVCCPYD.

Using the V7000 management console, choose the users option from the menu for the Access icon, and then choose 'New User'.

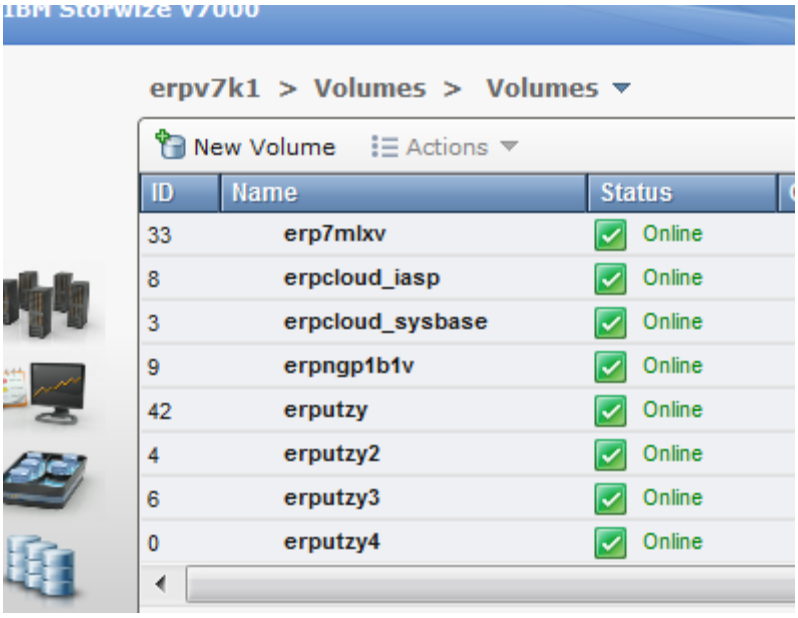
Use ssh public key only with no password on the V7000 user id. Import the public key (id_rsa.pub) on the V7000 from the drive you mapped to your IBM i.



Map a drive to the secondary partition and copy the key directory to the secondary partition.

Create the same user (erpha in this example) on the secondary partition and the V7000 providing storage for the secondary partition, and import the ssh key on this second v7000.

Log on to the V7000 management console and record the volume ids of the volumes hosting the partition independent ASPs. In this example of the V7000 hosting the secondary partition, the secondary partition is on volume erpcloud_iasp, and the ID column shows this has volume id 8.



Add the SVC copy description on the primary IBM i using the Add SVC ASP Copy Description (ADDSVCCPYD) command. The internet address is the address of the V7000 hosting the primary partition's independent ASP. The virtual disk range is the SVC volume ids of the disks in the primary independent ASP.

```
                  Add SVC ASP Copy Description (ADDSVCCPYD)

Type choices, press Enter.

ASP copy . . . . . . . . . . . . > ERP7HVPHA      Name
ASP device . . . . . . . . . . .   __________     Name
Cluster resource group . . . . .   __________     Name, *NONE
Cluster resource group site  . .   ________       Name, *NONE
Node identifier  . . . . . . . .   ________       Name, *CRG, *NONE
Storage host:
  User name  . . . . . . . . . . > erpha
  Secure shell key file  . . . . > '/qibm/userdata/hasm/hads/.ssh/id_rsa'
_____
  Internet address . . . . . . . > '9.5.38.34'
_____
Virtual disk range:               _
  Range start  . . . . . . . . . > 1            0-8191
  Range end  . . . . . . . . . . > 1            0-8191
             + for more values _
```

Add the SVC copy description on the secondary IBM i, this time using the internet address for the V7000 hosting the secondary partition's independent ASP.

```
                  Add SVC ASP Copy Description (ADDSVCCPYD)

Type choices, press Enter.

ASP copy . . . . . . . . . . . . > ERPCLOUDHA     Name
ASP device . . . . . . . . . . .   __________     Name
Cluster resource group . . . . .   __________     Name, *NONE
Cluster resource group site  . .   ________       Name, *NONE
Node identifier  . . . . . . . .   ________       Name, *CRG, *NONE
Storage host:
  User name  . . . . . . . . . . > erpha_____________
  Secure shell key file  . . . . > '/qibm/userdata/hasm/hads/.ssh/id_rsa'
_____
  Internet address . . . . . . . > '9.5.38.92'
_____
Virtual disk range:               _
  Range start  . . . . . . . . . > 8__________   0-8191
  Range end  . . . . . . . . . . > 8__________   0-8191
              + for more values _
```

Start the ASP session using the Start SVC Session (STRSVCSSN) command. The two parameters specifying reverse replication specify whether reverse replication should be started automatically after a switchover or failover has occurred.

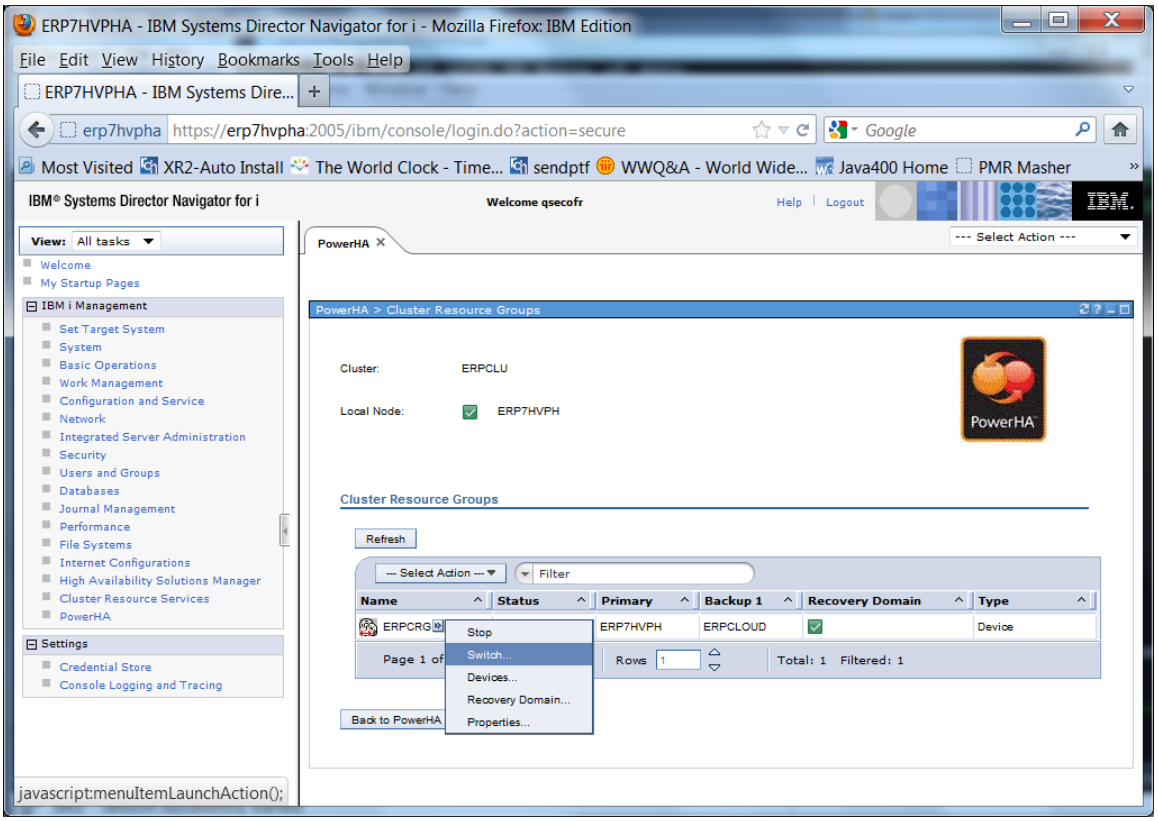
```
                        Start SVC Session (STRSVCSSN)

Type choices, press Enter.

Session  . . . . . . . . . . . . > ERPMETRO__     Name
Session type . . . . . . . . . . > *METROMIR_     *METROMIR, *GLOBALMIR...
Cluster resource group . . . . .   ERPCRG_____     Name
Switchover reverse replication     *YES           *YES, *NO
Failover reverse replication . .   *NO_           *NO, *YES
```

```
  > STRSVCSSN SSN(ERPMETRO) TYPE(*METROMIR) CRG(ERPCRG)
    Command STRSVCSSN completed successfully.
```

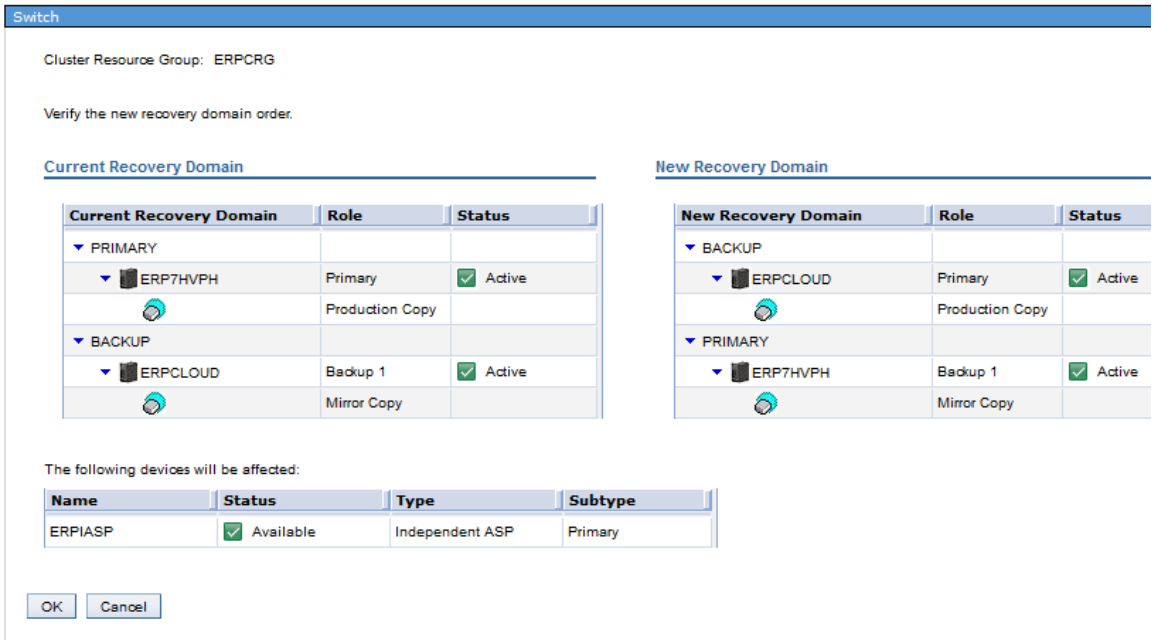
This completes configuration of the Metro Mirror remote copy configuration. The next steps will be to validate the configuration by performing a switchover, and then configuring FlashCopy.

Verifying that switch over works correctly

Verify the cluster is operating correctly by performing a switchover. This can be done from the command line or from the PowerHA IBM i Navigator menu as shown here. Select Cluster Resource Groups from the PowerHA menu. From the pulldown next to the cluster resource group name, select 'Switch'.

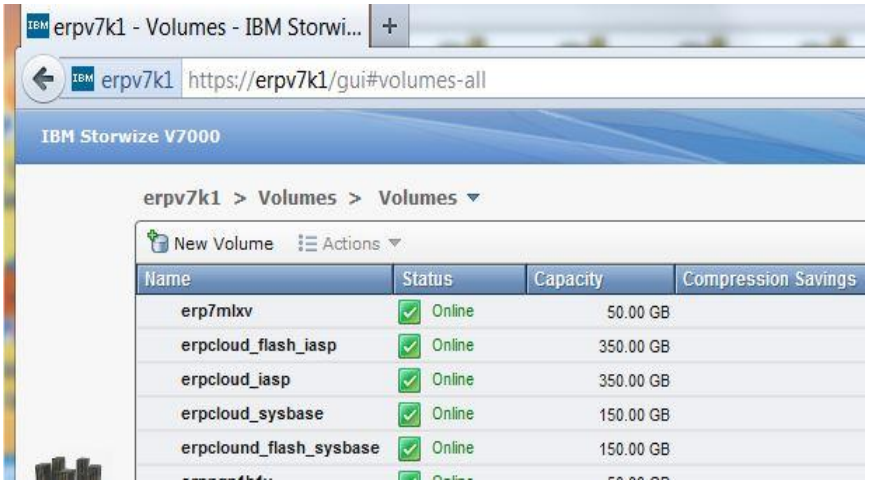


A verification panel appears to validate the switch actions. After entering the OK button the switch will be performed and a results panel (not shown) displayed.



Configuring FlashCopy

This example will create a FlashCopy of the replicated independent ASP to a non-replicated independent ASP on a partition (ERPCLOUDFL) outside the MetroMirror relationship. This FlashCopy will be a point-in-time copy of the mirrored independent ASP (ERPIASP) at the time the flash copy relationship begins. In preparation, this partition should be installed with the same level of IBM i 7.1 as used for the cluster partitions and the TCP *INETD server should be started. A volume must be created on a V7000 for the FlashCopy independent ASP. In this example, it is named erpcloud_flash_iasp and is on the the V7000 which is also hosting the secondary partition independent ASP erpcloud_iasp.



Use the CRTDEVASP command on the flash partition to create an independent ASP with the same name as the source independent ASP.

```
CRTDEVASP DEVD(ERPIASP) RSRCNAME(ERPIASP)
```

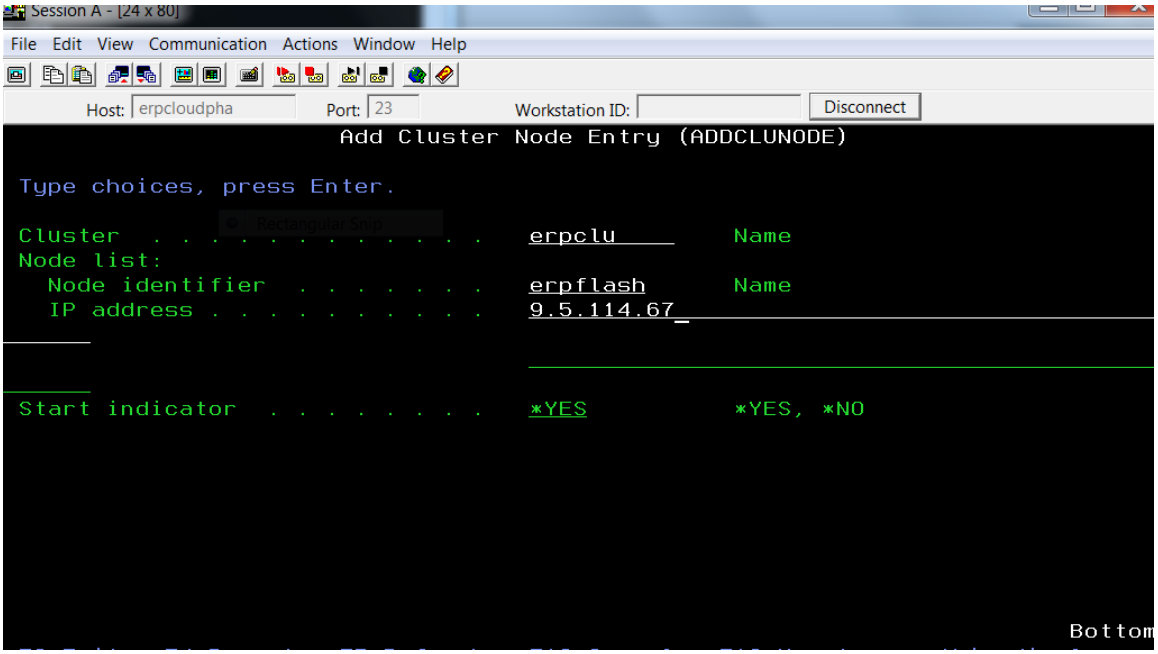
From the flash partition, allow it to be added to the cluster.

```
CHGNETA  ALWADDCLU(*ANY)
```

Also allow the flash copy partition to be added to the cluster device domain.

```
                    Add Device Domain Entry (ADDDEVDMNE)

Type choices, press Enter.

Cluster  . . . . . . . . . . . . > ERPCLU      Name
Device domain  . . . . . . . . . > ERPDEV      Name
Node identifier  . . . . . . . . > ERPFLASH    Name
```

Now, from the secondary node ERPCLOUDPHA, add the flash partition to the cluster.

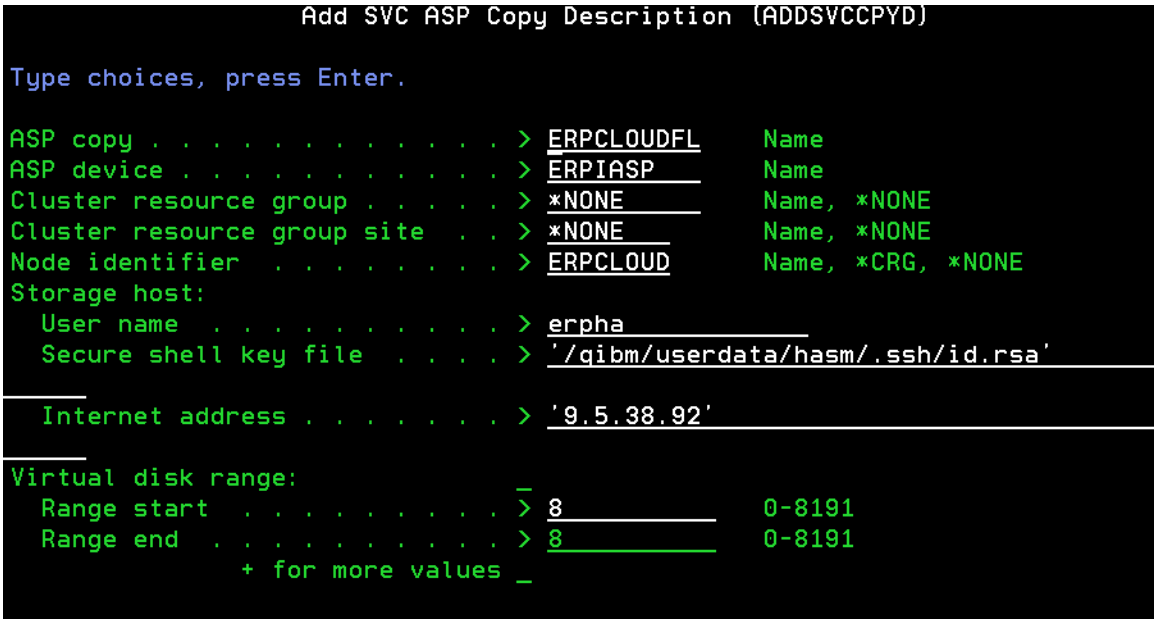


Add ASP copy descriptions on the FlashCopy partition ERPCLOUDFL using the Add SVC ASP Copy Description (ADDSVCCPYD) command. Two descriptions need to be added, one for the primary node ERP7HVPH and one for the secondary node ERPCLOUD.

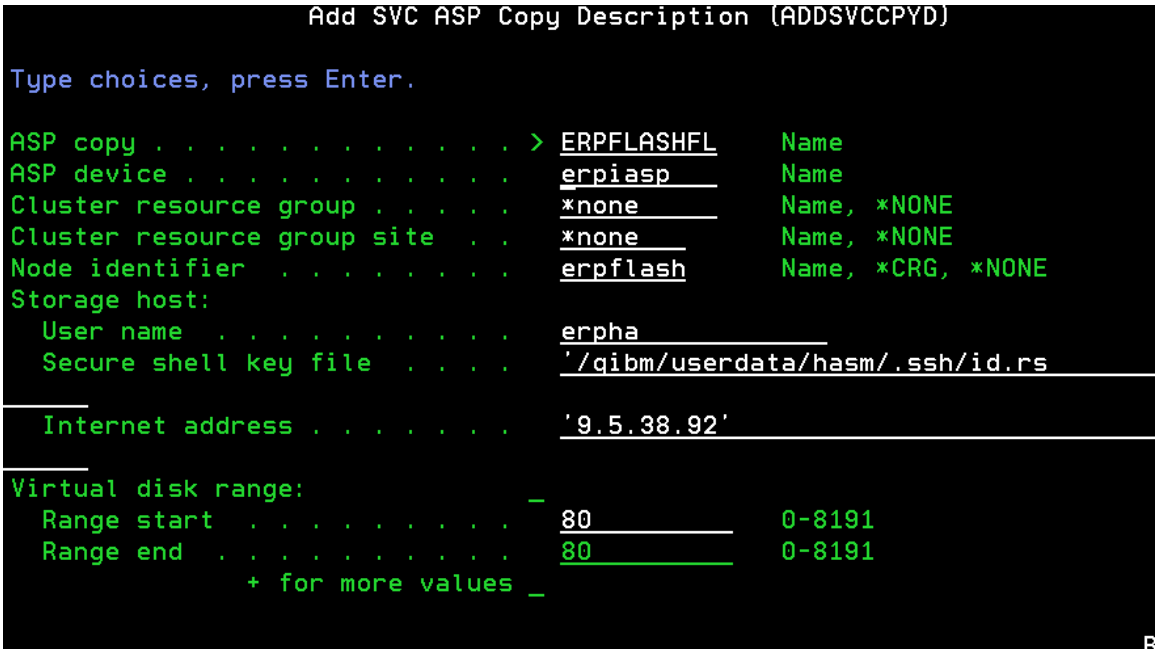
The following shows the command prompt on primary node:

```
                Add SVC ASP Copy Description (ADDSVCCPYD)

Type choices, press Enter.

ASP copy . . . . . > ERP7HVPHFL     Name
ASP device . . . . . > ERPIASP      Name
Cluster resource group . . . . > *NONE      Name, *NONE
Cluster resource group site  . . > *NONE    Name, *NONE
Node identifier  . . . . . > ERP7HVPH       Name, *CRG, *NONE
Storage host:
  User name  . . . . . > erpha
  Secure shell key file  . . . . > '/qibm/userdata/hasm/.ssh/id.rsa'
  Internet address . . . . . > '9.5.38.34'
Virtual disk range:
  Range start  . . . . . > 1          0-8191
  Range end  . . . . . > 1            0-8191
             + for more values
```

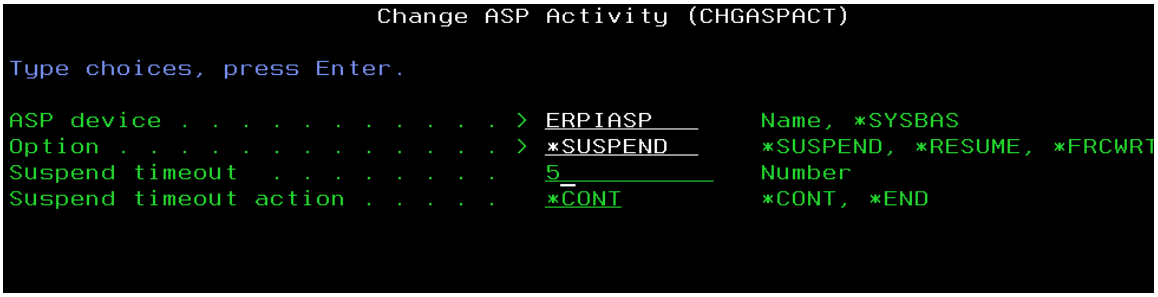
The following shows the command prompt on the secondary node:



Now create a copy description for the FlashCopy node on the FlashCopy partition ERPCLOUDFL:



From secondary node suspend the switched independent ASP before beginning the flash copy relationship:



From the flash copy partition, begin the flash copy relationship using the following command:

```
STRSVCSSN SSN(FLASHCPY) TYPE(*FLASHCPY) ASPCPY((ERPCLOUDFL ERPFLASHFL))
```

Leaving the default value for the remaining parameters specifies a copy rate of 0 with no incremental copy. This relationship is established as a FlashCopy no-copy relationship without a background copy. What this means is that no copy of the independent ASP is made to the flash partition. When data is written to the switched independent ASP, the original unchanged data is written to the flash copy. Accessing the flash copy independent ASP on the flash copy partition presents a point-in-time view of the switched ASP as it was at the time the flash copy relationship began.

From the secondary node, resume the switched independent ASP:

```
CHGASPACT ASPDEV(ERPIASP) OPTION(*RESUME)
```

Allow access to the flash copy independent ASP on the flash partition by varying it on:

```
VRYCFG CFGOBJ(ERPIASP) CFGTYPE(*DEV) STATUS(*ON)
```

The “original” state of the switched IASP at the time the flash copy session was started can now be accessed from the flash copy partition for ad-hoc queries or backup, while updates to the switched IASP continue on the MetroMirror partitions.

Installing WebSphere in the PowerHA environment

There are two possible ways to install WebSphere Application Server (WAS) in a switched disk environment. The first, used in earlier documentation, installs WAS on both servers to the system base (*SYSBAS) storage on each. The advantage of this method is the installation can be done entirely with the GUI installation process, with no command line entry or file editing. The second, described here, installs the WAS user directories onto the IASP so they switch with the application. The advantage of this method is that configuration and tuning parameters also switch and do not have to be dually maintained on the two servers. The process will be to install WebSphere on both the primary and secondary partitions, leaving the product directory (/ProdData) on *SYSBASE and the profile directory (/UserData) to the independent ASP. Since the profile directory is installed to the independent ASP by the install on the primary server, the profile directory install will be omitted on the secondary server install.

Restrictions

To share the same UserData directory on an IASP, the following restrictions apply:

1. The same prerequisite and optional software for WebSphere Application Server must be installed on both the primary and secondary systems.
2. The names of the installation libraries for the WebSphere Application Server installations must be the same on both systems (i.e. QWAS7, QWAS85, QWASxxB, etc).
3. Maintenance of the WebSphere Application Server installations sharing the UserData directory must be completed in such a manner that both systems are kept at the same fix level.
4. The product default Java™ Virtual Machine (JVM) value must be the same for both primary and secondary installations. This should not be an issue if the primary and secondary systems have the same IBM Developer Kit for Java product options installed.

The most practical way to address the second restriction is to ensure that the installation of WebSphere Application Server is the first step completed on each system. After the installation, look in the <app_server_root>/properties/product.properties file to find the name of the installation library. As an example, app_server_root was /QIBM/ProdData/WebSphere/AppServer/V85/Express.

To determine the JVM that the WebSphere Application Server product installation is enabled for use, view the contents of file app_server_root/properties/product.properties:

- If was.use.j9=false, then the installation is enabled to use the "classic" JVM.
- If was.use.j9=true, then :
  - If was.j9.version=32bit, then the installation is enabled to use the "std32" JVM.
  - If was.j9.version=64bit, then the installation is enabled to use the "std64" JVM.

Use the enablejvm command to change the product default JVM.

Installing WebSphere on the primary partition

The steps below show how to perform the install on the primary system. After performing these steps,you will have the product dir (ProdData) dir located on system base (*SYSBAS) storage and the profile dir (UserData) on the IASP.

1. Change the directory to the WAS directory on the WebSphere installation image:
   cd /QOPT/WEBSPHERE/WAS
2. Make a copy of the default response file into the dir of your choice:
   cp /QOPT/WEBSPHERE/WAS/responsefile.express.txt /WAStemp
3. Edit the following option in the response file you created in Step 2:
   -OPT silentInstallLicenseAcceptance="true"
   -OPT installLocation="/QIBM/ProdData/WebSphere/AppServer/V85/Express"
   -OPT defaultProfileLocation="/ERPIASP/QIBM/UserData/WebSphere/AppServer/V85/Express"
   -OPT PROF_enableAdminSecurity="false"
   -OPT PROF_omitAction=samplesInstallAndConfig
4. Install WebSphere using the modified response file from Step 3:
   INSTALL -options /WAStemp/responsefile.express.txt

Installing WebSphere on the secondary partition

After performing these steps you will have the product directory (ProdData) on the system base (*SYSBAS) storage and the profile directory (UserData) on the IASP.

1. Switch the independent ASP to be available on the backup system.
2. Change the directory to to the WAS directory on the WebSphere installation image:
   cd /QOPT/WEBSPHERE/WAS
3. Make a copy of the default response file into the dir of your choice:
   cp /QOPT/WEBSPHERE/WAS/responsefile.express.txt /WAStemp
4. Edit the following option in the response file you created in Step 3:
   -OPT silentInstallLicenseAcceptance="true"
   -OPT installLocation="/QIBM/ProdData/WebSphere/AppServer/V85/Express"
   -OPT defaultProfileLocation="/ERPIASP/QIBM/UserData/WebSphere/AppServer/V85/Express"
   -OPT allowOverrideProfileLocation="true"
   -OPT profileType="none"
   -OPT PROF_enableAdminSecurity="false"
   −OPT PROF_omitAction=samplesInstallAndConfig
5. Install WebSphere using the modified response file from Step 3:
   INSTALL -options /WAStemp/responsefile.express.txt

Note: The two option identified in bold text above prevent the default profile from being created a second time. Remember that the default profile already exists on the independent ASP and was created when the install was done on the primary system.

Adding the IASP group to the WebSphere job description

WebSphere will not be able to locate libraries and databases on the independent ASP unless the job description it uses is changed to specify an initial independent ASP group. Enter the following command on both the primary and secondary systems (in the example yourASPname would be ERPIASP):

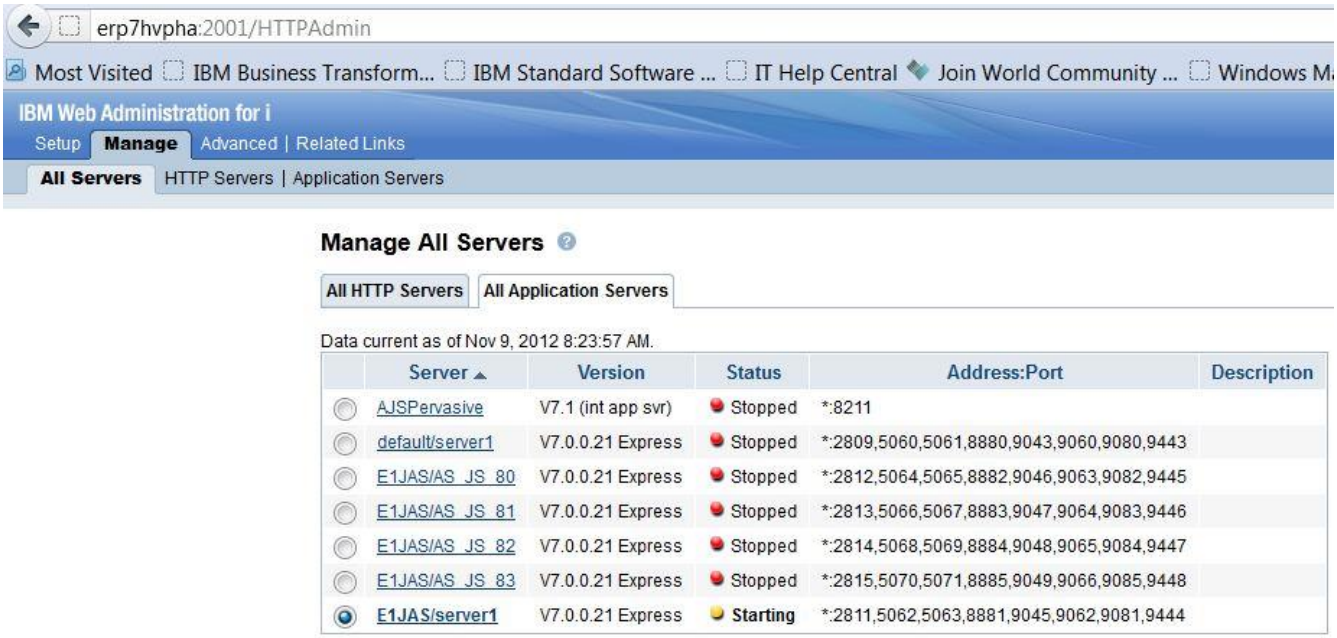
CHGJOBD JOBD(QWAS85/QWASJOBD) INLASPGRP(yourASPname)

Rename WebSphere host name to takeover ip name

When WebSphere is installed, the default system name is set to the host name used throughout the configuration files. In this example, since the installation was done initially from the primary partition, the host name would be ERP7HVPHA. WebSphere should use the takeover IP name as the host name to avoid any IP or naming issues on switchover. To change the WebSphere host name, use the following instructions.

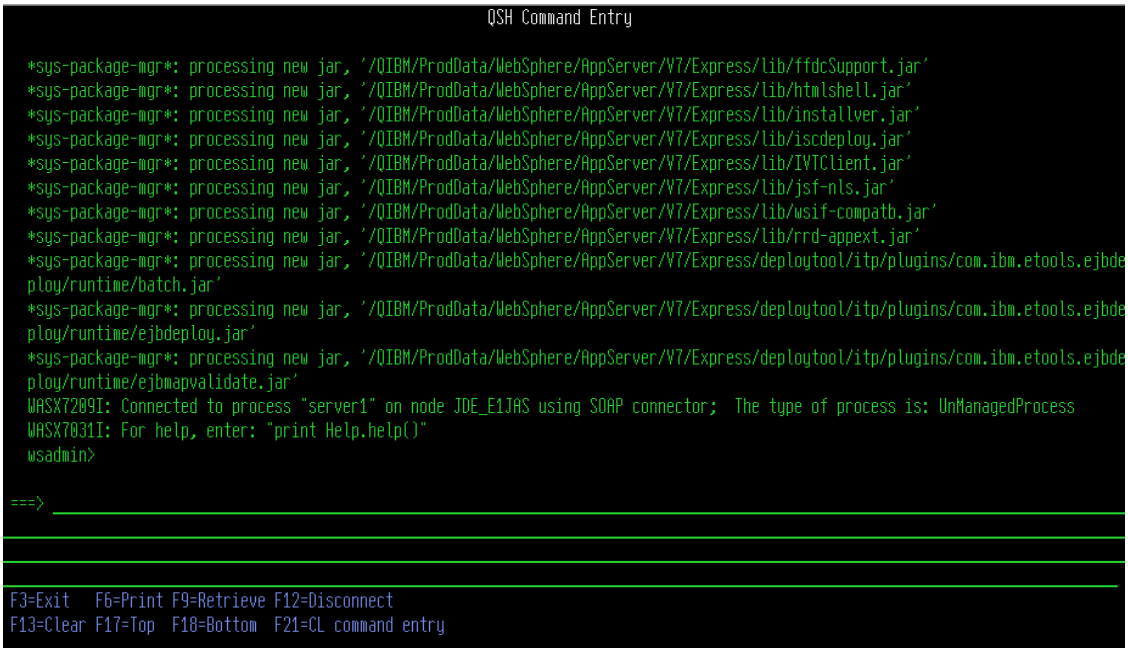
Note: Since the profile directory resides on the IASP changing the host name only needs to be done once.

The application server for the profile needs to be started. In this example, that would be the E1JAS/server1 server.

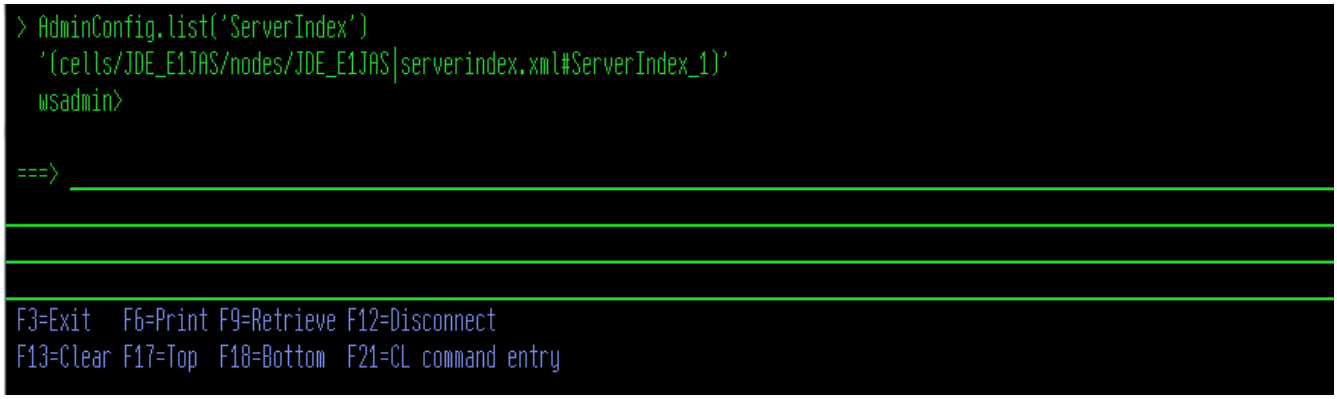


From QSH enter the following two commands:

- cd /ERPIASP/QIBM/UserData/WebSphere/AppServer/V7/Express/profiles/E1JAS/bin
- wsadmin -lang jython



AdminConfig.list('ServerIndex')



In the output, find the string similar to the following:

cells/JDE_E1JAS/nodes/JDE_E1JAS|serverindex.xml#ServerIndex_1

Modify the host name for the application server, similar to the following example:

Enter the following line of code, replacing new_host_name with the name of your takeover ip name (ERPMETRO in the example configuration):

- AdminConfig.modify('(cells/JDE_E1JAS/nodes/JDE_E1JAS|serverindex.xml#ServerIndex_1)', "[[hostName *new_host_name*]]")

The command is shown on two lines for printing purposes.

```
> AdminConfig.modify('(cells/JDE_E1JAS/nodes/JDE_E1JAS|serverindex.xml#ServerIndex_1)',
        "[[hostName ERPMETRO.RCH.STGLABS.IBM.COM]]")
  ''
  wsadmin>
> AdminConfig.show('(cells/JDE_E1JAS/nodes/JDE_E1JAS|serverindex.xml#ServerIndex_1)', 'hostName')
  '[hostName ERPMETRO.RCH.STGLABS.IBM.COM]'
  wsadmin>

===>
```

Modify the host name for the Daemon instance as it applies to the application server, node agent, and deployment manager. Enter the following line of code:

- AdminTask.modifyNodeGroupProperty('DefaultNodeGroup','[-name was.WAS_DAEMON_protocol_iiop_daemon_listenIPAddress -value newHostname]')

Verify that the host name is correct, similar to the following example. Enter the following line of code:

- AdminConfig.show('(cells/JDE_E1JAS/nodes/JDE_E1JAS|Serverindex.xml#ServerIndex_1)', 'hostName')

The command is shown on two lines for printing purposes.

The response is:

- '[hostName ERPMETRO.RCH.STGLABS.IBM.COM]'

```
> AdminConfig.show('(cells/JDE_E1JAS/nodes/JDE_E1JAS|Serverindex.xml#ServerIndex_1)', 'hostName')
  '[hostName ERPMETRO.RCH.STGLABS.IBM.COM]'
  wsadmin>


===>
```

Save the configuration. Enter the following line of code:

- AdminConfig.save()

Type exit to end the wsadmin session.

Update the application server with the changes.

Stop the application server. Enter the following command:

- stopServer server1 -profileName AppSrv01

Restart the application server. Enter the following command:

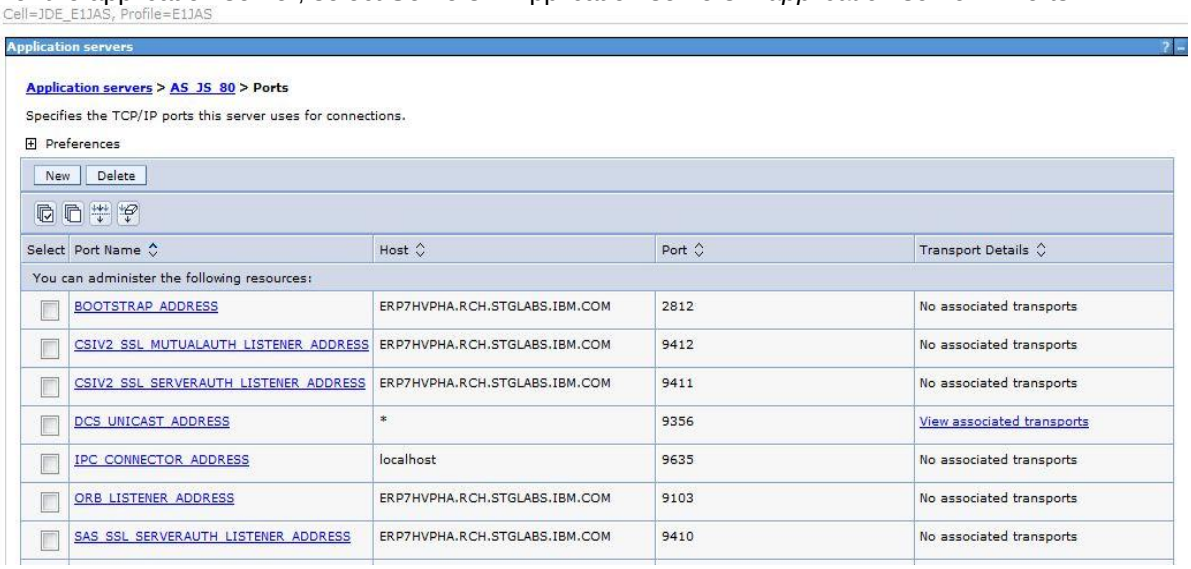
- startServer server1 -profileName AppSrv01

Correct the host names for the ports that an application server opens.

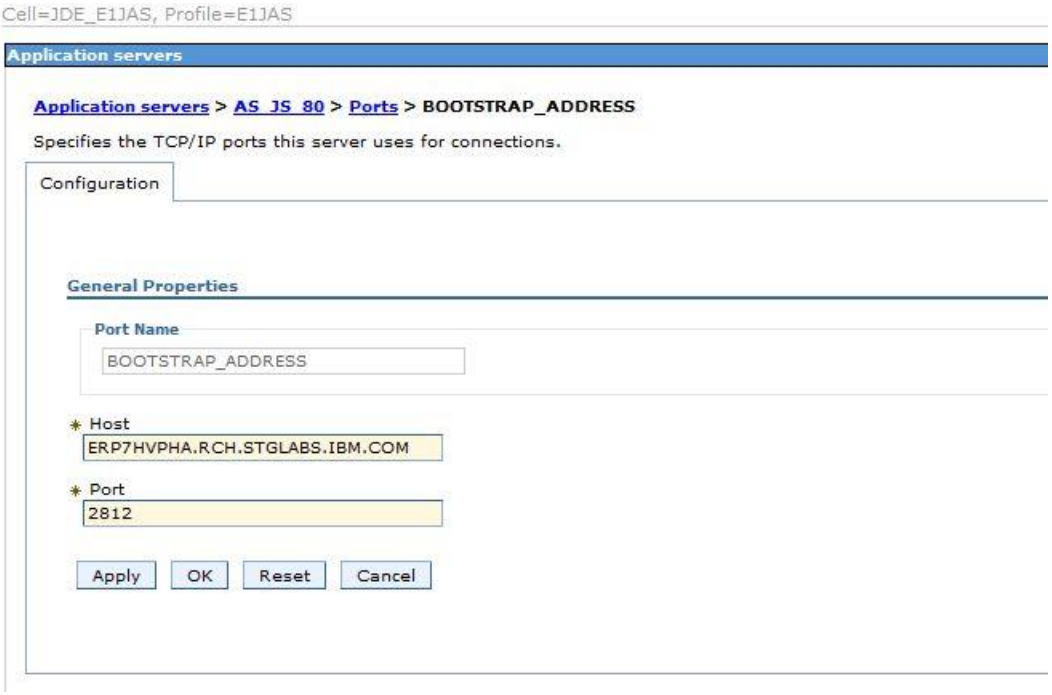
If you have to correct the host names of the server ports, then you can make the correction using command line tools and either the wsadmin scripting tool or the administrative console. You might have

to correct the host names of multiple ports for a particular server. This example shows you how to correct the host names using the administrative console and command line tools.

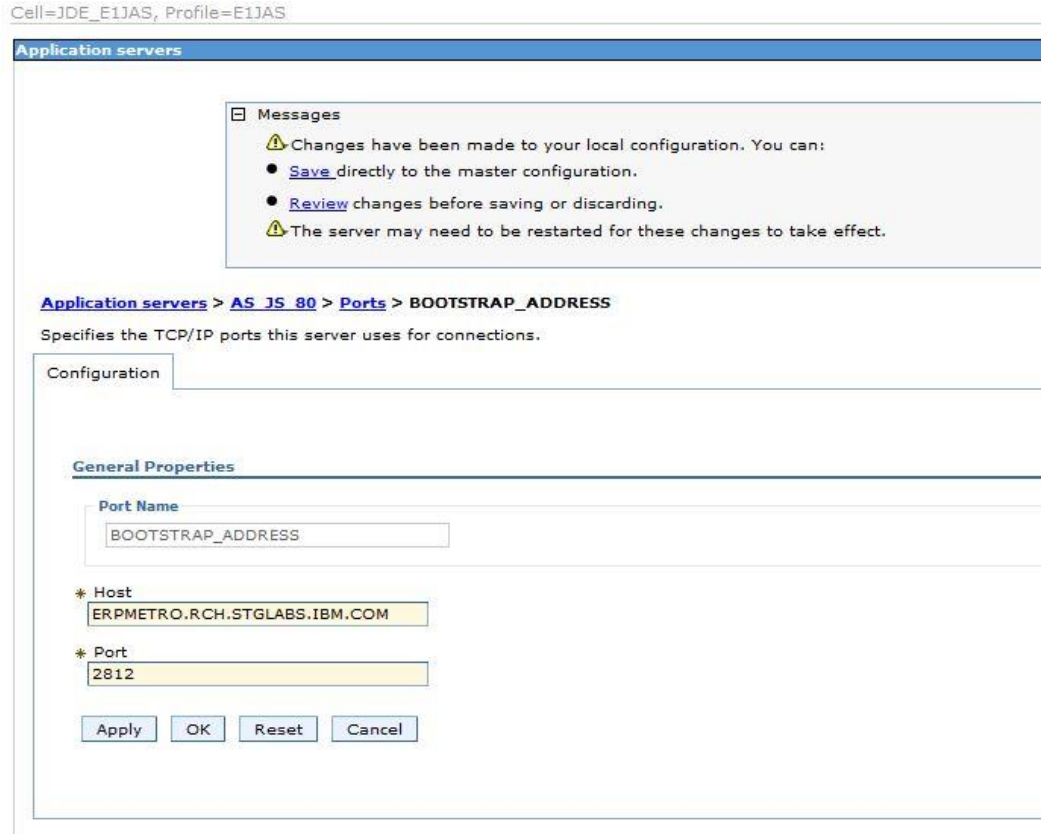
For the application server, select Servers > Application servers > *application server* > Ports .



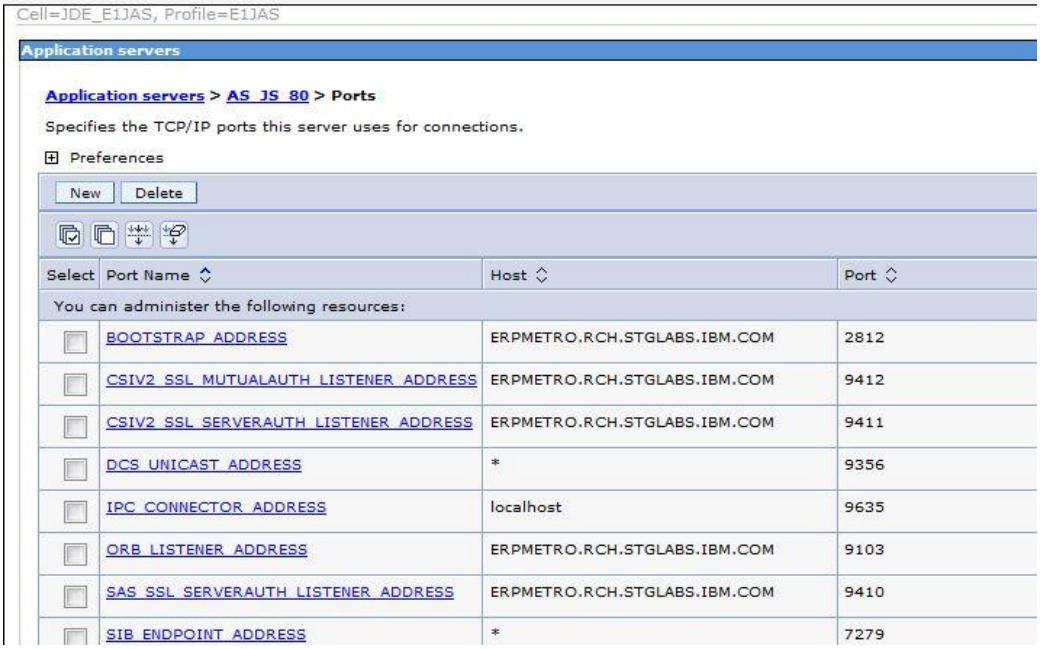
Select a port whose host name needs changing.



Change the host name in the Host field; Click OK.



Continue until you correct each of the host names for the server ports.



Save the changes to the master configuration.

Update the application server with the changes.

Stop the application server. Enter the following command:
stopServer

```
> stopServer server1
  ADMU0116I: Tool information is being logged in file
             /ERPIASP/QIBM/UserData/WebSphere/AppServer/V7/Express/profiles/E1
  AS/logs/server1/stopServer.log
  ADMU0128I: Starting tool with the E1JAS profile
  ADMU3100I: Reading configuration for server: server1
  ADMU3201I: Server stop request issued. Waiting for stop status.
  ADMU4000I: Server server1 stop completed.

  $

===>
```

Restart the application server. Enter the following command:
startServer server1

```
> startServer server1
  CPC1221: Job 051747/QEJBSVR/SERVER1 submitted to job queue QWASJOBQ in
  library QWAS7.
  CWNATV00I: Application server server1 in profile E1JAS has started and is re
  dy to accept connections on admin port 9062.

  $

===>
```

HTTP servers in the PowerHA environment

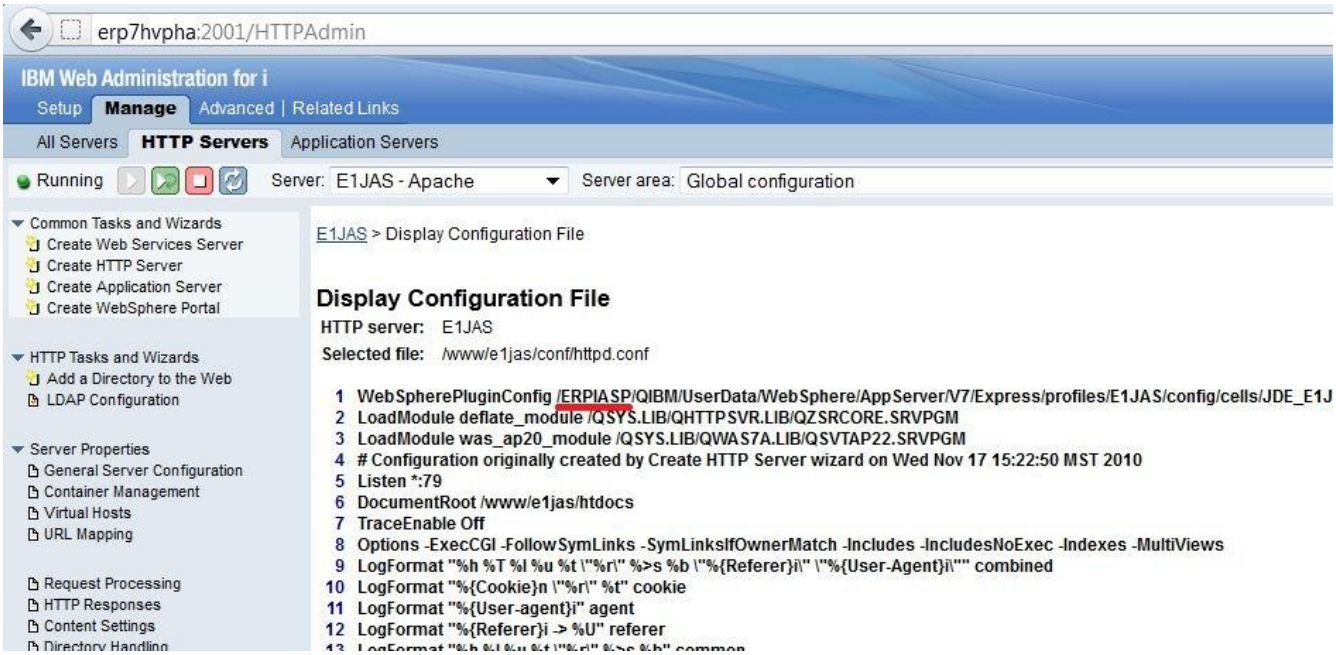
The "all-on-i" environment created in this example by the Express Install has two possible configurations. Either the HTTP servers can be duplicated on both cluster nodes with their configurations maintained separately or they can be migrated to the independent ASP with the advantage of the single configuration and logging location. Both methods are described here. Follow the instructions below to duplicate a server, or skip to the section on Migrating the HTTP Server.

Duplicating the HTTP Server

This section describes duplicating the HTTP server for a secondary cluster node. This process is slightly simpler than migrating the HTTP server, but has the disadvantage of having to maintain the http.conf file on each node.

The process for duplicating the servers on both cluster nodes has the following actions:

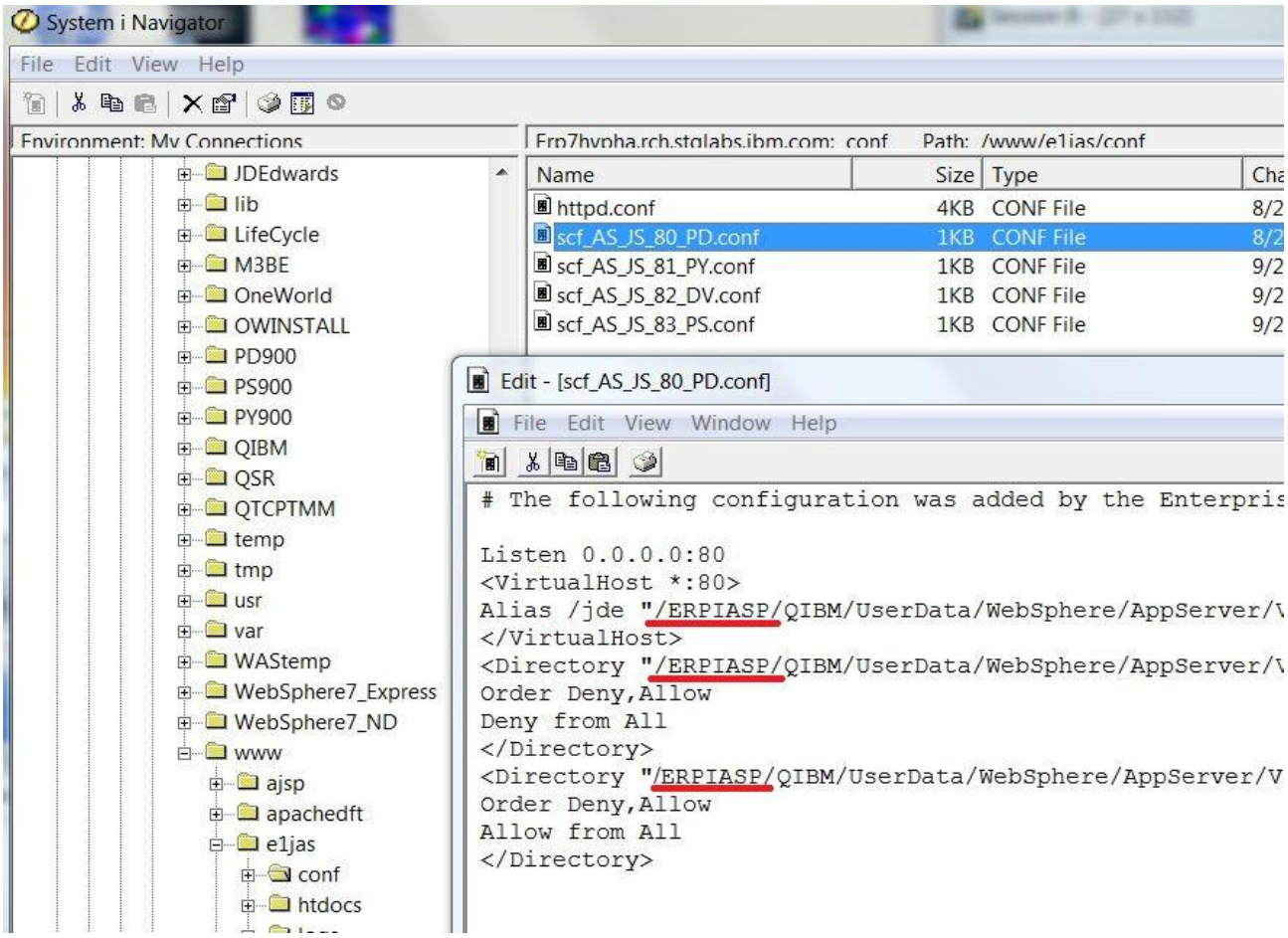
1. Edit the /www/*httpservername*/httpd.conf file pathnames to include the IASP directory. In the Express Install, the http server created is E1JAS, so this path would be /www/E1JAS/httpd.conf. Add this in front of the WebSpherePluginConfig file pathname.



2. Edit any configuration include files. These four files need any pathnames to the IASP changed.

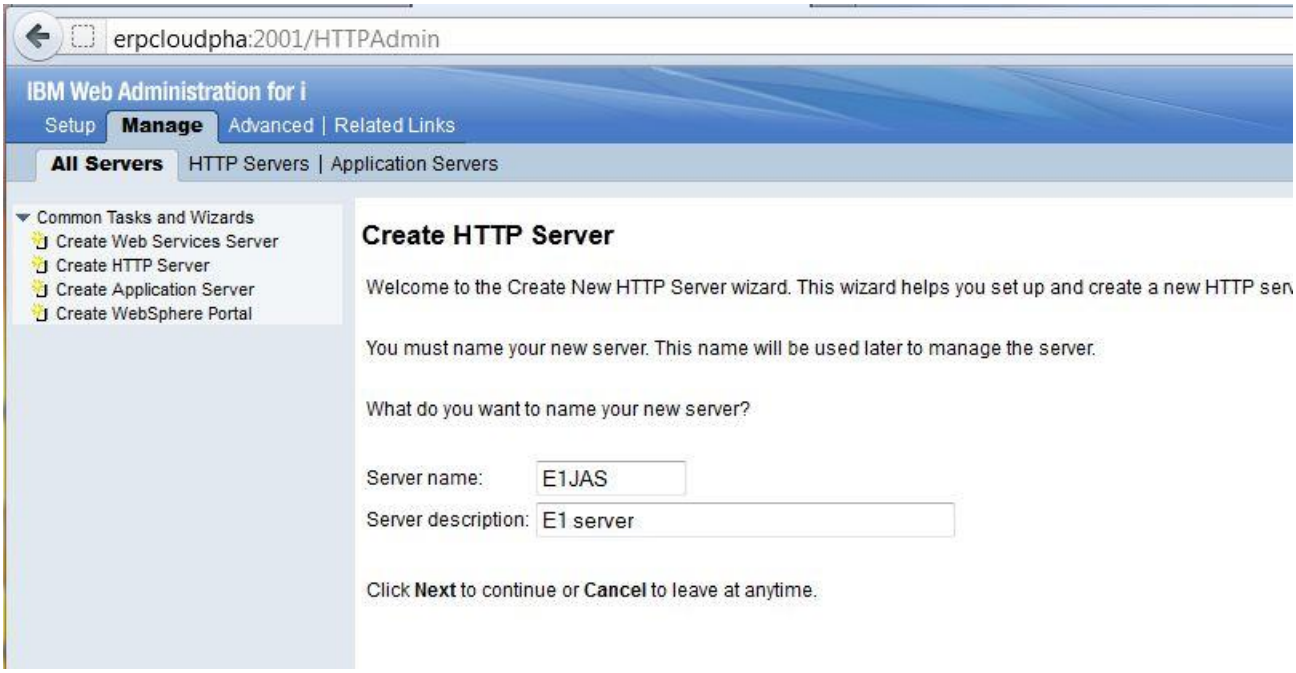
```
35    Allow From all
36 </Directory>
37
38
39 Include /www/E1JAS/conf/scf_AS_JS_80_PD.conf
40
41 Include /www/E1JAS/conf/scf_AS_JS_81_PY.conf
42
43 Include /www/E1JAS/conf/scf_AS_JS_82_DV.conf
44
45 Include /www/E1JAS/conf/scf_AS_JS_83_PS.conf
```

Any editor can be used, this example shows the System i Navigator.

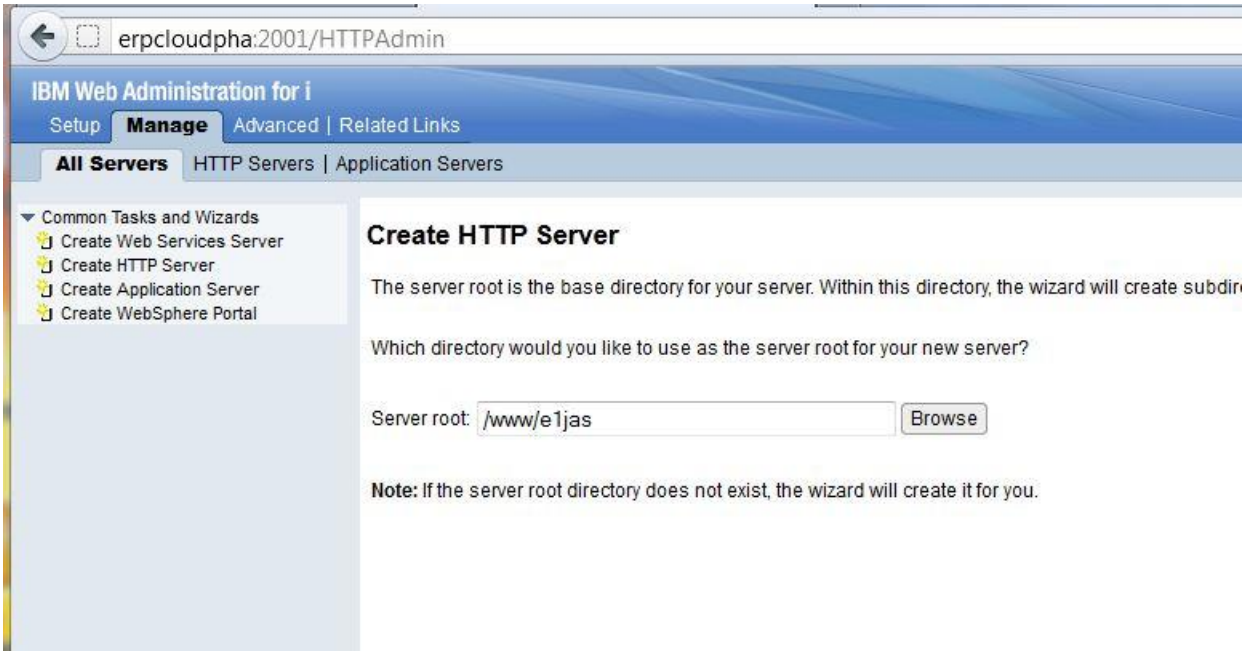


3. Save and restore the /www/*httpservername* directory from the primary partition to the secondary partition.
4. Switch the cluster resource group.
5. Create an HTTP server on the secondary partition using the secondary partition's IBM i Navigator Web Administration for i interface (port 2001).

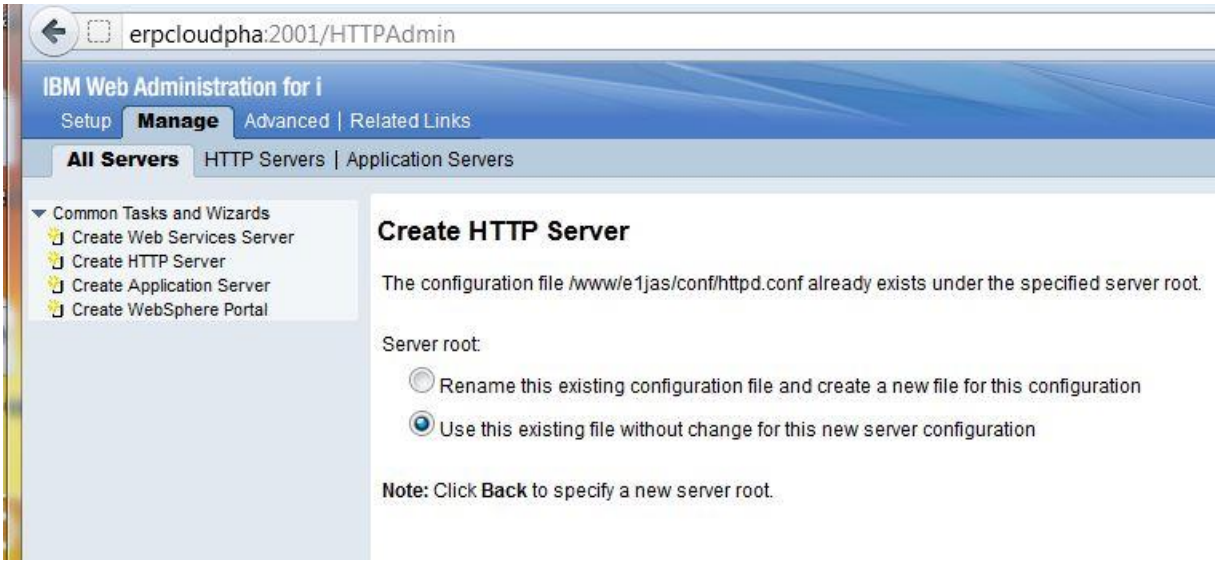
Select the Create HTTP Server in the left hand menu bar. Enter the same server name used for the primary partition's HTTP server, in this example E1JAS.



On the next panel, the server root directory should point to the /www/*httpservername* directory restored from the primary partition.



The next panel questions whether to rename the existing configuration file or use the file without change. Choose 'Use the existing file without change'.



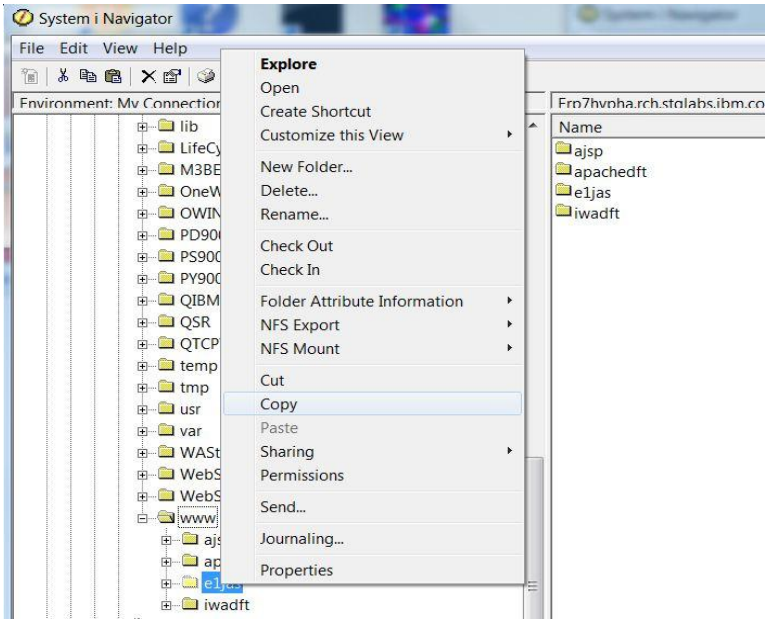
The server should be created and a confirmation panel displayed.

Migrating the HTTP Server

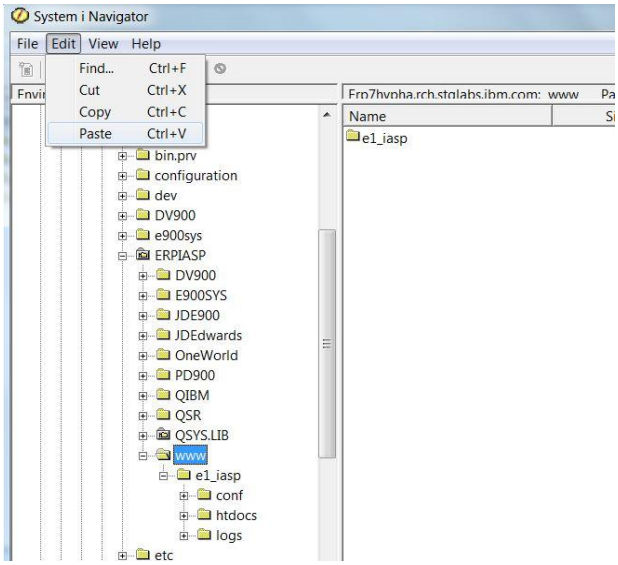
The process for migrating to the independent ASP has the following actions:

1. Use System i Navigator to copy the /www/E1JAS directory to the IASP

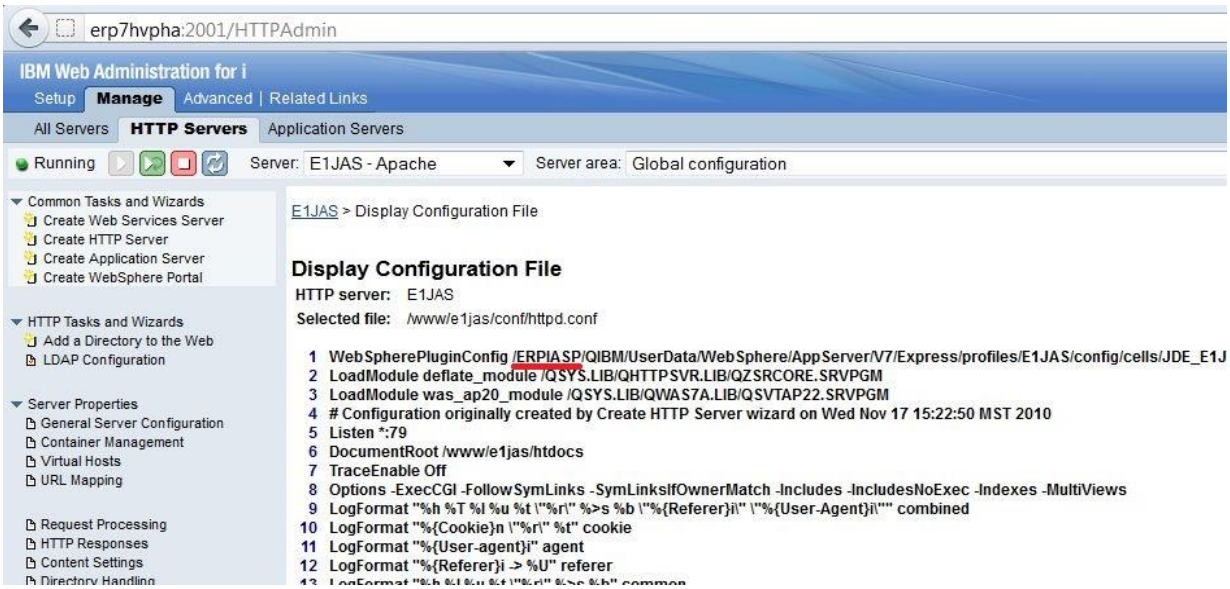
   Copy:

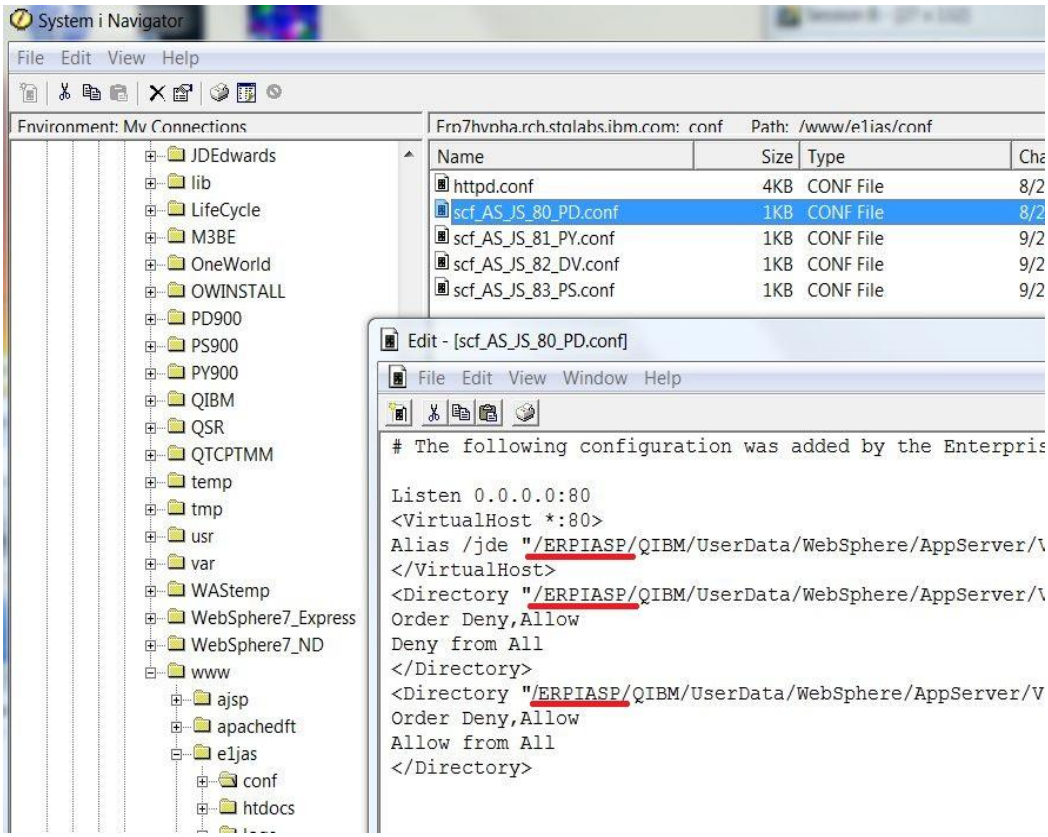


   Paste:

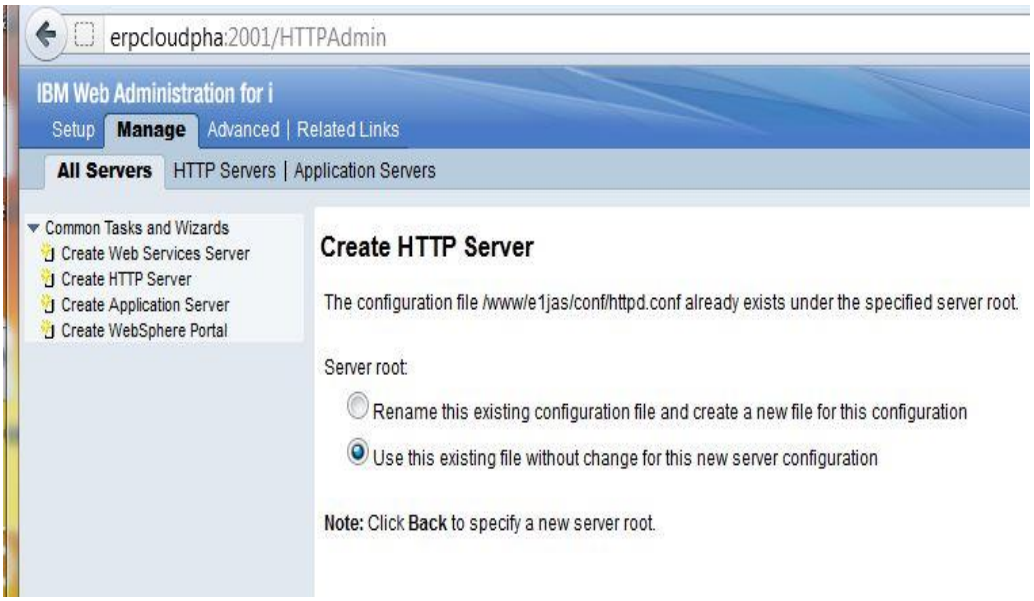


2. Delete the existing HTTP server on the primary partition using the Web Administration for i interface.
3. Create the HTTP server on the primary partition.
4. Edit the configuration file to contain the IASP pathname.





5. Switch the cluster resource group
6. Create a new HTTP server on the secondary node of the same name, and specify it should reuse the existing configuration.



7. Regenerate and propagate the plugin for the web server using the Websphere Integrated Solutions Console.

Migrating JD Edwards EnterpriseOne into an IASP

This section describes the high level process for migration. Note that JD Edwards EnterpriseOne installation scripts currently do not support direct installation into an IASP, thus the application must be installed first into the system base (*SYSBAS) storage and migrated later. The initial installation of the application is not described in this documentation. This example used JD Edwards EnterpriseOne tools 9.2.1 and application 9.1. But the information listed should apply to any supported EnterpriseOne releases – just modify the library and directory names.

Preparing for migration

The following is the list of actions to take before starting the migration process.

Back up the environment

It is always recommended to do a full save of the system environment before making any major changes.

Verifying the relational database (RDB) configuration

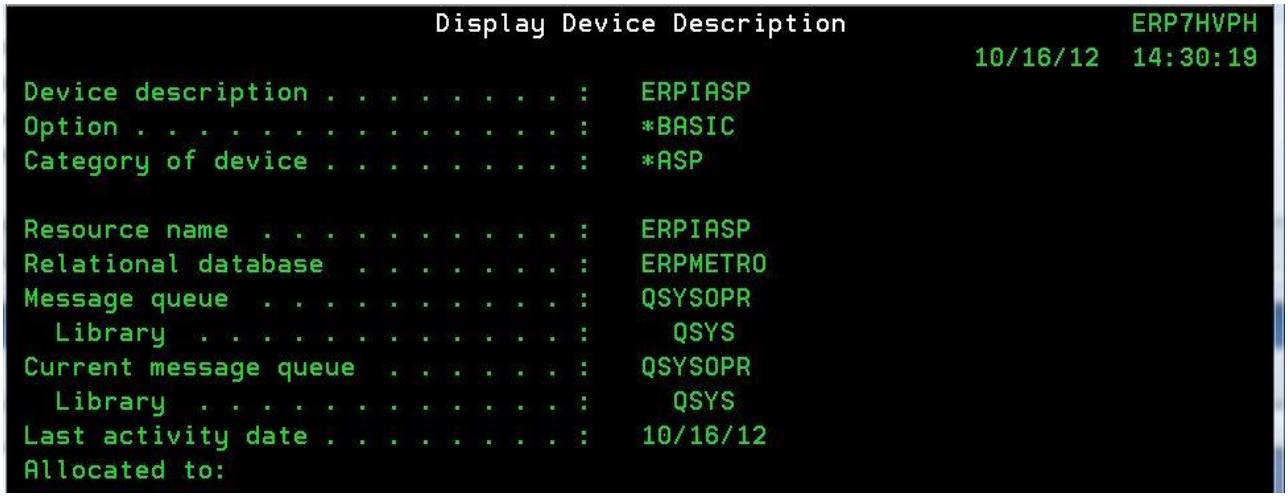
Whenever an independent ASP is varied on, the system will add an entry to the relational database directory corresponding to the name of the independent ASP. Note that the name of the relational database (RDB name) must be the same as the name associated with the takeover IP address. Although recommended, the RDB name does not have to have the same name as the independent ASP. This will be illustrated through the remainder of the document. Here are the pertinent screens from the example system:

Using the following Work Configuration Status (WRKCFGSTS) command shows the IASP named ERPIASP:

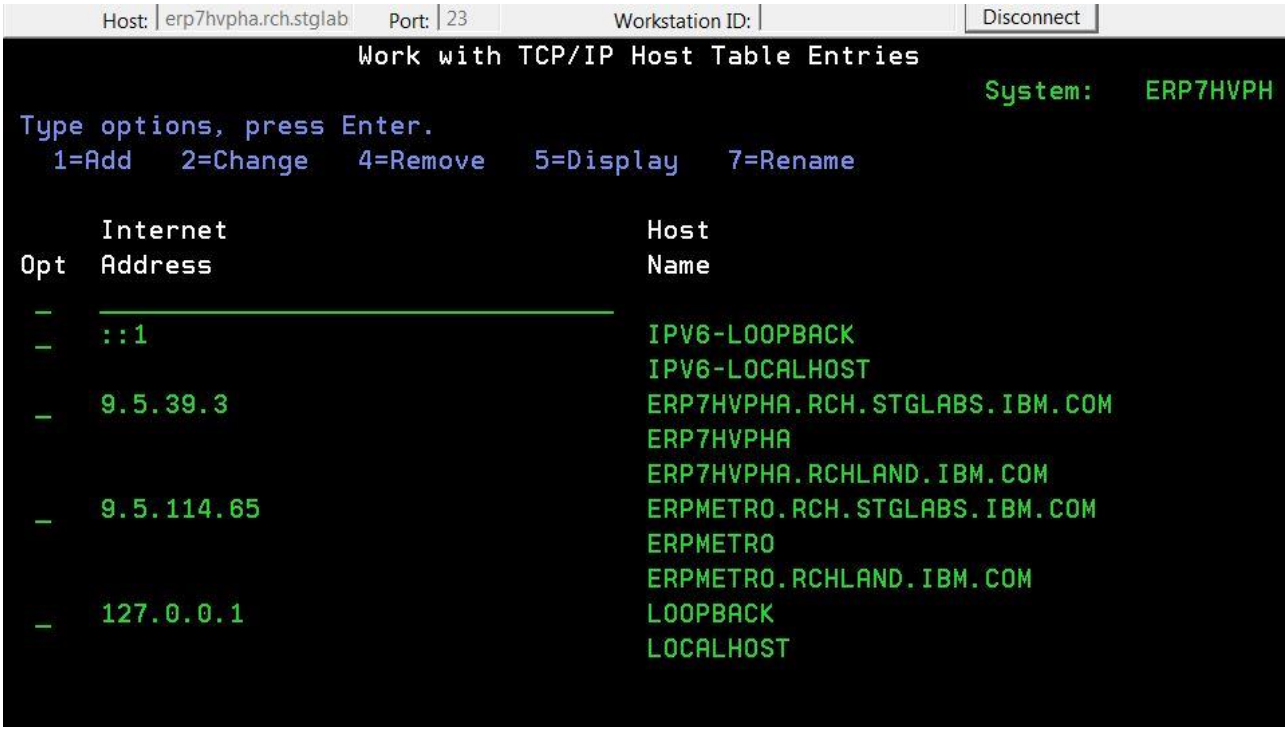
```
WRKCFGSTS CFGTYPE(*DEV) CFGD(*ASP)
```

Using the following Display Device Description (DSPDEVD) command shows the mapping of the resource name to the relational database name. In this case, the resource name ERPIASP is mapped to relational database name ERPMETRO:

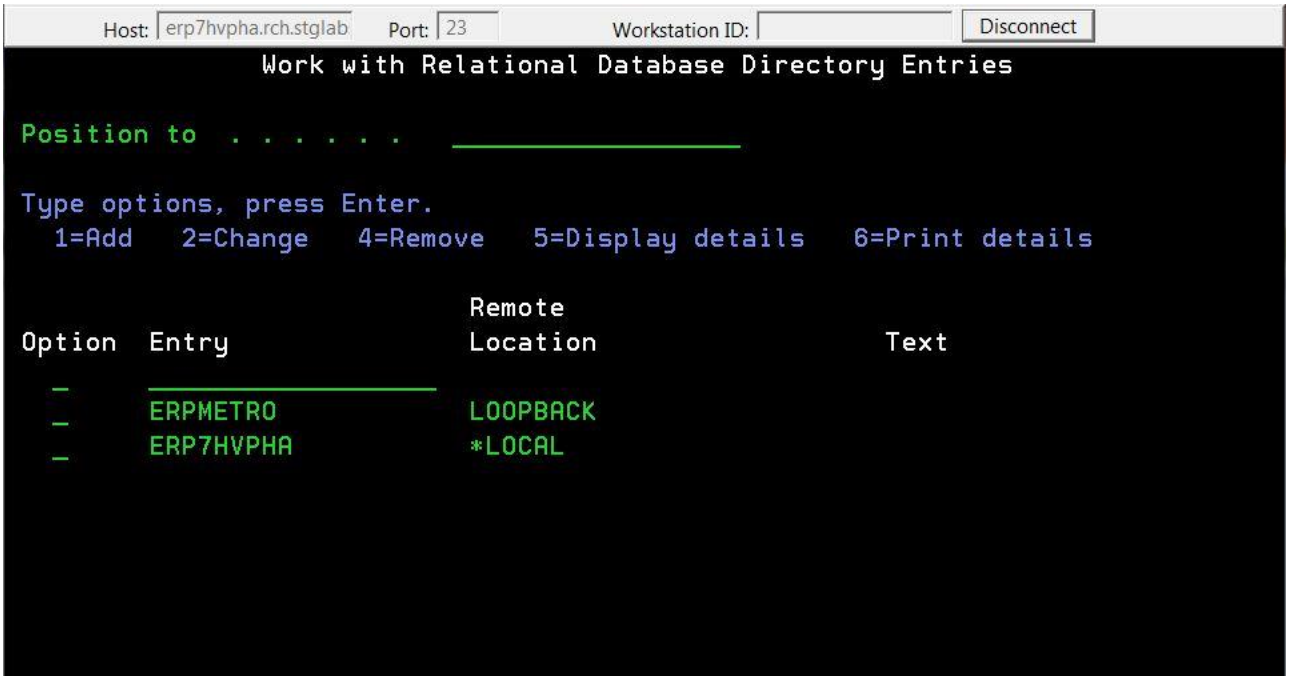
```
DSPDEVD DEVD(ERPIASP)
```



CFGTCP option 10 – Work with TCP/IP host table entries. ERP7HVPHA is the primary server, ERPMETRO is the takeover IP name, matching the relational database name.



Using the Work with Relational Database Directory Entries (WRKRDBDIRE) command shows the relational database name of ERPMETRO, matching the takeover IP name.



Shutdown JD Edwards EnterpriseOne

The following steps can be used to shutdown the JD Edwards EnterpriseOne application.

1. End the HTTP servers
2. End the WAS HTML servers
3. ENDNET
4. CLRIPC
5. End any other application or Websphere software
   - JD Edwards Server Manager agent
   - Websphere Application Server node
   - Websphere Application Server manager

Removing unnecessary data

Do any cleanup that will improve the performance of the migration. Some possibilities include:

1. Delete the older unneeded journal receivers in library OWJRNL using the Delete Journal Receivers (DLTJRNRCV) command.
2. Delete unneeded logs in the JDE9xx directory.
3. Archive older application data that won't be needed after the migration. This is especially useful as the migration of the application data is one of the longer steps in the process.
4. Delete SQLPKG objects in the libraries to be migrated using the Delete SQL Package (DLTSQLPKG) command. The access plans represented by the SQLPKG objects will be rebuilt due to the move anyway, and the SQLPKG objects will be recreated at that time.

Migrating objects into the independent ASP

This section describes the objects that need to be moved into the independent ASP and how to migrate them. Note that each phase of operations can be done in parallel by using the Submit Job (SBMJOB) command to submit the work to batch.

Migrating JD Edwards EnterpriseOne libraries

The following section describes the process for selecting and moving libraries to the IASP.

Selecting the libraries to migrate

The following table shows the base shared libraries that need to be moved into the IASP to support any JD Edwards EnterpriseOne environment.

Note: Library E9xxSYS is not included in this list. Previously, this foundation library could not be moved because of restrictions related to the use of subsystem descriptions and other work management objects such as job queues, classes, and job descriptions. The ASP Group (ASPGRP) parameter added to the Create Subsystem Description (CRTSBSD) and Change Subsystem Description (CHGSBSD) commands can be used to include an independent ASP in the namespace of the subsystem monitor job. This allows these work management objects to be in an IASP. However, there are still naming dependencies within JD Edwards EnterpriseOne solution which preclude placing the E9xxSYS foundation library into the IASP.

Environment	Library Name	Contents
Shared	DD9xx	Data Dictionary tables
Shared	JDEOW	Menus and executable programs
Shared	OL9xx	Object Librarian tables
Shared	OWJRNL	Journaling
Shared	SVM9xx	Server Map tables
Shared	SY9xx	System tables

The following table lists the libraries that need to be moved into the IASP to support the Production environment.

Environment	Library Name	Contents
Production	COPD9xx	Central Objects and Versions tables
Production	PD9xx	Pathcode service programs
Production	PD9xxFA	Parent package service programs
Production	PRODCTL	Control tables and Data Dictionary tables
Production	PRODDTA	Business Data tables

The following table lists the libraries that need to be moved into the IASP to support the other standard environments.

Environment	Library Name	Contents
Development	CODV9xx	Central Objects and Versions tables
Development	DV9xx	Pathcode service programs
Development	DV9xxFA	Parent package service programs
Development	TESTCTL	Control Tables and Data Dictionary tables
Development	TESTDTA	Business Data tables
Pristine	COPS9xx	Central Objects and Versions tables
Pristine	PS9xx	Pathcode service programs
Pristine	PS9xxFA	Parent package service programs
Pristine	PS9xxCTL	Control Tables and Data Dictionary tables
Pristine	PS9xxDTA	Business Data tables
Prototype	COPY9xx	Central Objects and Versions tables
Prototype	PY9xx	Pathcode service programs
Prototype	PY9xxFA	Parent package service programs
Prototype	CRPCTL	Control Tables and Data Dictionary tables
Prototype	CRPDTA	Business Data tables

IASP support requires that the journal and journal receiver for any journaled objects must all be located in the same auxiliary storage pool. If a file will be migrated into an IASP, its journal and journal receiver must also be migrated into that same IASP.

JD Edwards EnterpriseOne uses a single journal in library OWJRNL. This means OWJRNL must be moved to the IASP to journal any environment. Because of the same-ASP requirement between journal and journaled objects, it also means ***all*** environments that will be used must also move to the IASP. It's not possible for example to have the DV9xx development environment in the *SYSBAS ASP and the PD9xx production environment in the IASP.

For more information on the libraries used by JD Edwards EnterpriseOne, please refer to the appropriate install documentation.

Migrating the libraries

Moving libraries to an independent ASP can be accomplished by the following three steps which will be described in more detail below. They are:

1. Save the libraries to save files.
2. Delete the libraries from system space.

3. Restore the libraries to the independent ASP.

> **Note:** The PowerHA for i provides a graphical interface that simplifies this process by performing all three of these steps. It provides the user with a list of the libraries on the system with an option to migrate them into the independent ASP.

Saving the libraries

The following CL commands can be used for each of the libraries to be migrated:

- `CRTSAVF FILE(save-file-library/save-file-name)`
- `SAVLIB LIB(library-to-save) DEV(*SAVF) SAVF(save-file-library/save-file-name) ACCPTH(*YES) DTACPR(*YES)`

For example, the following commands can be used to save the library DD920:

- `CRTSAVF FILE(JDELIBS/DD920)`
- `SAVLIB LIB(DD920) DEV(*SAVF) SAVF(JDELIBS/DD920) ACCPTH(*YES) DTACPR(*YES)`

The Save Access Paths (ACCPTH) keyword can be used on the SAVLIB command to indicate whether or not any access paths related to files in the library being saved should also be saved. Specifying a value of *YES reduces the need for access path rebuilds during the restore operation. The Data Compression (DTACPR) keyword can be used to specify the degree to which data will be compressed during the save operation. This helps minimize the size of the save files when storage space is limited. It supports other values such as *MEDIUM and *HIGH. Specifying these higher values will result in greater processor requirements and longer elapsed time for save and restore operations.

Deleting the libraries

Before proceeding with the delete operation, verify that all libraries have been completely saved into their save files. If a full save of the environment has not been done, do so now.

Deleting all the original libraries from the system ASP is necessary because the same library name cannot exist in the both System ASP and the IASP at the same time. As a result, any library must be deleted from the System ASP before it can be restored into an IASP.

The Delete Library (DLTLIB) command can be used to delete libraries:

```
DLTLIB LIB(library-to-delete)
```

Restoring the libraries into the independent ASP

The following command can be used to restore the libraries saved above:

- `RSTLIB SAVLIB(library-to-restore) DEV(*SAVF) SAVF(save-file-library/save-file-name) RSTASPDEV(independent-asp-name)`

For example, the following command can be used to restore the library DD920 into the independent ASP of the example, named ERPIASP:

```
RSTLIB SAVLIB(DD920) DEV(*SAVF) SAVF(JDELIBS/DD920)
RSTASPDEV(ERPIASP)
```

Migrating JD Edwards EnterpriseOne IFS directories

The following section describes the process for selecting and moving Integrated File System (IFS) directories to the IASP.

Selecting the directories to migrate

The following table shows the base shared directories that need to be moved into the IASP to support any JD Edwards EnterpriseOne Application environment. It also contains the list of directories by environment.

Environment	Directory Name
Shared	E9xxSYS
Shared	JDE9xx
Shared	JDEdwards
Shared	OneWorld
Production	PD9xx
Development	DV9xx
Pristine	PS9xx
Prototype	PY9xx

How to migrate the directories

When an IASP is created, an IFS directory is created in the system's root directory with the same name as the IASP. Any IFS objects that resided in this directory are actually allocated from storage in the IASP. Migrating IFS directories into the IASP is much like migrating libraries. It can be accomplished by the following four steps which will be described in more detail below. They are:

1. Save the directories to save files.
2. Delete the directories from system storage.
3. Restore the directories to the IASP.
4. Create symbolic links in the root directory.

> Note: The PowerHA for i provides a graphical interface that simplifies this process. It provides a list of the libraries on the system with an option to migrate them into the IASP. It manages all of three of these steps.

Saving the directories

The following CL commands can be used for each of the directories to be migrated:

- `CRTSAVF FILE(save-file-library/save-file-name)`

- `SAV DEV('/qsys.lib/save-file-library.lib/save-file-name.file') OBJ('/directory-name-to-save')`

For example, the following commands can be used to save the directory E920SYS:

- `CRTSAVF FILE(JDEIFS/E920SYS)`
- `SAV DEV('/qsys.lib/jdeifs.lib/e920sys.file') OBJ('/E920SYS')`

Deleting the directories

Before proceeding with the delete operation, verify that all directories have been completely saved into their save files. The Remove Directory (RMVDIR) command can be used to delete the directories:

```
RMVDIR DIR('/directory-name-to-delete') SUBTREE(*ALL)
```

Warning: The SUBTREE(*ALL) is needed to allow all the objects in the directory to also be deleted, including any sub-directories. Make sure you specify the correct directory name for the DIR parameter!

Restoring the directories into the independent ASP

The Restore (RST) command can be used to restore the directories saved above:

```
RST DEV('/qsys.lib/save-file-library.lib/save-file-name.file')
OBJ(('/directory-name-to-restore' *INCLUDE '/iasp-name/directory-
name-to-restore'))
```

For example, the following command can be used to restore the E920SYS directory into an IASP named ERPIASP:

```
RST DEV('/qsys.lib/jdeifs.lib/e920sys.file') OBJ(('/E920SYS'
*INCLUDE '/ERPIASP/E920SYS'))
```

Creating symbolic links

A symbolic link must be created for every IFS directory that is moved from the System ASP to the IASP. The symbolic link automatically redirects any reference to the directory to its new location in the IASP. This allows applications like EnterpriseOne to run without the need to change any directory references in the applications programs.

A symbolic link must be created for each directory which has been moved into the IASP. These symbolic links must be created on both the primary and back up node in the cluster. The Add Link (ADDLNK) CL command can be used to create the symbolic link:

```
ADDLNK OBJ('/iasp-name/directory-name') NEWLNK('/directory-name')
```

For example, the following command can be used to create the symbolic link to the directory E920SYS which has been moved to an IASP named ERPIASP:

```
ADDLNK OBJ('/ERPIASP/E920SYS') NEWLNK('/E920SYS')
```

The Work with Object Links (WRKLNK) command can be used to view all the symbolic links which have been created. On the Work with Object Links panel you can use option 12=Work With Links to see details for a given link.

```
WRKLNK OBJ('/*') OBJTYPE(*SYMLNK) DETAIL(*EXTENDED)
```

```
                          Work with Object Links

Directory  . . . . :   /

Type options, press Enter.
  9=Work with authority   10=Move   12=Work with links
  13=Change attribute ...

Opt   Object link            Type             Attribute    Text
      bin                    SYMLNK->DIR
      lib                    SYMLNK->DIR
      DV920                  SYMLNK->DIR
      E920SYS                SYMLNK->DIR
      JDEdwards              SYMLNK->DIR
12    JDE920                 SYMLNK->DIR
      OneWorld               SYMLNK->DIR
      PD920                  SYMLNK->DIR

                                                                    Bottom
Parameters or command
===>
```

```
                          Display Symbolic Link

Object link  . . . . . :   /JDE920


Content of Link  . . . :   /ERPIASP/JDE920
```

Configuration changes after migration

The following section describes the configuration changes needed after the migration of libraries and directories into the IASP.

Changing job descriptions

Job descriptions used by JD Edwards EnterpriseOne user profiles must have the ASP group (ASPGRP) attribute set to the name of the IASP. The best practice recommendation is to create new job descriptions and then add them to a cluster administrative domain to avoid any conflicts with shared usage of the existing job descriptions. A cluster administrative domain was configured during the cluster configuration described earlier. The job descriptions can be added to the administrative domain from the command line with the Add Admin Domain MRE (ADDCADMRE) command or from the IBM i Navigator graphical user interface. This example illustrates using the command line. Using the graphical user interface is described in the next section for user profiles, the process for job descriptions is similar.

1. Create the job descriptions and change their initial ASP group to the IASP.

```
> CRTDUPOBJ OBJ(QDFTJOBD) FROMLIB(QGPL) OBJTYPE(*JOBD) NEWOBJ(JDEI)
  Object JDEI in QGPL type *JOBD created.
  1 objects duplicated.
> CRTDUPOBJ OBJ(ONEWORLD) FROMLIB(QGPL) OBJTYPE(*JOBD) NEWOBJ(ONEWORLDI)
  Object ONEWORLDI in QGPL type *JOBD created.
  1 objects duplicated.
> CHGJOBD JOBD(JDEI) INLASPGRP(ERPIASP)
  Job description JDEI in library QGPL changed.
> CHGJOBD JOBD(ONEWORLDI) INLASPGRP(ERPIASP)
  Job description ONEWORLDI in library QGPL changed.
```

2. Change the JDE user profiles to use the new job descriptions and add the job descriptions as managed resource elements to the cluster admininstrative domain.

```
> CHGUSRPRF USRPRF(JDE) JOBD(QGPL/JDEI)
  User profile JDE changed.
> CHGUSRPRF USRPRF(ONEWORLD) JOBD(QGPL/ONEWORLDI)
  User profile ONEWORLD changed.
> ADDCADMRE CLUSTER(ERPCLU) ADMDMN(ERPADM) RESOURCE(JDEI) RSCTYPE(*JOBD) RS
  CLIB(QGPL)
  Cluster Resource Services API QfpadAddMonitoredResourceEntry completed.
  Resource added to cluster administrative domain ERPADM.
> ADDCADMRE CLUSTER(ERPCLU) ADMDMN(ERPADM) RESOURCE(ONEWORLDI) RSCTYPE(*JOB
  D) RSCLIB(QGPL)
  Cluster Resource Services API QfpadAddMonitoredResourceEntry completed.
  Resource added to cluster administrative domain ERPADM.
```

In addition to the job descriptions above, used by the JDE and ONEWORLD user profiles, you should make changes to the job description NETJOBD in library E9xxSYS. This job description is used when EnterpriseOne services are started (STRNET) and in general we need the EnterpriseOne services (kernel jobs) to run with the IASP defined. The following example will modify the NETJOBD job description in library E920SYS and add it to the administrative domain:

```
CHGJOBD JOBD(E920SYS/NETJOBD) INLASPGRP(ERPIASP)

ADDCADMRE CLUSTER(ERPCLU) ADMDMN(ERPADM) RESOURCE(NETJOBD) RSCTYPE(*JOBD)
RSCLIB(E920SYS)
```

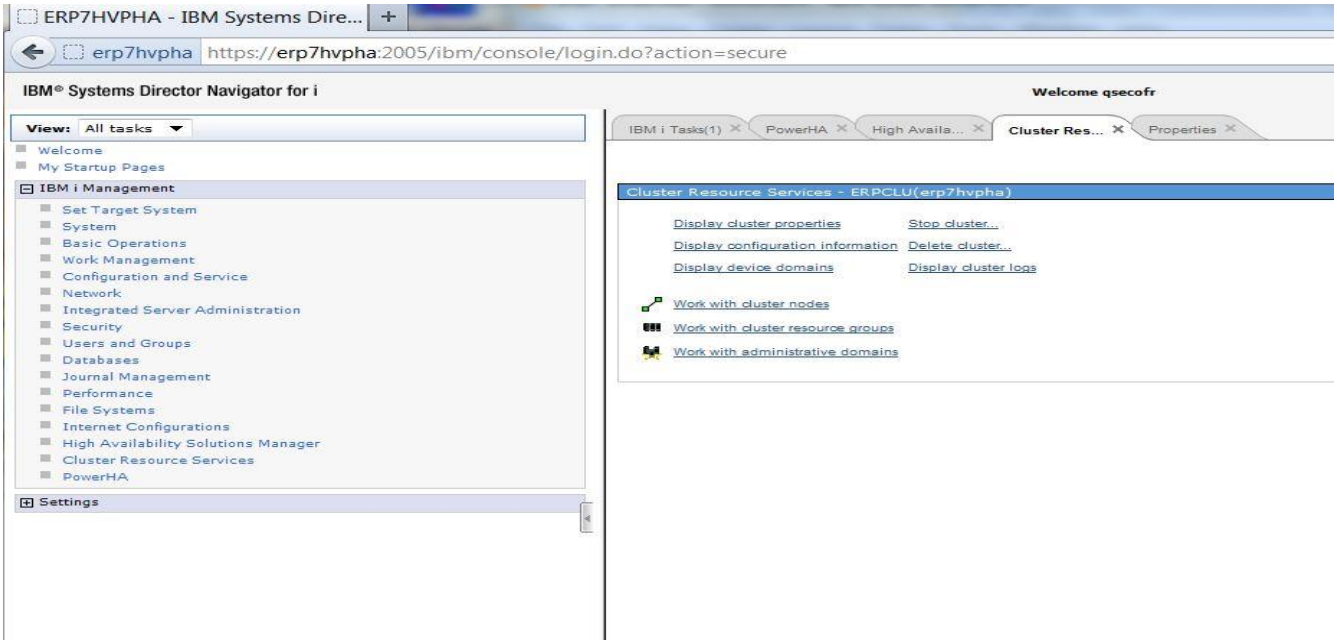
If the user profile used to start EnterpriseOne services has the IASP set as part of their job, then this would be passed on as part of the STRNET command. In which case changing the NETJOBD job description is not required. But the recommendation is to modify the job description to avoid any issues.

Configuring user profiles

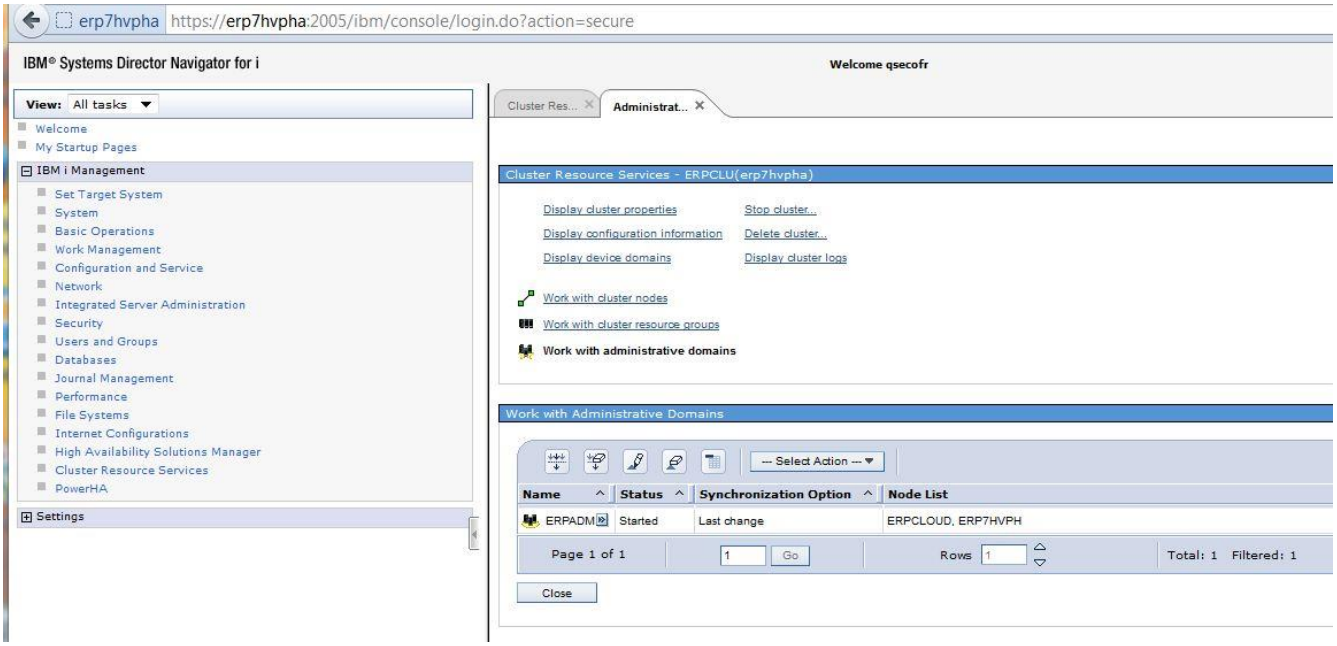
Because the user profiles for the application exist in the QSYS library, they must be duplicated on both nodes of the clustered environment. There are three ways this can be done. The first is to

directly create the user profiles on the second node. The second is to save and restore security data with the SAVSECDTA, RSTUSRPRF, and RSTAUT commands. The third method, illustrated here, is to use a cluster administrative domain to synchronize the user profiles across cluster nodes by adding the user profiles as monitored resource entries as was done for the job descriptions. This example shows adding the user profiles using the IBM i Navigator interface.

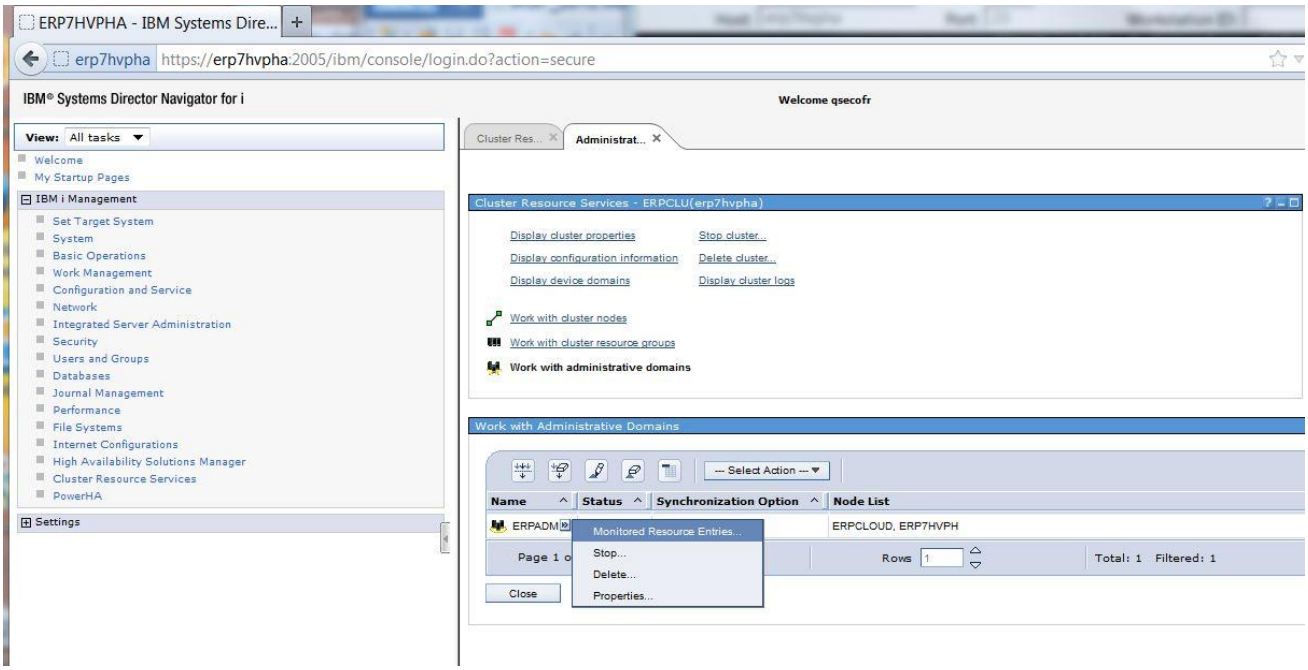
1. Select 'Cluster Resource Services' from the task bar on the left of the Navigator console.



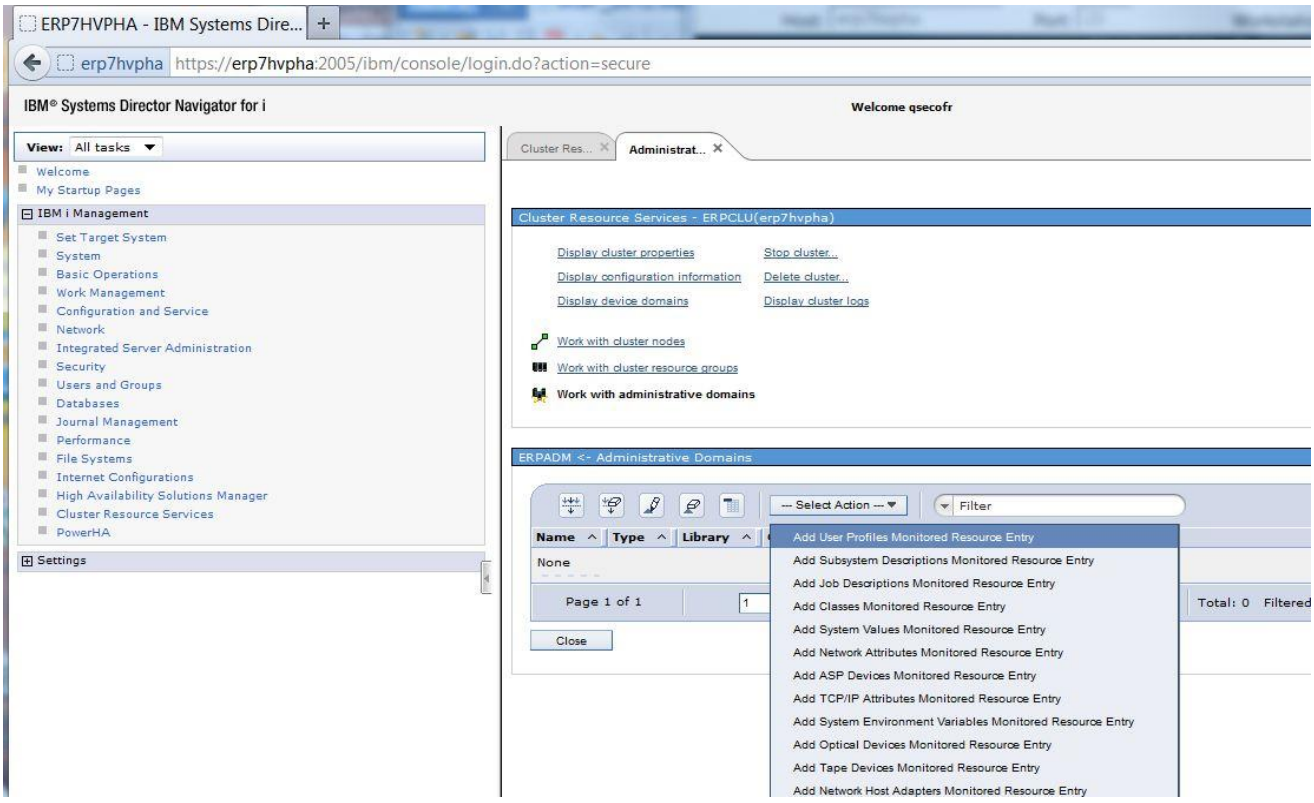
2. Select 'Work with administrative domains' from the Cluster Resource Services window.



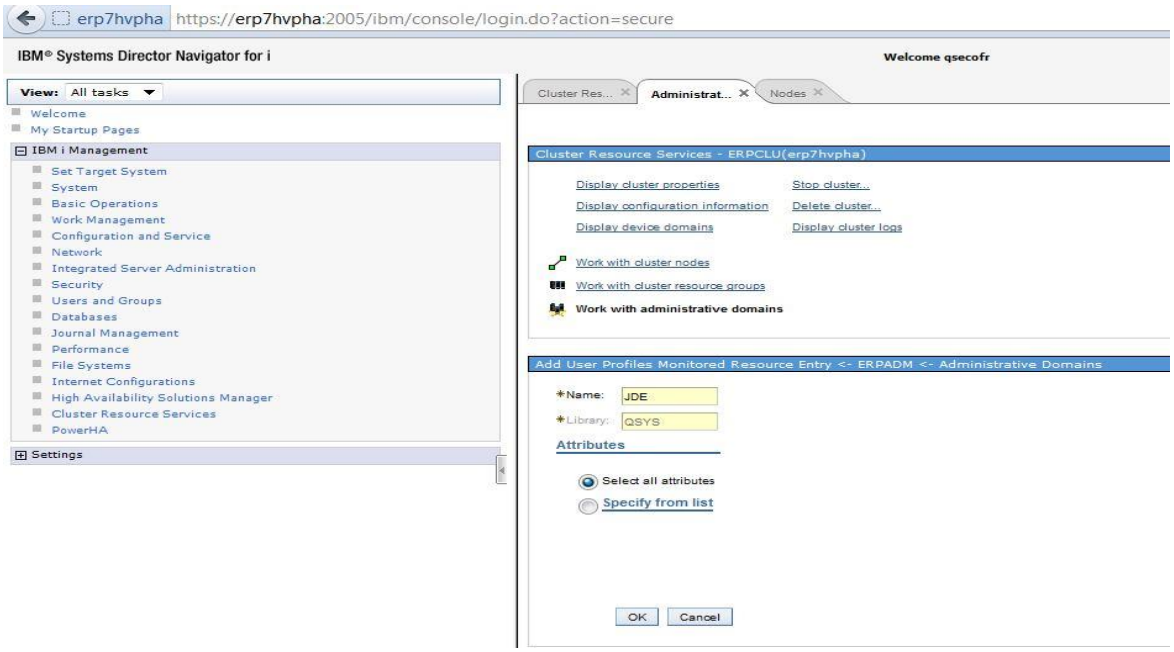
3. Select 'Monitored Resource Entries' from the pulldown for the administrative domain (ERPADM).



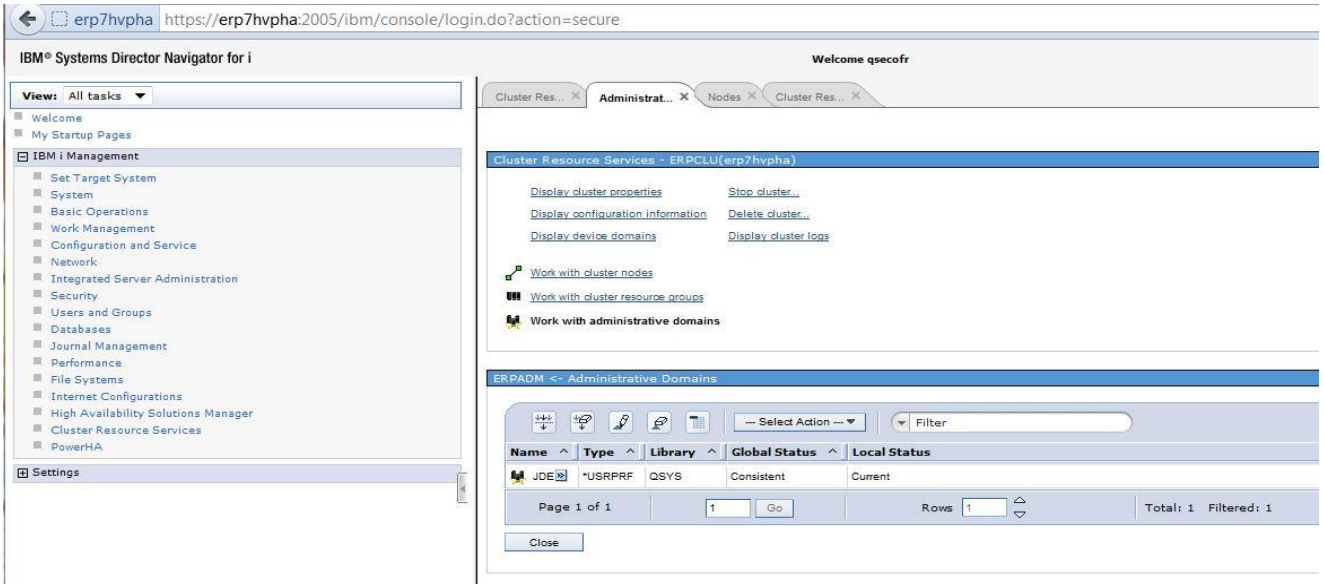
4. From the Monitored Resource Entries actions, choose 'Add User Profiles Monitored Resource'.



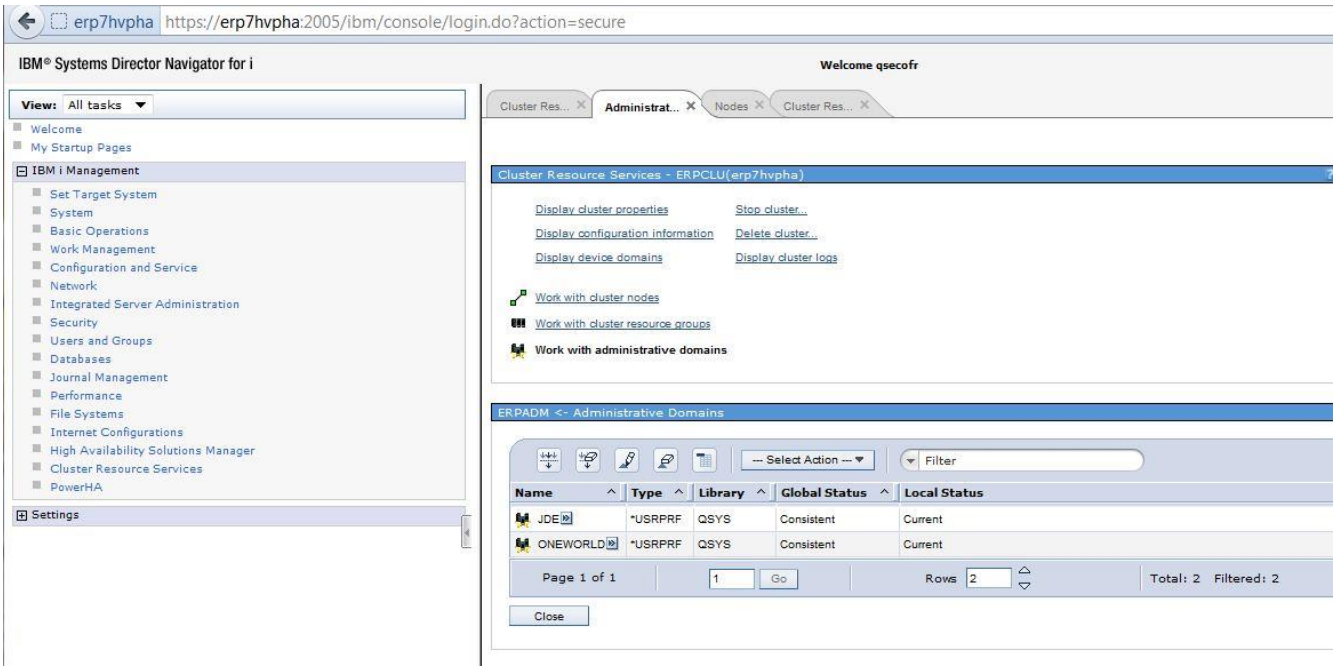
5. In the entry box for the name, specify the profile name and then select the OK button.



6. The results panel should show the profile with a global status of Consistent and Local Status of current.



7. Repeat for all desired profiles.



Copy the E9xxSYS library

Use Save/Restore to save the contents of the library E9xxSYS on the Primary node and to restore them on the Secondary node. This can be done by using physical media or a combination of ftp and a save file. Note that this action must be repeated any time updates are made to JD Edwards EnterpriseOne including the installation of fixes or upgrades.

Update the JD Edwards EnterpriseOne database files

The JD Edwards EnterpriseOne application makes use of metadata files which contain configuration information about where objects are located. These files must be updated to change reflect that the name of the Enterprise server has changed. Appendix 1 contains SQL scripts developed in collaboration with Oracle to make these changes.

Update the configuration files

Several parameters in the jde.ini file contain server names which must be updated to reflect that the Enterprise server has effectively been renamed. Also, a new parameter has been added to enable IASP functionality in JD Edwards EnterpriseOne. There are also changes to the jas.ini and jdbj.ini file. Path names in the files do not need to be changed, they will be resolved by the symbolic links .

JDE.INI

There are several changes in the DB system settings section. The base datasource and database entries need to be changed to a text string that matches the OCM table entry. The server name needs to be changed to the takeover IP name. The Library List entry needs to be changed to the RDB Entry name, which is required to be the same as the takeover IP name. The enableIASP entry must be added and set to 1 (bottom of section).

```
[DB SYSTEM SETTINGS]
Version=43
Default User=JDE
Default Pwd=JDE
Default Role=*ALL
Default Env=PD920
Default PathCode=PD920
Base Datasource=ERPIASP - 920 Server Map
Object Owner=
Server=ERPMETRO
Database=ERPIASP - 920 Server Map
Load Library=
Decimal Shift=Y
Julian Dates=Y
Use Owner=N
Secured=Y
Type=I
Library=
Library List=ERPMETRO
DatabaseName2=SVM920
DatabaseInstance=
ServerPort=
JDBNETUse=N
UnicodeFlag=Y
LOBFlag=Y
DatabaseProgramMax=-1
DatabaseProgramInitial=10
DatabaseProgramThreshold=3
DatabaseProgramAdditional=10
DatabaseProgramCheckIntervalSeconds=10
Default Journal=OW_JRNL
Default Journal LIBRARY=OWJRNL
Default Journal Receiver=OW_JRNL000
Default Journal Receiver LIBRARY=OWJRNL
SQL Package Library=1
QueryExecutionTimeThreshold=0
enableIASP=1
```

The Security section needs to have the SecurityServer entry changed to the takeover IP name.

```
[SECURITY]
DataSource=System - 920
User=JDE
Password=JDE
Default Role=*ALL
DefaultEnvironment=PD920
SecurityServer=ERPMETRO
ServerPswdFile=TRUE
History=0
NumServers=1
SecurityServer1=NONE
SecurityServer2=NONE
SecurityServer3=NONE
SecurityServer4=NONE
LDAPAuthentication=false
SecurityMode=0
```

The cluster section needs to have the primary node name set to the takeover ip name.

```
[CLUSTER]
PrimaryNode=ERPMETRO
```

JDBJ.INI

Change the bootstrap data source server to the name of the takeover IP:

```
[JDBj-BOOTSTRAP DATA SOURCE]
databaseType=I
serverPort=0
name=System - 920
database=
server=ERPMETRO
physicalDatabase=SY920
owner=
lob=true
unicode=true
```

JAS.INI

Change the security server name to the name of the takeover IP:

```
[SECURITY]
NumServers=1
SecurityServer=ERPMETRO
SecurityServer1=NONE
SecurityServer2=NONE
SecurityServer3=NONE
SecurityServer4=NONE
UseLogonCookie=FALSE
CookieLifeTime=7
SSOEnabled=false
OracleAccessSSO=false
OracleSSO=false
StrictVersionSecurity=0
OracleAccessSSOSignOffURL=
OracleSignOffURL=
```

Update any ODBC based clients

Any datasource which was configured to access the old server name must be updated to reference the name associated with the takeover IP address.

Update the web servers

The configuration of any web servers needs to be updated to reflect the name associated with the takeover IP address rather than the name of the Primary node. This was described above.

Update the deployment server

The deployment server must also be updated to reference the name associated with the takeover IP address. This is again implemented using the SQL scripts in Appendix 1 developed in collaboration with Oracle.

Preparing the backup system

The following section describes the configuration changes needed on the secondary system(s) after the migration of libraries and directories into the independent ASP.

Configuring user profiles and job descriptions

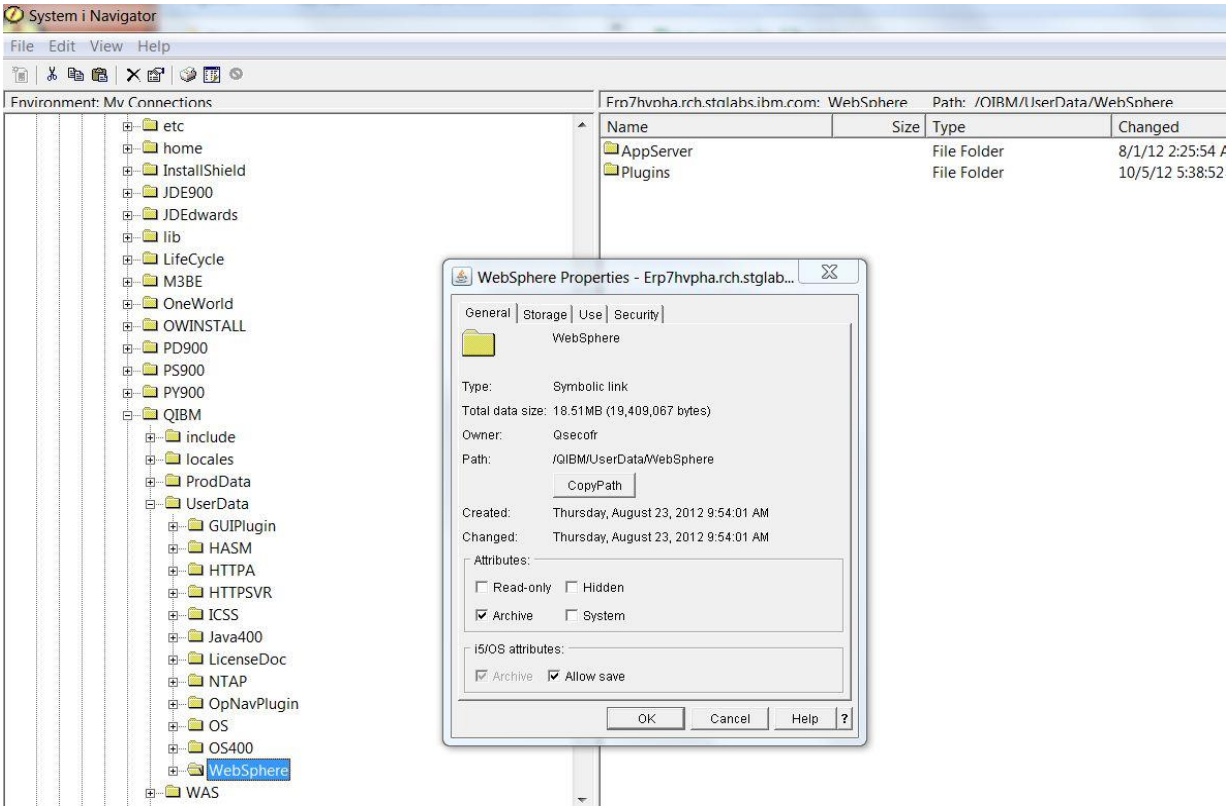
If the user profiles and job descriptions were added to the cluster administrative domain, they have been migrated to the backup system by PowerHA. If the user profiles and job descriptions were saved to save files, they need to be restored on the backup system.

Copy the E9xxSYS library

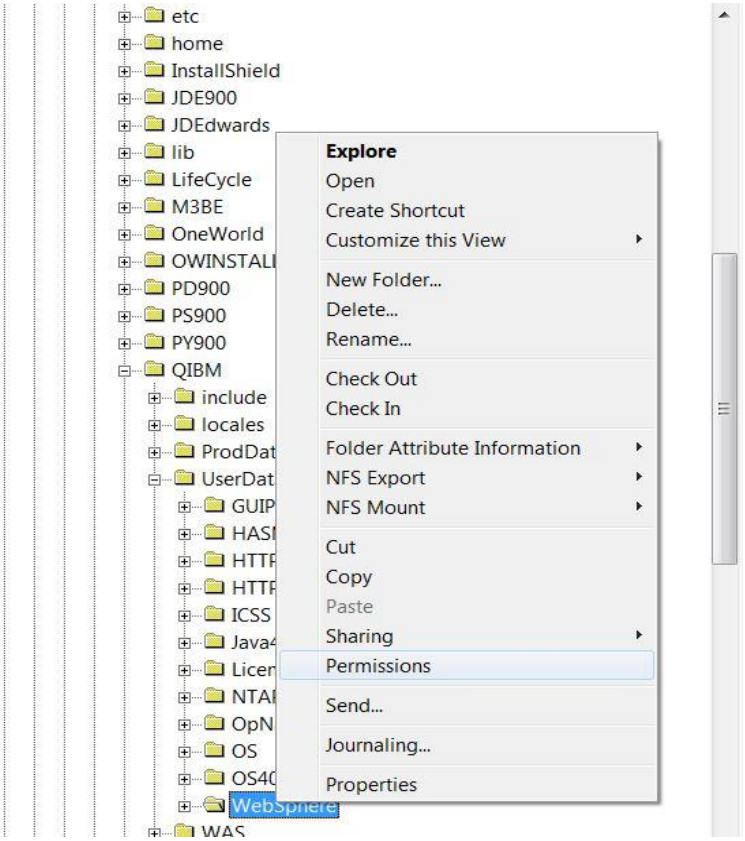
The E9xxSYS library must be copied to the backup system. This was previously described.

Create symbolic links

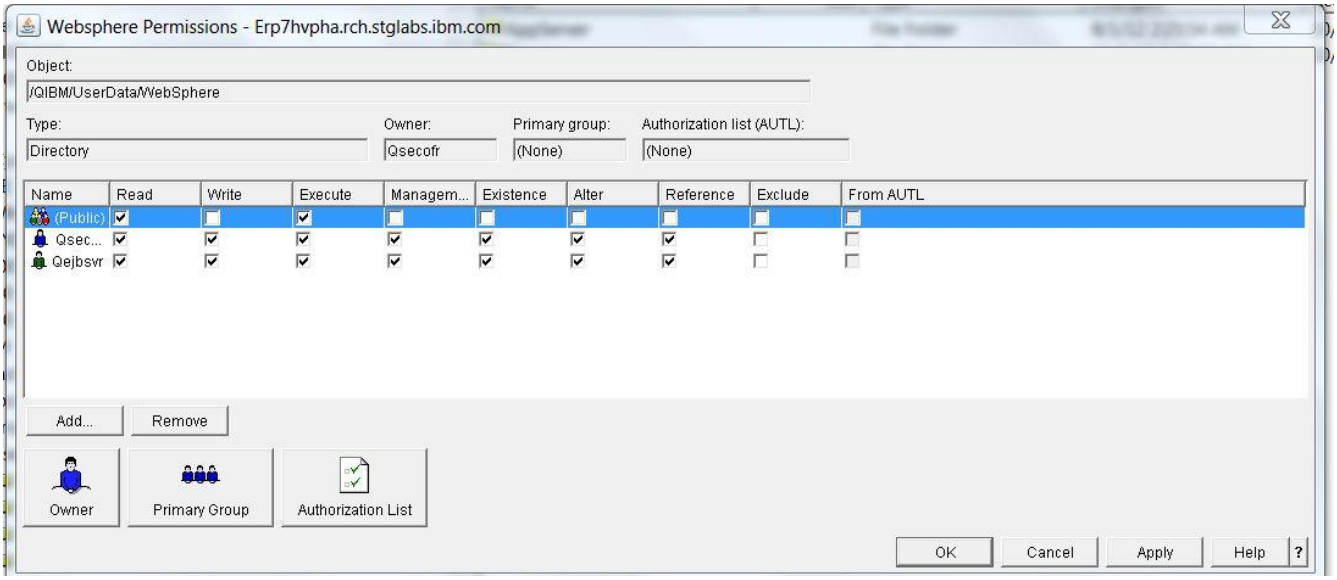
Symbolic links have to be created on the target system for the directories migrated to the IASP. This process is the same as described for the primary system. After creating the symbolic link for /QIBM/UserData/Websphere, make sure QEJBSRV has all authorities to the link. iNavigator can be used for verifying the authorities. Display the properties of /QIBM/UserData/WebSphere to confirm it is a symbolic link.



Right click on the WebSphere directory and select permissions from the pull-down.



Verify that the permissions for QEJBSRV match these:



Validation

In order to validate the successful migration of JD Edwards EnterpriseOne into an independent ASP, use the PORTTEST command. This process should be repeated after a switchover to ensure that it also works on both the primary and secondary nodes in the cluster.

Summary

This document has illustrated how to configure a PowerHA environment with JD Edwards EnterpriseOne software installed and switchable between two servers. The document illustrates optionally naming the IASP differently from the relational database and takeover IP names, although we recommend naming all three the same name. Also shown was installing a Websphere Application Server Express Edition environment on the IASP so it will switch with the JD Edwards EnterpriseOne application. This is optional, the Websphere Application Server can also be installed on each server partition as documented in previous whitepapers (Implementing PeopleSoft EnterpriseOne ERP 8.0 Using an Independent Auxiliary Storage Pool).

Resources

The following resources contain additional information which supplements the content of this paper.

- JD Edwards EnterpriseOne Tools Server and Workstation Administration Guide, Chapter 8 Administering JD Edwards EnterpriseOne on an IBM i Cluster: http://docs.oracle.com/cd/E24705_01/doc.91/e24259/e1_on_an_iseries_cluster.htm#g8d6ab57f7ceeaac_ef90c_10a77c8e3f7__60cc

- IBM developerWorks IBM i ERP Wiki: https://www.ibm.com/developerworks/mydeveloperworks/wikis/home?lang=en#/wiki/i%20ERP1/page/Welcome

- IASP Configuration for the JD Edwards EnterpriseOne Deployment Server. Document attached as PDF to My Oracle Support document ID 1207383.1

- Implementing PeopleSoft EnterpriseOne ERP 8.0 Using an Independent Auxiliary Storage Pool http://www-03.ibm.com/systems/resources/iasp_enterprise_one_8.0.pdf

- PowerHA SystemMirror for IBM i Cookbook http://www.redbooks.ibm.com/redbooks/pdfs/sg247994.pdf

- IBM System i Performance and Tuning Tips for Oracle's JD Edwards EnterpriseOne 9.0: http://www-03.ibm.com/support/techdocs/atsmastr.nsf/WebIndex/WP101504

- IBM i Virtualization and Open Storage (read-me first), August 2011: http://www-03.ibm.com/systems/resources/systems_i_Virtualization_Open_Storage.pdf

- IBM Storwize V7000: http://www-03.ibm.com/systems/storage/disk/storwize_v7000/index.html

Appendix 1: SQL for table updates

The following SQL will update the appropriate JD Edwards EnterpriseOne tables for a basic installation. Also, see My Oracle Support document ID 1367122.1 for downloadable scripts. The online versions are the most current versions. In these queries you need to substitute your own installation names.

Customized installations may not have their data source tables completely updated by the scripts. Query the data source tables after running the scripts for the name of the installation server. All data source references should point to the takeover IP name, and you may have to code SQL statements to perform these updates on rows not updated by the Oracle scripts. These statements may need to change the installation server name to the takeover IP name, or possibly change a blank server name field to the takeover IP name.

Errors due to naming problems in the data source tables typically surface as SQL0204 errors in the JDEDEBUG logs.

Query text	Description	Substitution based on document example
~gbl_dep_Server_Name~	The deployment server ip name	ERPBCS1B2
~gbl_machine_Name~	The takeover ip name	ERPMETRO
DENI508C	The ip name of the server installed	ERP7HVPHA
~gbl_iasp_Name~	The name of the iASP	ERPIASP
~gbl_eone_Location~	The location field from the install	IBM_Rochester

```
UPDATE SY920/F00942 SET emmkey='~gbl_dep_Server_Name~' WHERE emmkey = 'ORCLVMDEP';
UPDATE SY920/F00945 SET rmmkey='~gbl_dep_Server_Name~' WHERE rmmkey = 'ORCLVMDEP';

UPDATE SY920/F96021 SET BHDATP='~gbl_machine_Name~' WHERE BHDATP ='DENI508C';
UPDATE SY920/F96021 SET BHJOBN='~gbl_dep_Server_Name~' WHERE BHJOBN ='ORCLVMDEP';
UPDATE SY920/F96215 SET HHDATP='~gbl_machine_Name~' WHERE HHDATP ='DENI508C';


UPDATE SY920/F9622 SET bdjobn ='~gbl_dep_Server_Name~' WHERE bdjobn  ='ORCLVMDEP';
UPDATE SY920/F9622 SET bddatp ='~gbl_machine_Name~' WHERE bddatp  ='DENI508C';
UPDATE SY920/F96225 SET hdjobn ='~gbl_dep_Server_Name~' WHERE hdjobn  ='ORCLVMDEP';
UPDATE SY920/F96225 SET hddatp ='~gbl_machine_Name~' WHERE hddatp  ='DENI508C';
```

```
UPDATE SY920/F9650 SET mmmkey='~gbl_dep_Server_Name~' WHERE mmmkey = 'JDENTAIXS';

UPDATE SY920/F9650 SET mmmkey='~gbl_machine_Name~', MMHSTTYP = '10', MMMCHUSER =
'JDE'

WHERE mmmkey = 'DENI508C';


UPDATE SY920/F9650 SET mmmkey='~gbl_machine_Name~' WHERE mmmkey = 'DENI508C';

UPDATE SY920/F9650 SET mmdstp='I' WHERE mmdstp='O';


UPDATE SY920/F9650 SET mmmkey='~gbl_machine_Name~' WHERE mmmkey = 'DENI508C';

UPDATE SY920/F9650 SET mmlgname='~gbl_machine_Name~' WHERE mmlgname = 'DENI508C';

UPDATE SY920/F9650 SET mmdatp='~gbl_machine_Name~ - 920 Server Map' WHERE mmdatp

LIKE '%Server Map%';

UPDATE SY920/F9650 SET mmdepsrvnm='~gbl_dep_Server_Name~' WHERE  mmdepsrvnm =
'JDENTAIXS';

UPDATE SY920/F9650 SET mmlocat='~gbl_eone_Location~'  ;


UPDATE SY920/F9651 SET mdmkey='~gbl_machine_Name~' WHERE  mdmkey = 'DENI508C';

UPDATE SY920/F9651 SET mdmkey='~gbl_dep_Server_Name~' WHERE mdmkey = 'JDENTAIXS';

UPDATE SY920/F9651  SET MDSERSHP = 'E920SYS' WHERE MDMCHDETTYP = '10';

UPDATE SY920/F9651  SET MDSERSHP = '//~gbl_iasp_Name~/jde/E1Menu.maf'

WHERE MDMCHDETTYP = '44';

UPDATE SY920/F9654 SET dllocat='~gbl_eone_Location~', dldl01='~gbl_eone_Location~'

WHERE dllocat = 'Denver';


UPDATE SY920/F96511 SET skmkey='~gbl_machine_Name~' WHERE  skmkey = 'DENI508C';


UPDATE SY920/F986130 SET QCEXEHOST='~gbl_machine_Name~';


UPDATE SY920/F986167 SET DPEXEHOST='~gbl_machine_Name~' WHERE DPEXEHOST =
'DENI508C';


UPDATE SVM920/F98611 SET OMDATB2 = OMOOWN WHERE OMDSTP = 'O'
```

```
AND OMDATUSE NOT IN ('V','C');

UPDATE SVM920/F98611 SET OMDATB2 = (CONCAT ('CO', OMOOWN))

WHERE OMDATUSE IN ('V','C') AND OMDSTP = 'O';

UPDATE SVM920/F98611 SET OMDATB = OMDATP WHERE OMDSTP = 'O'

AND OMDATUSE <> 'G';

UPDATE SVM920/F98611 SET OMOOWN = ' ', OMOMTO = 'N', OMDSTP = 'I',

OMOCMDSC = 'AS400', OMSVRPORT = ' ' WHERE OMDSTP = 'O';

UPDATE SVM920/F98611 SET OMSRVR = '~gbl_machine_Name~' WHERE OMDSTP = 'I';

UPDATE SVM920/F98611 SET OMSRVR = '~gbl_machine_Name~', OMOCMDSC = 'AS400'

WHERE OMDATUSE = 'G' AND OMSRVR <> 'LOCAL';

UPDATE SVM920/F98611 SET omdatb='~gbl_machine_Name~ - 920 Server Map' WHERE OMDATUSE
= 'G'

AND OMSRVR <> 'LOCAL';

UPDATE SVM920/F98611 SET omdatp='~gbl_machine_Name~ - 920 Server Map',

omdatb='~gbl_machine_Name~ - 920 Server Map'

WHERE omdatp LIKE '%Server Map%';

UPDATE SVM920/F98611 SET omdatp='~gbl_machine_Name~ - Logic' WHERE omdatp LIKE
'%Logic%';

UPDATE SVM920/F98611 SET omdatp='~gbl_machine_Name~ - RTE' WHERE omdatp LIKE '%RTE%';

UPDATE SVM920/F98611 SET omdatp='~gbl_machine_Name~ - XAPI' WHERE omdatp LIKE
'%XAPI%';

UPDATE SVM920/F98611 SET omdatp='~gbl_machine_Name~' WHERE  omdatp = 'DENI508C';

UPDATE SVM920/F986111 SET JCEXEHOST = '~gbl_machine_Name~';


UPDATE SY920/F98611 SET OMDATB2 = OMOOWN WHERE OMDSTP = 'O'

AND OMDATUSE NOT IN ('V','C');

UPDATE SY920/F98611 SET OMDATB2 = (CONCAT ('CO', OMOOWN))

WHERE OMDATUSE IN ('V','C') AND OMDSTP = 'O';

UPDATE SY920/F98611 SET OMDATB = OMDATP WHERE OMDSTP = 'O'

AND OMDATUSE <> 'G';

UPDATE SY920/F98611 SET OMOOWN = ' ', OMOMTO = 'N', OMDSTP = 'I',

OMOCMDSC = 'AS400', OMSVRPORT = ' ', OMSRVR = '~gbl_machine_Name~' WHERE OMDSTP =
'O';
```

```
UPDATE SY920/F98611 SET OMSRVR = '~gbl_machine_Name~' WHERE OMDSTP = 'I';
UPDATE SY920/F98611 SET OMSRVR = '~gbl_machine_Name~', OMOCMDSC = 'AS400'
WHERE OMDATUSE = 'G' AND OMSRVR <> 'LOCAL';
UPDATE SY920/F98611 SET omdatb='~gbl_machine_Name~ - 920 Server Map' WHERE OMDATUSE =
'G'
AND OMSRVR <> 'LOCAL';

UPDATE SY920/F98611 SET omdatp='~gbl_machine_Name~ - 920 Server Map',
omdatb='~gbl_machine_Name~ - 920 Server Map'
WHERE omdatp LIKE '%Server Map%';
UPDATE SY920/F98611 SET omdatp='~gbl_machine_Name~ - Logic' WHERE omdatp LIKE '%Logic%';
UPDATE SY920/F98611 SET omdatp='~gbl_machine_Name~ - RTE' WHERE omdatp LIKE '%RTE%';
UPDATE SY920/F98611 SET omdatp='~gbl_machine_Name~ - XAPI' WHERE omdatp LIKE '%XAPI%';
UPDATE SY920/F98611 SET omdatp='~gbl_machine_Name~' WHERE  omdatp = 'DENI508C';

UPDATE SY920/F986115 SET tddatp='~gbl_machine_Name~ - 920 Server Map'
WHERE tddatp LIKE '%Server Map%';
UPDATE SY920/F986115 SET TDTSPCNAME = ' ', TDISPCNAME = ' '
WHERE TDTSPCNAME <> 't' AND TDISPCNAME NOT IN ('NA','i',' ');

UPDATE SVM920/F986101 SET omdatp='~gbl_machine_Name~'  WHERE omdatp = 'DENI508C';
UPDATE SY920/F986101 SET omdatp='~gbl_machine_Name~ - Logic' WHERE omdatp LIKE
'%Logic%';
UPDATE SY920/F986101 SET omdatp='~gbl_machine_Name~ - RTE' WHERE omdatp LIKE '%RTE%';
UPDATE SY920/F986101 SET omdatp='~gbl_machine_Name~ - XAPI' WHERE omdatp LIKE '%XAPI%';
UPDATE SY920/F986101 SET omdatp='~gbl_machine_Name~' WHERE omdatp = 'DENI508C';

UPDATE SY920/F98826 SET upmkey='~gbl_machine_Name~' WHERE upmkey = 'DENI508C';
UPDATE SY920/F98826 SET upjobn='~gbl_dep_Server_Name~' WHERE upjobn = 'JDENTAIXS';
UPDATE SY920/F9883 SET fnmkey='~gbl_machine_Name~' WHERE fnmkey = 'DENI508C';
```

```
UPDATE OL920/F9861 SET simkey='~gbl_dep_Server_Name~' WHERE  simkey = 'ORCLVMDEP';


UPDATE SY920/F98MOQUE SET OMQUPATH = '\\~gbl_dep_Server_Name~\E920\PrintQueue'
WHERE

OMQUPATH LIKE '%PrintQueue%';

UPDATE SY920/F98MOQUE SET OMQUPATH =
'\\~gbl_dep_Server_Name~\E920\MEDIAOBJ\COMPOSER\HTML'

WHERE OMQUPATH LIKE '%COMPOSER\HTML%';

UPDATE SY920/F98MOQUE SET OMQUPATH =
'\\~gbl_dep_Server_Name~\E920\MEDIAOBJ\COMPOSERCBT'

WHERE OMQUPATH LIKE '%COMPOSERCBT%';

UPDATE SY920/F98MOQUE SET OMQUPATH =
'\\~gbl_dep_Server_Name~\E920\MEDIAOBJ\SELFSERVICE'

WHERE OMQUPATH LIKE '%SELFSERVICE%';

UPDATE SY920/F98MOQUE SET OMQUPATH =
'\\~gbl_dep_Server_Name~\E920\MEDIAOBJ\DISTRIBUTION'

WHERE OMQUPATH LIKE '%DISTRIBUTION%';

UPDATE SY920/F98MOQUE

SET OMQUPATH = '\\~gbl_dep_Server_Name~\E920\MEDIAOBJ\FINANCIALS\ExpRptMsg.htm'

WHERE OMQUPATH LIKE '%ExpRptMsg.htm%';

UPDATE SY920/F98MOQUE SET OMQUPATH =
'\\~gbl_dep_Server_Name~\E920\MEDIAOBJ\HTMLUpload'

WHERE OMQUPATH LIKE '%HTMLUpload%';

UPDATE SY920/F98MOQUE

SET OMQUPATH = 'http://~gbl_dep_Server_Name~:8080/PSOL/htmldoc/f1search.htm'

WHERE OMQUNAM LIKE 'Help%';

UPDATE SY920/F98MOQUE SET OMQUTYP = '09' WHERE OMQUNAM LIKE 'Help%';

UPDATE SY920/F98MOQUE

SET OMQUPATH = '\\~gbl_dep_Server_Name~\E920\MEDIAOBJ\HUMAN RESOURCES'

WHERE OMQUPATH LIKE '%HUMAN RESOURCES%';

UPDATE SY920/F98MOQUE SET OMQUPATH =
'\\~gbl_dep_Server_Name~\E920\MEDIAOBJ\OLEQUE'

WHERE OMQUPATH LIKE '%OLEQUE%';
```

```
UPDATE SY920/F98MOQUE SET OMQUPATH =
'\\~gbl_dep_Server_Name~\E920\MEDIAOBJ\MANUFACTURING'

WHERE OMQUPATH LIKE '%MANUFACTURING%';

UPDATE SY920/F98MOQUE SET OMQUPATH = '\\~gbl_dep_Server_Name~\E920\MEDIAOBJ\MISC
IMAGES'

WHERE OMQUPATH LIKE '%MISC IMAGES%';

UPDATE SY920/F98MOQUE

SET OMQUPATH = '\\~gbl_dep_Server_Name~\E920\MEDIAOBJ\MISC ANIMATIONS'

WHERE OMQUPATH LIKE '%MISC ANIMATIONS%';

UPDATE SY920/F98MOQUE

SET OMQUPATH = '\\~gbl_dep_Server_Name~\E920\MEDIAOBJ\MISC' WHERE OMQUNAM LIKE

'%Miscellaneous%';

UPDATE SY920/F98MOQUE SET OMQUPATH = '\\~gbl_dep_Server_Name~\E920\MEDIAOBJ\OMW'

WHERE OMQUPATH LIKE '%OMW %';

UPDATE SY920/F98MOQUE SET OMQUPATH = '\\~gbl_dep_Server_Name~\E920\MEDIAOBJ\TEXT'

WHERE OMQUPATH LIKE '%TEXT%';

UPDATE SY920/F98MOQUE SET OMQUPATH =
'\\~gbl_dep_Server_Name~\E920\solutionexplorer\data'

WHERE OMQUPATH LIKE '%solutionexplorer\data%';

UPDATE COPS920/F983051 SET vrmkey='~gbl_dep_Server_Name~' WHERE vrmkey =
'ORCLVMDEP';

UPDATE COPY920/F983051 SET vrmkey='~gbl_dep_Server_Name~' WHERE vrmkey =
'ORCLVMDEP';

UPDATE COPD920/F983051 SET vrmkey='~gbl_dep_Server_Name~' WHERE vrmkey =
'ORCLVMDEP';

UPDATE CODV920/F983051 SET vrmkey='~gbl_dep_Server_Name~' WHERE vrmkey =
'ORCLVMDEP';
```

Appendix 2: Considerations for earlier releases

For early releases, it may be more useful to use an earlier document written at the time those releases were current:

- Implementing PeopleSoft EnterpriseOne ERP 8.0 Using an Independent Auxiliary Storage Pool: http://www-03.ibm.com/systems/resources/iasp_enterprise_one_8.0.pdf

Several specific issues have been found as outlined below.

JD Edwards EnterpriseOne XE:

The printqueue is not in the IFS, it is in the B7334SYS library and therefore not migrating. This location is hardcoded at the XE tools level, and the printqueue does not move to an IFS folder until Tools 8.9 and higher. Use a DDM file to map the printqueue file to a file on the IASP that does switch.

```
CRTLIB LIB(PRINTQLIB) ASP(*ASPDEV) ASPDEV(ERPIASP)
CRTDUPOBJ OBJ(PRINTQUEUE) FROMLIB(B7334SYS) OBJTYPE(*FILE) +
  TOLIB(PRINTQLIB) DATA(*YES)
DLTF FILE(B7334SYS/PRINTQUEUE)
CRTDDMF FILE(B7334SYS/PRINTQUEUE) RMTFILE(PRINTQLIB/PRINTQUEUE) +
  RMTLOCNAME(ERPIASP *IP)
```

SQL server mode must be disabled for JD Edwards EnterpriseOne when running with an independent ASP. Do this in the JDE.INI file:

[DB System Settings]

SQLServerMode=OFF

JD Edwards EnterpriseOne 8.0

SQL server mode should not be used with an independent ASP configuration.

JD Edwards EnterpriseOne 8.10-8.11

SQL server mode should not be used with an independent ASP configuration.

JD Edwards EnterpriseOne 8.12

SQL Server Mode should not be disabled, it is required by the Metadata Kernel and Vertex. The default has server mode enabled and is compatible with independent ASP configurations.

Appendix 3: WebSphere Install response files

Response files used in the example to install WebSphere 7 to the independent ASP are shown below.

Primary Partition

```
################################################################################
#
# WebSphere Application Server V7.0 installation options file
#
# This options file runs the installation wizard in silent mode. This lets the
# options file author specify installation settings without having to run the
# wizard in graphical mode. To use this options file for silent mode execution,
# use the following command line arguments when running the wizard:
#
#    -options "/<responsefile.path>/responsefile.express.txt"
#
# Read the documentation for information on changing the value for each option.
# Enclose all values within a single pair of double quotes.
################################################################################

################################################################################
#
Installation options and values
################################################################################
#
# Invoke the install wizard in silent mode for both local and remote install
# whenever the response file is used.
#

-silent

################################################################################
#
# License Acceptance
#
# By changing the silentInstallLicenseAcceptance property in this response file
# to "true", you agree that you have reviewed and agree to the terms of the
# IBM International Program License Agreement accompanying this program, which
# is located at CD_ROOT\was.primary.pak\repository\legal\lafiles. If you
# do not agree to these terms, do not change the value or otherwise download,
# install, copy, access, or use the program and promptly return the program
```

```
# and proof of entitlement to the party from whom you acquired it to obtain
# a refund of the amount you paid.
#
# Valid values for silentInstallLicenseAcceptance:
#     true - Accepts the license and product installation will occur.
#     false - Declines the license and product installation will not occur.
#
  -OPT silentInstallLicenseAcceptance="true"
#
# If no install occurs, a log file is created in the temporary directory area
# of the user account that performed the installation (<user_area>\waslogs\).
#
###############################################################################
#
# Prerequisite Checking
#
# The installer checks the system for prerequisites by default.
#
# Uncomment the following option to notify the installer to continue with
# the installation and log the warnings even though prerequisite checking
# of the operating system failed.
#
# -OPT disableOSPrereqChecking="true"
#
# Uncomment the following option to notify the installer to continue with
# the installation and log the warnings even though prerequisite checking
# failed.
#
# -OPT disableNonBlockingPrereqChecking="true"
#
###############################################################################
#
# Select JDK
#
#  Valid values for i5osjdklocation:
#
#   -OPT i5osjdklocation="/QOpenSys/QIBM/ProdData/JavaVM/jdk60/32bit"
#    This value will select IBM Technology for JDK 6 - 32 bit,
#    5722JV1/5761JV1 Option 11
#
#   -OPT i5osjdklocation="/QOpenSys/QIBM/ProdData/JavaVM/jdk60/64bit"
```

```
#    This value will select IBM Technology for JDK 6 - 64 bit
#    5722JV1/5761JV1 Option 12
#
#   -OPT i5osjdklocation="/QIBM/ProdData/Java400/jdk6"
#    This value will select IBM Developer Kit for Java 1.6
#    5722JV1/5761JV1 Option 10
#
# If no JDK is specified, IBM Technology for JDK 6 - 32 bit will be
# selected by default, if it is installed.  If IBM Technology for JDK 6 -
# 32 bit is not installed, IBM Technology for JDK 6 - 64 bit will be
# selected. If IBM Technology for JDK 6 - 32 bit and IBM Technology for
# JDK 6 - 32 bit are not installed, IBM Developer Kit for Java 1.6 will
# be selected. If no valid JDKs are installed, the install will fail.
#
# Uncomment one of the following options to select the JDK to use to
# configure the product.
#
# -OPT i5osjdklocation="/QOpenSys/QIBM/ProdData/JavaVM/jdk60/32bit"
# -OPT i5osjdklocation="/QOpenSys/QIBM/ProdData/JavaVM/jdk60/64bit"
# -OPT i5osjdklocation="/QIBM/ProdData/Java400/jdk6"
#
################################################################################
#
# Installation Type
#
# Valid values for installType:
#     installNew - install a new copy.
#     addFeature - add features to an existing installation.
#
upgrade - upgrade a trial edition to a licensed version, or
#
upgrade Express edition to Base edition.
#
# Valid values for features:
#     noFeature - do not install any additional features
#     samplesSelected - install the Application Server Samples code.
#     languagepack.console.all - install the non-English language files for the
#
administrative console application.
#     languagepack.server.all - install the non-English language files for the
```

```
#
server runtime environments such as wsadmin and logging.
#
# The default installType setting is to install a new copy of WebSphere
# Application Server Express without the Application Server Samples.
#
# All new installations require that the profileType option has a valid value
# because at least one profile is required to become functional. Additional
# profiles can be created after installation using manageProfiles command or
# the graphical Profile management tool.
#
# Depending on the profileType selected, additional options must be specified
# to setup and configure the environment. Read the Profile creation options
# and values section below for additional information.
#
# Valid values for profileType:
#     management - The management profile provides the servers and services
#
necessary to manage your WebSphere environments.  For a base
#
application server topology an administrative agent is provided.
#     standAlone - a profile is created with a stand alone application server.
#     none - a profile is not created during installation.
#
  -OPT installType="installNew"
  -OPT profileType="standAlone"
#
# Uncomment the following line and comment out the options below to not
# install any optional features.
#
# -OPT feature="noFeature"
#
# To install all the optional features into an existing installation of
# WebSphere Application Server, comment out the options above and uncomment
# the following options. Also, be sure the installLocation option is set to
# an existing installation.
#
# -OPT installType="addFeature"
# -OPT feature="samplesSelected"
  -OPT feature="languagepack.console.all"
  -OPT feature="languagepack.server.all"
```

```
#
###############################################################################
#
# Administrative Security
#
# Valid profile types: management and stand alone
#
# Valid values for PROF_enableAdminSecurity:
#     true - Administrative security is enabled during installation.
#     false - Administrative security is not enabled during installation.
#
# Enabling administrative security during installation is recommended.
# To configure administrative security, an administrative user name and
# password must be specified. Additionally, if the Application Server
# Samples are installed, a password also is required for the Samples user.
#
# Valid values for adminUserName: a character string
# Valid values for adminPassword: a character string
# Valid values for samplesPassword: a character string
#
# Notes:
# Do not use the following special characters for user names:
#    / \ * , : ; = + ? | < > & % ' " [ ] > # $ ^ { }
# A space ( ) is not valid in user names or passwords.
# A period (.) is not valid if it is the first character in user names.
# A dash (-) is not valid if it is the first character in user names.
# A dash (-) is not valid if it is the first character in passwords.
# Special characters can be used in passwords
#
  -OPT PROF_enableAdminSecurity="false"
  -OPT PROF_adminUserName=
  -OPT PROF_adminPassword=
# -OPT PROF_samplesPassword=
#
###############################################################################
#
# Installation Location
#
# Specify a valid directory path into which the product can be installed.
#
# i5OS Default Install Location:
```

```
 -OPT installLocation="/QIBM/ProdData/WebSphere/AppServer/V7/Express"
##############################################################################
#
# Profile Location
#
# The desired install location of profiles.  For new installs, specify a valid
# directory into which the profiles should be installed.  This directory must be
# either empty or not exist.
#
# Below is the default profile install location for the i5 operating system.
#
# i5OS Default Profile Install Location:
#
#
 -OPT
defaultProfileLocation="/ERPIASP/QIBM/UserData/WebSphere/AppServer/V7/Express"
#
##############################################################################
#
# Allow Profile Location Override
#
# This option allows users to overrule the empty default profile location
requirement.
#
# Valid Values:
#                                                                        true
- Allow profile location override
#
                                                                        fals
e - Do not allow profile location override
#
# If desired, uncomment the following entry
#
# -OPT allowOverrideProfileLocation="true"
#
##############################################################################
#
# Trace Control Output
#
# Valid Values for traceFormat:
#     ALL - output files saved as separate plain text and XML files.
```

```
#     text - output file saved in plain text format only.
#     XML - output file saved in standard Java logging XML format only.
#
# Trace output is saved as both text and XML files by default, but it can be
# restricted to only one output format.
#
# The amount of trace information captured can be controlled. All informational
# messages, warnings, and severe warnings are output to a trace file by default.
#
# Valid values for traceLevel:
#     OFF - No trace file is produced.
#     SEVERE - Only severe errors are output to a trace file.
#     WARNING - Non-fatal exceptions and warnings are added to trace file.
#     INFO - Informational messages are added to the trace file.
#     CONFIG - Configuration related messages are added to the trace file.
#     FINE - Trace all public method calls.
#     FINER - Trace all non-public method calls except getters and setters.
#     FINEST - Trace all methods, entry and exit parameters, and return values.
#
# -OPT traceFormat=ALL
# -OPT traceLevel=INFO
#
################################################################################

################################################################################
####
#
Profile creation options and values
################################################################################
# In this section, the options and valid values for creating all of the
# profile types are described. Following this descriptive section, each
# profile type is listed with all of the options necessary to create it
# with its default values.
#
################################################################################
#
# Profile Settings
#
# Valid profile types: management and stand alone
#
# Valid values for PROF_profilePath: An empty directory path, such as
```

```
#
                                                                        <app
_server_root>/profiles/<profile_name>
#
# Specify a valid directory to contain the files for the run-time environment,
# such as, commands, configuration files, and log files.
# The user account that runs the installation must have proper permissions.
# The directory must be empty and have adequate disk space available.
# On Windows systems, the total path length cannot exceed 80 characters.
#
# Valid values for PROF_profileName: a unique character sting
#
# Do not use the following special characters for profile names:
#     / \ * , : ; = + ? | < > & % ' " [ ] > # $ ^ { }
# Note: a period (.) is not valid if it is the first character.
#
# Valid values for PROF_isDefault:
#     true - make this profile the default profile for the installation.
#     false - retain the current default profile for the installation.
#
# The first profile created for an installation is designated the default.
# Only one profile can be designated the default profile for an installation.
# Commands that are executed from the <app_server_root>/bin/ directory that
# do not specify a profile to run against are run against the default profile.
#
###############################################################################
#
# Management Server Type
#
# Valid profile type: management
#
# Valid values for PROF_serverType:
# The management profile only has one server type for the Base and Express
# versions of WebSphere.
#
# ADMIN_AGENT - An administrative agent provides management capability for
# base application server profiles. Administrative agents have the
# ability to manage multiple separate base profiles simultaneously.
# Administrative agents only manage profiles within the boundary
# of the single system.
#
```

```
###############################################################################
#
# Node, Host, Server and Cell Names
#
# Valid profile types: management and stand alone
#
# Valid values for PROF_hostName: a character string
# Valid values for PROF_nodeName: a character string
# Valid values for PROF_cellName: a character string
# Valid values for PROF_serverName: a character string
#
# Do not use the following special characters for node, host or cell names:
#     / \ * , : ; = + ? | < > & % ' " [ ] > # $ ^ { }
# Note: a period (.) is not valid if it is the first character.
#
# The node name is for administration and must be unique.
#
# The host name is the domain name system (DNS) name (short or long) or
# the IP address of this computer. If using IPv6, then specify the IP address.
#
# The server name is a logical name for the JVM process that runs in a node.
# You can specify your own server name using the PROF_serverName option.
# The default server name for an application server is server1.
# The default server name for an secure proxy server is proxy1.
#
# The cell name is a logical name for a group of nodes.
#
##############################
#
# Development Server Template
#
# Valid profile type: stand alone
#
# Valid values for PROF_isDeveloperServer:
#    true - create the application server with developer settings.
#
# The application server process created in the stand alone application server
# profile can be configured with settings that are optimized for development.
# The development template reduces startup time and allows the server to run
# on less powerful hardware. Do not use this option for production servers.
#
```

```
################################################################################
#
# Optional Application Deployment
#
# Valid profile types: management and stand alone
#
# Valid values for PROF_omitAction:
#     deployAdminConsole - do not deploy the administrative console
#     defaultAppDeployAndConfig - do not deploy the default application
#     samplesInstallAndConfig - do not deploy the sample applications
#
# The administrative console, default application, and Application Server
# Sample applications can be optionally deployed to supported profiles types.
# Use the omitAction option to prevent the specified applications from
# being deployed to the new profile.
#
# The administrative console is a Web-based console for managing application
# servers. Deploying the administrative console is strongly recommended.
#
# The default application contains the Snoop, Hello, and HitCount servlets.
# The default application is deployable to the application server.
#
# The sample applications are not recommended for deployment to production
# Application Server environments. Deploy the sample applications to exercise
# the application server and evaluate the latest technological advancements.
# The sample applications are deployable to the application server in the
# stand alone application server profile.
#
################################################################################
#
# Certificate Management
#
# Valid profile types: management and stand alone
#
# Use these options fo request a certificate from a Certificate Authority (CA)
# or import an existing certificate. Both options require that the
# PROF_keyStorePassword to be set.
#
# Valid values for PROF_keyStorePassword: a character string
#
# Requesting a certificate
```

```
# Valid values for PROF_personalCertDN: a character string
# Valid values for PROF_personalCertValidityPeriod: number of days (integer)
# Valid values for PROF_signingCertDN: a character string
# Valid values for PROF_signingCertValidityPeriod: number of days (integer)
#
# Importing a certificate
# Valid values for PROF_importPersonalCertKS:
#     path to the key store file (character string)
# Valid values for PROF_importPersonalCertKSType: a character string
# Valid values for PROF_importPersonalCertKSPassword: a character string
# Valid values for PROF_importPersonalCertKSAlias:
#     the unique alias of the certificate in the key store (character string)
# Valid values for PROF_importSigningCertKS:
#     path to the key store file (character string)
# Valid values for PROF_importSigningCertKSType: a character string
# Valid values for PROF_importSigningCertKSPassword: a character string
# Valid values for PROF_importSigningCertKSAlias:
#     the unique alias of the certificate in the key store (character string)
#
################################################################################
#
# Port Value Assignment and Validation
#
# Valid profile types: management and stand alone
#
# Valid values for PROF_defaultPorts:
#     true - use the default port values for WebSphere Application Server.
# Valid values for PROF_startingPort:
#     a positive integer port value, within the valid port range
# Valid values for PROF_nodeStartingPort:
#     a positive integer port value, within the valid port range
# Valid values for PROF_portsFile:
#     a fully qualified path to a valid ports property file
# Valid values for PROF_nodePortsFile:
#     a fully qualified path to a valid ports property file
#
# There are four ways to assign port values, choose only one option.
# Consult the Information Center for lists of the ports that each profile
# type uses and the default values assigned to each port.
#
# Use PROF_defaultPorts to assign the set of default port values assigned
```

```
# to the selected profile type.
#
# Alternatively, use PROF_startingPort to assign a block of ports to the
# profile. Port values will be assigned incrementally as required to assign
# a unique value to each port in the selected profile type.
#
# Otherwise, use PROF_portsFile to assign your own specific port values
# to each port that is needed for the selected profile type.
#
# The last way to assign port values is to not specify any of the three
# options. If none of the three options are specified, then initially the
# default port values will be assigned. However, if an assigned port value
# is in use by another installation of WebSphere Application Server or
# is actively in use by any other application on the system, then the
# port value will be incremented to a port value that is open and available.
#
# Note that installations of WebSphere Application Server prior to
# Version 6.1 might not be found reliably.
#
# Also, installation of WebSphere Application Server that are not
# registered with the operating system might not be found reliably.
#
# To have more than one installation of WebSphere Application Server
# running on the same machine, unique port values must be assigned
# to each installation. Otherwise, only one installation of WebSphere
# Application Server can run.
#
# Valid values for PROF_validatePorts:
#     true - validates that each port value is unique and is not in use.
#     false - no validation of port values
#
# The validatePorts option is set to false by default. The validatePorts
# option verifies whether the port values to be used are assigned to other
# profiles and whether the ports are actively in use by other applications.
# If a port conflict is detected, then validation fails and the profile
# will not be created.
#
###############################################################################
#
# Web Server Definition
#
```

```
# Valid profile types: stand alone
#
# Valid values for PROF_webServerCheck:
#     true - enable the creation of a Web server definition.
#     false - do not create a Web server definition.
#
# A Web server definition is not created by default.
# If a Web server is used to route requests for dynamic content from the
# application server, then you may want to create a Web server definition.
# Web server definitions also may be created from the administrative console
# or using a script that is generated during Web server plug-in installation.
#
# Valid values for PROF_webServerType (case sensitive):
#     IHS - IBM HTTP Server
#     DOMINO - Lotus Domino Web servers
# Valid values for PROF_webServerOS:
#     aix, hpux, linux, os390, os400, solaris, windows
# Valid values for PROF_webServerName: a character string
# Valid values for PROF_webServerHostName: DNS host name or IP Address
# Valid values for PROF_webServerPort: a HTTP port number
# Valid values for PROF_webServerPluginPath: directory path to plug-in
# Valid values for PROF_webServerInstallPath: directory path to Web server
#
# To create a Web server definition, specify the type of Web server and its
# operating system. The Web server name is used to identify the specified
# Web server in the administrative console. Also provide the DNS host name
# or IP address of the Web server, its primary communication port
# (default 80), and the complete directory path to the Web server plug-ins.
# Additionally, if the Web server is IHS, then provide the complete
# directory path to where it is installed.
#
# Do not use the following special characters for Web server names:
#     / \ * , : ; = + ? | < > & % ' " [ ] > # $ ^ { }
# Note: a period (.) is not valid if it is the first character.
#
###############################################################################
#
# OS/400 Passwords
#
# Valid profile types: stand alone
#
```

```
# If specified, the profile will be configured to store the encoded passwords in
# an i5/OS validation list object.
#
# Valid Values:
#     true - use i5/OS password encoding
#     false - do not use i5/OS password encoding (use the default XOR encoding)
#
###############################################################################
#
# OS/400 Password Validation List
#
# Valid profile types: stand alone
#
# Validation list to use if PROF_os400passwords is specified.
#
# Valid Values:
#     A fully qualified validation list object name.
#     Format is LIBRARY/OBJECTNAME, eg. MYLIB/MYVLDL
#
###############################################################################
#
# External HTTP port
#
# Valid profile types: stand alone
#
# The external HTTP port for your Web server instance.
#
# Valid Values: a positive integer port value, within the valid port range
#

###############################################################################


###############################################################################
# Uncomment the following to create a management profile.
###############################################################################
#
## Profile Settings
# -OPT PROF_profilePath=
# -OPT PROF_profileName=
# -OPT PROF_isDefault="true"
```

```
# -OPT PROF_serverType="ADMIN_AGENT"
## Node, Host and Cell Names
# -OPT PROF_hostName=
# -OPT PROF_nodeName=
# -OPT PROF_cellName=
## Optional Application Deployment
# -OPT PROF_omitAction=
## Certificate Management
# -OPT PROF_keyStorePassword=
## Requesting a certificate
# -OPT PROF_personalCertDN=
# -OPT PROF_personalCertValidityPeriod=1
# -OPT PROF_signingCertDN=
# -OPT PROF_signingCertValidityPeriod=20
## Importing a certificate
# -OPT PROF_importPersonalCertKS=
# -OPT PROF_importPersonalCertKSType=
# -OPT PROF_importPersonalCertKSPassword=
# -OPT PROF_importPersonalCertKSAlias=
# -OPT PROF_importSigningCertKS=
# -OPT PROF_importSigningCertKSType=
# -OPT PROF_importSigningCertKSPassword=
# -OPT PROF_importSigningCertKSAlias=
## Port Value Assignment and Validation
# -OPT PROF_defaultPorts="true"
# -OPT PROF_startingPort=
# -OPT PROF_portsFile=
# -OPT PROF_validatePorts="true"
## Linux Service Creation
# -OPT PROF_enableService="true"
# -OPT PROF_serviceUserName=
#
################################################################################
# Uncomment the following to create a stand alone application server profile.
################################################################################
#
## Profile Settings
# -OPT PROF_profilePath=
# -OPT PROF_profileName=
# -OPT PROF_isDefault="true"
## Node, Host, Server, and Cell Names
```

```
# -OPT PROF_hostName=
# -OPT PROF_nodeName=
# -OPT PROF_cellName=
# -OPT PROF_serverName="server1"
# -OPT PROF_isDeveloperServer="false"
## Optional Application Deployment
  -OPT PROF_omitAction="samplesInstallAndConfig"
## Certificate Management
# -OPT PROF_keyStorePassword=
## Requesting a certificate
# -OPT PROF_personalCertDN=
# -OPT PROF_personalCertValidityPeriod=1
# -OPT PROF_signingCertDN=
# -OPT PROF_signingCertValidityPeriod=20
## Importing a certificate
# -OPT PROF_importPersonalCertKS=
# -OPT PROF_importPersonalCertKSType=
# -OPT PROF_importPersonalCertKSPassword=
# -OPT PROF_importPersonalCertKSAlias=
# -OPT PROF_importSigningCertKS=
# -OPT PROF_importSigningCertKSType=
# -OPT PROF_importSigningCertKSPassword=
# -OPT PROF_importSigningCertKSAlias=
## Port Value Assignment and Validation
# -OPT PROF_defaultPorts="true"
# -OPT PROF_startingPort=
# -OPT PROF_portsFile=
# -OPT PROF_validatePorts="true"
## Linux Service Creation
# -OPT PROF_enableService="true"
# -OPT PROF_serviceUserName=
## Web Server Definition
# -OPT PROF_webServerCheck="false"
# -OPT PROF_webServerType=
# -OPT PROF_webServerOS=
# -OPT PROF_webServerName=
# -OPT PROF_webServerHostname=
# -OPT PROF_webServerPort="80"
# -OPT PROF_webServerInstallPath=
# -OPT PROF_webServerPluginPath=
## os400 specific options
```

```
# -OPT PROF_os400passwords=
# -OPT PROF_validationlist="QUSRSYS/EJSADMIN"
# -OPT PROF_exthttp="80"
#
################################################################################
```

Secondary Partition

```
################################################################################
#
# WebSphere Application Server V7.0 installation options file
#
# This options file runs the installation wizard in silent mode. This lets the
# options file author specify installation settings without having to run the
# wizard in graphical mode. To use this options file for silent mode execution,
# use the following command line arguments when running the wizard:
#
#    -options "/<responsefile.path>/responsefile.express.txt"
#
# Read the documentation for information on changing the value for each option.
# Enclose all values within a single pair of double quotes.
################################################################################

################################################################################
#
Installation options and values
################################################################################
#
# Invoke the install wizard in silent mode for both local and remote install
# whenever the response file is used.
#

-silent

################################################################################
#
# License Acceptance
#
# By changing the silentInstallLicenseAcceptance property in this response file
# to "true", you agree that you have reviewed and agree to the terms of the
```

```
# IBM International Program License Agreement accompanying this program, which
# is located at CD_ROOT\was.primary.pak\repository\legal\lafiles. If you
# do not agree to these terms, do not change the value or otherwise download,
# install, copy, access, or use the program and promptly return the program
# and proof of entitlement to the party from whom you acquired it to obtain
# a refund of the amount you paid.
#
# Valid values for silentInstallLicenseAcceptance:
#     true - Accepts the license and product installation will occur.
#     false - Declines the license and product installation will not occur.
#
  -OPT silentInstallLicenseAcceptance="true"
#
# If no install occurs, a log file is created in the temporary directory area
# of the user account that performed the installation (<user_area>\waslogs\).
#
###############################################################################
#
# Prerequisite Checking
#
# The installer checks the system for prerequisites by default.
#
# Uncomment the following option to notify the installer to continue with
# the installation and log the warnings even though prerequisite checking
# of the operating system failed.
#
# -OPT disableOSPrereqChecking="true"
#
# Uncomment the following option to notify the installer to continue with
# the installation and log the warnings even though prerequisite checking
# failed.
#
# -OPT disableNonBlockingPrereqChecking="true"
#
###############################################################################
#
# Select JDK
#
#  Valid values for i5osjdklocation:
#
#   -OPT i5osjdklocation="/QOpenSys/QIBM/ProdData/JavaVM/jdk60/32bit"
```

```
#    This value will select IBM Technology for JDK 6 - 32 bit,
#    5722JV1/5761JV1 Option 11
#
#   -OPT i5osjdklocation="/QOpenSys/QIBM/ProdData/JavaVM/jdk60/64bit"
#    This value will select IBM Technology for JDK 6 - 64 bit
#    5722JV1/5761JV1 Option 12
#
#   -OPT i5osjdklocation="/QIBM/ProdData/Java400/jdk6"
#    This value will select IBM Developer Kit for Java 1.6
#    5722JV1/5761JV1 Option 10
#
# If no JDK is specified, IBM Technology for JDK 6 - 32 bit will be
# selected by default, if it is installed.  If IBM Technology for JDK 6 -
# 32 bit is not installed, IBM Technology for JDK 6 - 64 bit will be
# selected. If IBM Technology for JDK 6 - 32 bit and IBM Technology for
# JDK 6 - 32 bit are not installed, IBM Developer Kit for Java 1.6 will
# be selected. If no valid JDKs are installed, the install will fail.
#
# Uncomment one of the following options to select the JDK to use to
# configure the product.
#
# -OPT i5osjdklocation="/QOpenSys/QIBM/ProdData/JavaVM/jdk60/32bit"
# -OPT i5osjdklocation="/QOpenSys/QIBM/ProdData/JavaVM/jdk60/64bit"
# -OPT i5osjdklocation="/QIBM/ProdData/Java400/jdk6"
#
################################################################################
#
# Installation Type
#
# Valid values for installType:
#     installNew - install a new copy.
#     addFeature - add features to an existing installation.
#
upgrade - upgrade a trial edition to a licensed version, or
#
upgrade Express edition to Base edition.
#
# Valid values for features:
#     noFeature - do not install any additional features
#     samplesSelected - install the Application Server Samples code.
#     languagepack.console.all - install the non-English language files for the
```

```
#
administrative console application.
#     languagepack.server.all - install the non-English language files for the
#
server runtime environments such as wsadmin and logging.
#
# The default installType setting is to install a new copy of WebSphere
# Application Server Express without the Application Server Samples.
#
# All new installations require that the profileType option has a valid value
# because at least one profile is required to become functional. Additional
# profiles can be created after installation using manageProfiles command or
# the graphical Profile management tool.
#
# Depending on the profileType selected, additional options must be specified
# to setup and configure the environment. Read the Profile creation options
# and values section below for additional information.
#
# Valid values for profileType:
#     management - The management profile provides the servers and services
#
necessary to manage your WebSphere environments.  For a base
#
application server topology an administrative agent is provided.
#     standAlone - a profile is created with a stand alone application server.
#     none - a profile is not created during installation.
#
  -OPT installType="installNew"
  -OPT profileType="none"
#
# Uncomment the following line and comment out the options below to not
# install any optional features.
#
# -OPT feature="noFeature"
#
# To install all the optional features into an existing installation of
# WebSphere Application Server, comment out the options above and uncomment
# the following options. Also, be sure the installLocation option is set to
# an existing installation.
#
# -OPT installType="addFeature"
```

```
# -OPT feature="samplesSelected"
  -OPT feature="languagepack.console.all"
  -OPT feature="languagepack.server.all"
#
###############################################################################
#
# Administrative Security
#
# Valid profile types: management and stand alone
#
# Valid values for PROF_enableAdminSecurity:
#     true - Administrative security is enabled during installation.
#     false - Administrative security is not enabled during installation.
#
# Enabling administrative security during installation is recommended.
# To configure administrative security, an administrative user name and
# password must be specified. Additionally, if the Application Server
# Samples are installed, a password also is required for the Samples user.
#
# Valid values for adminUserName: a character string
# Valid values for adminPassword: a character string
# Valid values for samplesPassword: a character string
#
# Notes:
# Do not use the following special characters for user names:
#    / \ * , : ; = + ? | < > & % ' " [ ] > # $ ^ { }
# A space ( ) is not valid in user names or passwords.
# A period (.) is not valid if it is the first character in user names.
# A dash (-) is not valid if it is the first character in user names.
# A dash (-) is not valid if it is the first character in passwords.
# Special characters can be used in passwords
#
  -OPT PROF_enableAdminSecurity="false"
  -OPT PROF_adminUserName=
  -OPT PROF_adminPassword=
# -OPT PROF_samplesPassword=
#
###############################################################################
#
# Installation Location
#
```

```
# Specify a valid directory path into which the product can be installed.
#
# i5OS Default Install Location:
 -OPT installLocation="/QIBM/ProdData/WebSphere/AppServer/V7/Express"
################################################################################
#
# Profile Location
#
# The desired install location of profiles.  For new installs, specify a valid
# directory into which the profiles should be installed.  This directory must be
# either empty or not exist.
#
# Below is the default profile install location for the i5 operating system.
#
# i5OS Default Profile Install Location:
#
#
 -OPT
defaultProfileLocation="/ERPIASP/QIBM/UserData/WebSphere/AppServer/V7/Express"
#
################################################################################
#
# Allow Profile Location Override
#
# This option allows users to overrule the empty default profile location
requirement.
#
# Valid Values:
#                                                                          true
- Allow profile location override
#
                                                                          fals
e - Do not allow profile location override
#
# If desired, uncomment the following entry
#
  -OPT allowOverrideProfileLocation="true"
#
################################################################################
#
# Trace Control Output
```

```
#
# Valid Values for traceFormat:
#     ALL - output files saved as separate plain text and XML files.
#     text - output file saved in plain text format only.
#     XML - output file saved in standard Java logging XML format only.
#
# Trace output is saved as both text and XML files by default, but it can be
# restricted to only one output format.
#
# The amount of trace information captured can be controlled. All informational
# messages, warnings, and severe warnings are output to a trace file by default.
#
# Valid values for traceLevel:
#     OFF - No trace file is produced.
#     SEVERE - Only severe errors are output to a trace file.
#     WARNING - Non-fatal exceptions and warnings are added to trace file.
#     INFO - Informational messages are added to the trace file.
#     CONFIG - Configuration related messages are added to the trace file.
#     FINE - Trace all public method calls.
#     FINER - Trace all non-public method calls except getters and setters.
#     FINEST - Trace all methods, entry and exit parameters, and return values.
#
# -OPT traceFormat=ALL
# -OPT traceLevel=INFO
#
################################################################################

################################################################################
####
#
Profile creation options and values
################################################################################
# In this section, the options and valid values for creating all of the
# profile types are described. Following this descriptive section, each
# profile type is listed with all of the options necessary to create it
# with its default values.
#
################################################################################
#
# Profile Settings
#
```

```
# Valid profile types: management and stand alone
#
# Valid values for PROF_profilePath: An empty directory path, such as
#
                                                                    <app
_server_root>/profiles/<profile_name>
#
# Specify a valid directory to contain the files for the run-time environment,
# such as, commands, configuration files, and log files.
# The user account that runs the installation must have proper permissions.
# The directory must be empty and have adequate disk space available.
# On Windows systems, the total path length cannot exceed 80 characters.
#
# Valid values for PROF_profileName: a unique character sting
#
# Do not use the following special characters for profile names:
#     / \ * , : ; = + ? | < > & % ' " [ ] > # $ ^ { }
# Note: a period (.) is not valid if it is the first character.
#
# Valid values for PROF_isDefault:
#     true - make this profile the default profile for the installation.
#     false - retain the current default profile for the installation.
#
# The first profile created for an installation is designated the default.
# Only one profile can be designated the default profile for an installation.
# Commands that are executed from the <app_server_root>/bin/ directory that
# do not specify a profile to run against are run against the default profile.
#
###############################################################################
#
# Management Server Type
#
# Valid profile type: management
#
# Valid values for PROF_serverType:
# The management profile only has one server type for the Base and Express
# versions of WebSphere.
#
# ADMIN_AGENT - An administrative agent provides management capability for
# base application server profiles. Administrative agents have the
# ability to manage multiple separate base profiles simultaneously.
```

```
# Administrative agents only manage profiles within the boundary
# of the single system.
#
###############################################################################
#
# Node, Host, Server and Cell Names
#
# Valid profile types: management and stand alone
#
# Valid values for PROF_hostName: a character string
# Valid values for PROF_nodeName: a character string
# Valid values for PROF_cellName: a character string
# Valid values for PROF_serverName: a character string
#
# Do not use the following special characters for node, host or cell names:
#     / \ * , : ; = + ? | < > & % ' " [ ] > # $ ^ { }
# Note: a period (.) is not valid if it is the first character.
#
# The node name is for administration and must be unique.
#
# The host name is the domain name system (DNS) name (short or long) or
# the IP address of this computer. If using IPv6, then specify the IP address.
#
# The server name is a logical name for the JVM process that runs in a node.
# You can specify your own server name using the PROF_serverName option.
# The default server name for an application server is server1.
# The default server name for an secure proxy server is proxy1.
#
# The cell name is a logical name for a group of nodes.
#
#############################
#
# Development Server Template
#
# Valid profile type: stand alone
#
# Valid values for PROF_isDeveloperServer:
#    true - create the application server with developer settings.
#
# The application server process created in the stand alone application server
# profile can be configured with settings that are optimized for development.
```

```
# The development template reduces startup time and allows the server to run
# on less powerful hardware. Do not use this option for production servers.
#
################################################################################
#
# Optional Application Deployment
#
# Valid profile types: management and stand alone
#
# Valid values for PROF_omitAction:
#     deployAdminConsole - do not deploy the administrative console
#     defaultAppDeployAndConfig - do not deploy the default application
#     samplesInstallAndConfig - do not deploy the sample applications
#
# The administrative console, default application, and Application Server
# Sample applications can be optionally deployed to supported profiles types.
# Use the omitAction option to prevent the specified applications from
# being deployed to the new profile.
#
# The administrative console is a Web-based console for managing application
# servers. Deploying the administrative console is strongly recommended.
#
# The default application contains the Snoop, Hello, and HitCount servlets.
# The default application is deployable to the application server.
#
# The sample applications are not recommended for deployment to production
# Application Server environments. Deploy the sample applications to exercise
# the application server and evaluate the latest technological advancements.
# The sample applications are deployable to the application server in the
# stand alone application server profile.
#
################################################################################
#
# Certificate Management
#
# Valid profile types: management and stand alone
#
# Use these options fo request a certificate from a Certificate Authority (CA)
# or import an existing certificate. Both options require that the
# PROF_keyStorePassword to be set.
#
```

```
# Valid values for PROF_keyStorePassword: a character string
#
# Requesting a certificate
# Valid values for PROF_personalCertDN: a character string
# Valid values for PROF_personalCertValidityPeriod: number of days (integer)
# Valid values for PROF_signingCertDN: a character string
# Valid values for PROF_signingCertValidityPeriod: number of days (integer)
#
# Importing a certificate
# Valid values for PROF_importPersonalCertKS:
#     path to the key store file (character string)
# Valid values for PROF_importPersonalCertKSType: a character string
# Valid values for PROF_importPersonalCertKSPassword: a character string
# Valid values for PROF_importPersonalCertKSAlias:
#     the unique alias of the certificate in the key store (character string)
# Valid values for PROF_importSigningCertKS:
#     path to the key store file (character string)
# Valid values for PROF_importSigningCertKSType: a character string
# Valid values for PROF_importSigningCertKSPassword: a character string
# Valid values for PROF_importSigningCertKSAlias:
#     the unique alias of the certificate in the key store (character string)
#
################################################################################
#
# Port Value Assignment and Validation
#
# Valid profile types: management and stand alone
#
# Valid values for PROF_defaultPorts:
#     true - use the default port values for WebSphere Application Server.
# Valid values for PROF_startingPort:
#     a positive integer port value, within the valid port range
# Valid values for PROF_nodeStartingPort:
#     a positive integer port value, within the valid port range
# Valid values for PROF_portsFile:
#     a fully qualified path to a valid ports property file
# Valid values for PROF_nodePortsFile:
#     a fully qualified path to a valid ports property file
#
# There are four ways to assign port values, choose only one option.
# Consult the Information Center for lists of the ports that each profile
```

```
# type uses and the default values assigned to each port.
#
# Use PROF_defaultPorts to assign the set of default port values assigned
# to the selected profile type.
#
# Alternatively, use PROF_startingPort to assign a block of ports to the
# profile. Port values will be assigned incrementally as required to assign
# a unique value to each port in the selected profile type.
#
# Otherwise, use PROF_portsFile to assign your own specific port values
# to each port that is needed for the selected profile type.
#
# The last way to assign port values is to not specify any of the three
# options. If none of the three options are specified, then initially the
# default port values will be assigned. However, if an assigned port value
# is in use by another installation of WebSphere Application Server or
# is actively in use by any other application on the system, then the
# port value will be incremented to a port value that is open and available.
#
# Note that installations of WebSphere Application Server prior to
# Version 6.1 might not be found reliably.
#
# Also, installation of WebSphere Application Server that are not
# registered with the operating system might not be found reliably.
#
# To have more than one installation of WebSphere Application Server
# running on the same machine, unique port values must be assigned
# to each installation. Otherwise, only one installation of WebSphere
# Application Server can run.
#
# Valid values for PROF_validatePorts:
#     true - validates that each port value is unique and is not in use.
#     false - no validation of port values
#
# The validatePorts option is set to false by default. The validatePorts
# option verifies whether the port values to be used are assigned to other
# profiles and whether the ports are actively in use by other applications.
# If a port conflict is detected, then validation fails and the profile
# will not be created.
#
################################################################################
```

```
#
# Web Server Definition
#
# Valid profile types: stand alone
#
# Valid values for PROF_webServerCheck:
#     true - enable the creation of a Web server definition.
#     false - do not create a Web server definition.
#
# A Web server definition is not created by default.
# If a Web server is used to route requests for dynamic content from the
# application server, then you may want to create a Web server definition.
# Web server definitions also may be created from the administrative console
# or using a script that is generated during Web server plug-in installation.
#
# Valid values for PROF_webServerType (case sensitive):
#     IHS - IBM HTTP Server
#     DOMINO - Lotus Domino Web servers
# Valid values for PROF_webServerOS:
#     aix, hpux, linux, os390, os400, solaris, windows
# Valid values for PROF_webServerName: a character string
# Valid values for PROF_webServerHostName: DNS host name or IP Address
# Valid values for PROF_webServerPort: a HTTP port number
# Valid values for PROF_webServerPluginPath: directory path to plug-in
# Valid values for PROF_webServerInstallPath: directory path to Web server
#
# To create a Web server definition, specify the type of Web server and its
# operating system. The Web server name is used to identify the specified
# Web server in the administrative console. Also provide the DNS host name
# or IP address of the Web server, its primary communication port
# (default 80), and the complete directory path to the Web server plug-ins.
# Additionally, if the Web server is IHS, then provide the complete
# directory path to where it is installed.
#
# Do not use the following special characters for Web server names:
#     / \ * , : ; = + ? | < > & % ' " [ ] > # $ ^ { }
# Note: a period (.) is not valid if it is the first character.
#
##############################################################################
#
# OS/400 Passwords
```

```
#
# Valid profile types: stand alone
#
# If specified, the profile will be configured to store the encoded passwords in
# an i5/OS validation list object.
#
# Valid Values:
#     true - use i5/OS password encoding
#     false - do not use i5/OS password encoding (use the default XOR encoding)
#
################################################################################
#
# OS/400 Password Validation List
#
# Valid profile types: stand alone
#
# Validation list to use if PROF_os400passwords is specified.
#
# Valid Values:
#     A fully qualified validation list object name.
#     Format is LIBRARY/OBJECTNAME, eg. MYLIB/MYVLDL
#
################################################################################
#
# External HTTP port
#
# Valid profile types: stand alone
#
# The external HTTP port for your Web server instance.
#
# Valid Values: a positive integer port value, within the valid port range
#

################################################################################


################################################################################
# Uncomment the following to create a management profile.
################################################################################
#
## Profile Settings
```

```
# -OPT PROF_profilePath=
# -OPT PROF_profileName=
# -OPT PROF_isDefault="true"
# -OPT PROF_serverType="ADMIN_AGENT"
## Node, Host and Cell Names
# -OPT PROF_hostName=
# -OPT PROF_nodeName=
# -OPT PROF_cellName=
## Optional Application Deployment
# -OPT PROF_omitAction=
## Certificate Management
# -OPT PROF_keyStorePassword=
## Requesting a certificate
# -OPT PROF_personalCertDN=
# -OPT PROF_personalCertValidityPeriod=1
# -OPT PROF_signingCertDN=
# -OPT PROF_signingCertValidityPeriod=20
## Importing a certificate
# -OPT PROF_importPersonalCertKS=
# -OPT PROF_importPersonalCertKSType=
# -OPT PROF_importPersonalCertKSPassword=
# -OPT PROF_importPersonalCertKSAlias=
# -OPT PROF_importSigningCertKS=
# -OPT PROF_importSigningCertKSType=
# -OPT PROF_importSigningCertKSPassword=
# -OPT PROF_importSigningCertKSAlias=
## Port Value Assignment and Validation
# -OPT PROF_defaultPorts="true"
# -OPT PROF_startingPort=
# -OPT PROF_portsFile=
# -OPT PROF_validatePorts="true"
## Linux Service Creation
# -OPT PROF_enableService="true"
# -OPT PROF_serviceUserName=
#
################################################################################
# Uncomment the following to create a stand alone application server profile.
################################################################################
#
## Profile Settings
# -OPT PROF_profilePath=
```

```
# -OPT PROF_profileName=
# -OPT PROF_isDefault="true"
## Node, Host, Server, and Cell Names
# -OPT PROF_hostName=
# -OPT PROF_nodeName=
# -OPT PROF_cellName=
# -OPT PROF_serverName="server1"
# -OPT PROF_isDeveloperServer="false"
## Optional Application Deployment
  -OPT PROF_omitAction="samplesInstallAndConfig"
## Certificate Management
# -OPT PROF_keyStorePassword=
## Requesting a certificate
# -OPT PROF_personalCertDN=
# -OPT PROF_personalCertValidityPeriod=1
# -OPT PROF_signingCertDN=
# -OPT PROF_signingCertValidityPeriod=20
## Importing a certificate
# -OPT PROF_importPersonalCertKS=
# -OPT PROF_importPersonalCertKSType=
# -OPT PROF_importPersonalCertKSPassword=
# -OPT PROF_importPersonalCertKSAlias=
# -OPT PROF_importSigningCertKS=
# -OPT PROF_importSigningCertKSType=
# -OPT PROF_importSigningCertKSPassword=
# -OPT PROF_importSigningCertKSAlias=
## Port Value Assignment and Validation
# -OPT PROF_defaultPorts="true"
# -OPT PROF_startingPort=
# -OPT PROF_portsFile=
# -OPT PROF_validatePorts="true"
## Linux Service Creation
# -OPT PROF_enableService="true"
# -OPT PROF_serviceUserName=
## Web Server Definition
# -OPT PROF_webServerCheck="false"
# -OPT PROF_webServerType=
# -OPT PROF_webServerOS=
# -OPT PROF_webServerName=
# -OPT PROF_webServerHostname=
# -OPT PROF_webServerPort="80"
```

```
# -OPT PROF_webServerInstallPath=
# -OPT PROF_webServerPluginPath=
## os400 specific options
# -OPT PROF_os400passwords=
# -OPT PROF_validationlist="QUSRSYS/EJSADMIN"
# -OPT PROF_exthttp="80"
#
################################################################################
```

Appendix 4: List of common abbreviations and acronyms

ASP – Auxiliary Storage Pool

HA – High Availability

HASP – High Availability Solutions Manager

HTTP – Hyper Text Transfer Protocol

IASP – Independent Auxiliary Storage Pool

SAN – Storage Access Network

SVC – SAN Volume Controller

SYSBASE – IBM i system storage base pool

WAS – WebSphere Application Server

XSM – Cross-site Mirroring

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