Chapter 34.

# November 2009

Welcome to the November 2009 edition of IBM InfoSphere Information Server Developer's Notebook (IISDN). This month we answer the question;

> My company wishes to configure a number of training PCs with version 8.1.2 of the IBM Information Server Platform. Can you tell me how you would do this?
>
> *Excellent question! This month's author has taught classes and POTs (Proof of Technology events) on the Lenevo T61 laptop with 3 GB of RAM and a Windows XP operating system, and we were about at the limit of what that hardware could support. (Windows [itself] needs 1.5-2 GB of RAM.) Any good sized work within the Information Analyzer component and a second database server was a bit too much. Using the newer Lenevo W500 with a base Linux operating system though, and you'll be in very fabulous shape.*
>
> In this edition of IISDN, we review the IBM InfoSphere Information Server Platform install and configure, including many of the operating system related choices and issues.

All of these solutions were *developed and tested* on the (IBM) InfoSphere Information Server Platform (IIS) version 8.1.2, using the Microsoft Windows XP/SP3 platform to support IIS client programs, and a RedHat Enterprise Linux (RHEL 5.4) 64 bit SMP server (Linux kernel version 2.6.18-164.el5) to support the IIS server side components.

The IBM InfoSphere Information Server Platform allows for a single, consistent, and accurate view of data across the full width of the corporate enterprise, be it relational or non-relational, staged or live data. As a reminder, the IBM InfoSphere Information Server Platform software product contains the following major components;

> Business Glossary, Business Glossary Anywhere, Business Glossary Extender for Eclipse, Information Analyzer, FastTrack, Information Services Director, DataStage, QualityStage, Balanced Optimization, MetaBridges and Brokers, Metadata Workbench, Federation Server, Classic Federation, Event Publisher, Replication Server, Data Architect, DataMirror Transformation Server, the Parallel Framework, Common Connector Architecture, Validator/Discovery and more.

Obviously, the IBM InfoSphere Information Server Platform is a large and capable product, addressing many strategic needs across the enterprise, and supporting different roles and responsibilities.

 

## 34.1 Terms and core concepts

If you've read any of the past IBM InfoSphere Information Server Developer's Notebook (IISDN) documents, you know we are highly prejudiced towards Linux; its open, fast, secure, loaded with tons of tools and features, and allows us as developers to more effectively model how customers are using the IBM InfoSphere Information Server Platform (IIS) in the field. Following the question of how and where to install the Information Server Platform, we make the following choices in this document;

- The IIS version 8.1 supported platform requirements are located at,

  http://www-01.ibm.com/software/data/infosphere/info-server/overview/requirements.html

  These include versions 8.1, 8.1.1 and 8.1.2 of IIS. At the time of this writing, version 8.1.2 is the most current release of IIS.

- To install a new release 8.1.2, you would,
  - Install 8.1
  - Install FixPak 1
  - Install the FixPaks to get to 8.1.2

- For an Intel based platform (you mentioned PCs), we'll discuss the Lenevo W500 laptop and any peculiarities it offers on install of the operating system. (There are a few.)

  A 2.5 inch internal laptop drive with 500GB currently costs $94 (U.S.) You only need the default sized drive, but why limit yourself.

  And 4 GB of RAM is fine, but an extra 4 GB (8 GB total), is only an extra $264 (U.S.) Again, spend some money and have some real fun.

- For choice of operating systems, we prefer Linux.

 

We'll use the 64 bit version of RedHat Enterprise Linux V 5.4, kernel version 2.6.18-164.el5.

**Note:** Many subscribers to IISDN are IBM employees.

IBM employees can get enterprise Linux operating systems from,

https://ftp3.linux.ibm.com/

If you don't have an existing user id for that system, it will prompt to send a note to your manager for a zero cost approval granting access. Once access is granted, download the given ISO image, burn that file to a blank DVD, place it in the DVD bay of your PC, turn the PC on, and off you go.

In this IISDN document, we use the image located at,

redhat/release_cds/rhel-5-u4/Server/x86_64/*DVD.iso

Because a small number of IIS client programs require MS/Windows, we'll run a virtual machine of that.

**Note:** Never used a Virtual Machine (VM)?

VM's are fabulously handy. First we'd recommend you read,

http://en.wikipedia.org/wiki/VMware

Basically you have a host (also called base, or native) operating system, which sits atop your hardware like you are accustomed to. Then you run a VM program just like you run MS/Word, MS/Excel, only in this case, the program you run can support its own embedded operating system.

When you are running, for example, VMWare Workstation or VMWare Player, the guest operating system has no idea that its not sitting atop its own private hardware.

Some people think VMWare offers poor performance, but that's just not true. Often those folks are running MS/Windows with a 3 GB memory limit, and they try to run a guest operating system and application that itself needs 2-3 GB of RAM. They see poor performance because they are hitting a memory constraint.

http://www/VirtualBox.org makes a free ware virtual machine product that we have heard good things about.

http://www.VMWare.com offers a free VMWare Player, much like Adobe offers a free PDF Reader. VMWare Player can not create new

 

operating system images; you must instead get an existing VM image of the guest operating system you wish to use. If you don't have that guest operating system, you need VMWare Workstation for the period of time it takes you to create one..

**Note:** Again, IBM employees-

IBM currently has a North America site license with VMWare to supply VMWare Workstation in various forms. If you qualify for that license, you start the process to download at,

http://techworks.dfw.ibm.com/techworks/web.nsf/doc/MODM-7BQT8L

Essentially you start at the above url, and get redirected to a private VMWare site. Upon registering, you'll get a serial number and 30 days of free technical support.

We tried using a 32 bit version 5.x VMWare Workstation on our 64 bit RedHat Linux and started having problems. We then used 64 bit version 7.0 and had zero problems.

## Installing 64 bit RedHat Enterprise Linux

The Lenevo W500 laptop (and all Lenevo laptops) seem to change exact versions of its firmware every 2 weeks of production. When we installed Linux on our box, we encountered some BIOS issues that you may not. In all cases, Google pointed us to the proper fix within minutes. Specifically we had to,

- You enter BIOS setup on the Lenevo W500 by pressing the blue ThinkVantage button during the POST (power on self test). Then press F1 to enter BIOS setup.
- Under Config -> Display -> Graphics Device

  We had to select, Discrete Graphics.

  Essentially this and the next 2 settings had to do with an advanced chip feature where the operating system can inform it to save power. It seemed like our version of Linux didn't like this capability.
- Under Config -> Display -> Battery Life

  We had to select, Integrated.
- And under Config -> Display -> OS Detection

  We had to select, Disabled

The above were changes for our operating Linux system. Linux would install and run, but our Linux XWindows (graphical windowing system) would fail until we made the above changes.

 

We had to make further BIOS changes to run 64 bit VMWare Workstation release 7.0. Since we are discussing/changing BIOS settings, let's do those now as well.

- Under Config -> CPU -> Multi-proc

  We left Multi-proc Enabled.

- Under Config -> CPU -> Intel Virtualization Technology

  We left that enabled.

- Under Config -> CPU -> VT-d Feature

  We changed that to disabled. We should have just disabled it because it had a stupid name, but also changed it because it helped VMWare.

**Note:** Before this change, VMWare Workstation was throwing an error about Long Integers, something or another. This change cleared that error.

Perhaps other settings, software or hardware, clear that error too.

With all of the BIOS settings changes made and saved, install the operating system. Comments related to this include;

- 64 bit Linux has to be the hardest operating to install and configure; that's why we like to practice with it.

  Generally you have to load 64 bit and 32 bit versions of most libraries. Someone will install the Oracle Client libraries, and only install the 64 bit version of those files. The error message Oracle throws doesn't clearly state, you are missing 32 bit versions of a given file.

  By means of comparison, the AIX operating isn't nearly as difficult because almost everything has been 64 bit only on that platform for 10 or more years.

**Note:** We absolutely love, love, love,

http://rpm.pbone.net/

There you can research and then also download any missing 64 bit or 32 bit Linux libraries you ever need.

- We always, always install all packages when installing Linux. This greatly lessens the likelihood that we will be missing something later.

 

**Note:** And always give your new operating a 2 part hostname, for example,

MyBox.MyDomain

If you don't have the MyDomain part, whatever it is, your box will not operate correctly with a DNS server.

## Installing VMWare Workstation and more

The version of operating system we are using in this edition of IISDN is pretty new; released in the past 12 months. What you will observe a few times is that very old versions of operating system libraries have been replaced or renamed.

Our version of VMWare would complain about 2 missing or renamed libraries. Through our research (Google, and rpm.pbone.net) we knew we were fine, and thus installed VMWare with the RPM (RedHat Package Manager) nodeps argument. Example as shown,

```
rpm  -i  --nodeps  *.rpm
```

Where "*.rpm" was the VMWare package name. (And there are 2 hyphens in front of the nodeps flag.).)

**Note:** Again, IBM employees-

Another program you will want to install is our ATT VPN client program. You wont find that program on the IBM Intranet, but will find it on the ATT site. See,

ftp://ftp.attglobal.net/pub/custom/ibm_linux/

Its called the AGN Client, and I successfully used version,

agnclient-1.0-2.0.1.3003.i386.rpm

That's a 32 bit program and that's fine. If you forgot your VPM username and related, you can contact 888-IBM-HELP.

## Installing the guest operating system (inside VMWare)

VMWare Workstation allows all sorts of devices to be connected to your host or then guest operating system. You can instruct VMWare to boot from the CD drive, or from an ISO image. Boot and install MS/Windows as you normally would.

 

**Note:** Sorry, last time, IBM employees-

IBM does not give out copies of the MS/Windows operating system without stringent control. You do get the IBM Standard Desktop Client (C4EB, Client for e-Business) through ISSI, the IBM Standard Software Installer. Comments,

- Through ISSI you request the C4EB load.
- This system allows you to create a bootable DVD with an operating system (its not Windows) from which you load a new operating system you have requested.

  This is very cool technology; its called LifeBoat.

  Based on Linux, the LifeBoat OS has the ATT Linux version of the VPN client, a FireFox Browser, and much more.
- See,

  https://lifeboat.ibm.com/lifeboat/entitlement/check_entitlement.php
- After you boot the DVD, you can load your given operating system. On a very slow DSL line, my load took 20 hours but worked fabulously.
- When the new operating system boots, you go through the standard IBM Windows registration you've seen numerous times.
- This C4EB wont have MS/Office or such loaded; return to ISSI or DeskSide Support and have that work done for you.

## Make backups

So now you have all of your base operating systems; 1 64 bit RedHat Enterprise Linux running on your hardware, and a guest operating system in the form of a VMWare image.

To backup VMWare, just turn it off and copy the data files, which are your virtual machine.

For Linux backup we use,

http://www.mondorescue.org/

A freeware disaster recovery solution for Linux.

## Now install Information Server Platform 8.1

Sadly, we are not going to now document every step towards installing the IBM InfoSphere Information Server Platform (IIS). Things change in available operating systems, new Oracle or Ingres concerns or issues arise weekly, new

 

features also arrive weekly, etcetera. And too many folks have already written guide after guide offering their insight into installing and what they believe they've found. What we will offer here is a broad overview, and a couple of perhaps tools that may be new to you. Comments include;

- The IIS version 8.1 Installation Guide comes on the installation media; read it, print it, live it.

  I've installed over 140 times and I will forget things if I'm not reading the guide each and every time.

- There is a new Pre-req Checker available at,

  http://www-01.ibm.com/support/docview.wss?uid=swg24022700

  That tool is now a mandatory part of my toolbox. Its free and perhaps the coolest thing ever. Figure 34-1 displays the Pre-req Checker running on Linux.

**Note:** To run the Pre-req Checker, you need to have a Java RunTime Environment (JRE) version 1.4.2 or higher installed.

We couldn't find anything that would run with the JRE that came on our Linux installation, and choose a Sun version 1.6 JRE instead.

 

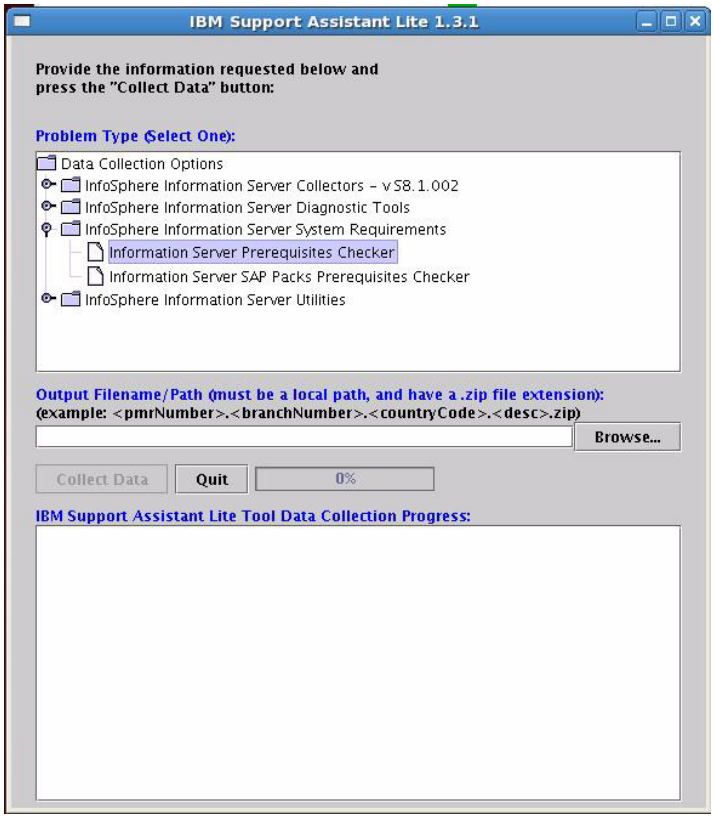


*Figure 34-1 The new Pre-req Checker, available for Windows and Linux.*

– And Figure 34-2 displays a portion of 1 of the numerous reports that are available.

  When we used the Pre-req Checker for our install, we found 2 operating systems libraries that were missing, and 1 blocked port.

  Locate, download and install missing operating system libraries from the Web site listed far above.

 

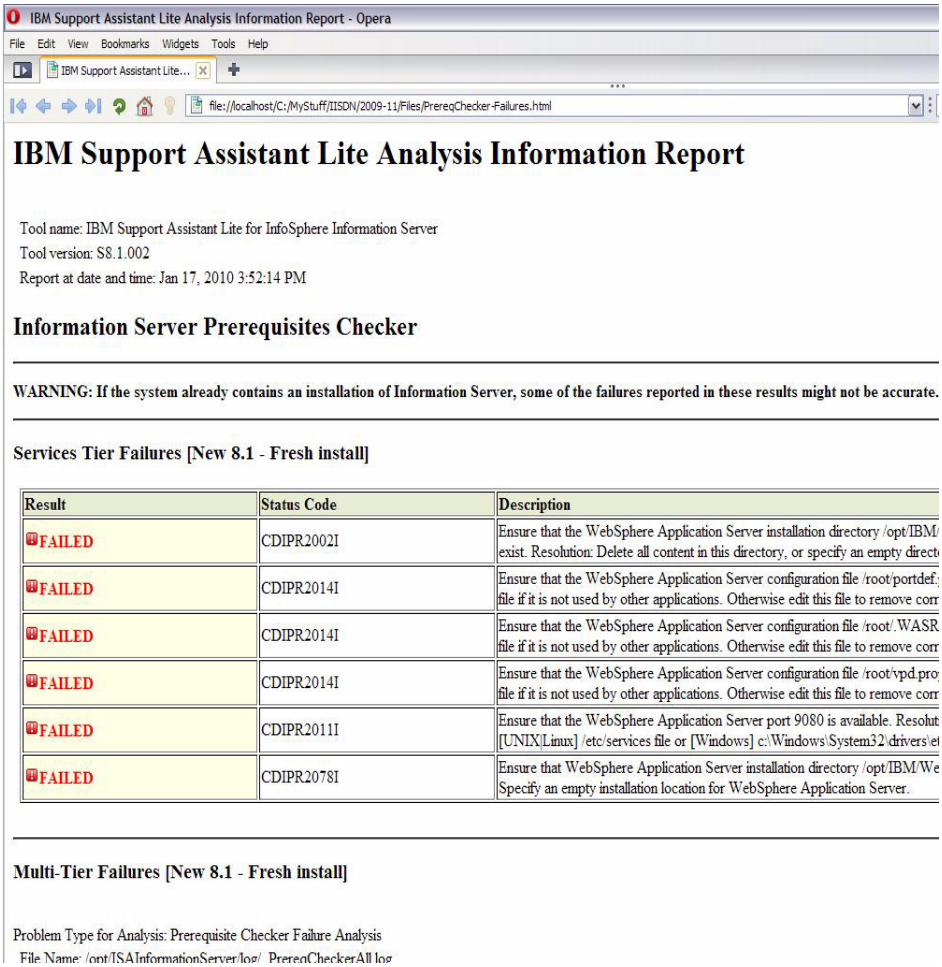


*Figure 34-2 A portion of Pre-req Checker output displayed in the Opera Web Browser.*

## Installing FixPak 1

There are at least 3 Java Runtime Environments (JREs) embedded in the various physical tiers of Information Server Platform. The embedded WebSphere Application Server (WAS) tier has 2 of its own.

When installing FixPak 1, 1 of the total JREs that are part of the Information Server Platform is updated (its not 1 of the WAS JREs), and if you or any other program happens to be using the JRE we want to update, it is busy, and the install of FixPak 1 will hang. This is all clearly documented in the Installation Guide of FixPak 1.

 

The JRE included with WAS in the "_jvm" subdirectory is an older JRE and not suitable to install with. If you use the JRE included with WAS under java/, your install will work fine in this regard.

The FixPak 1 Installation Guide is at,

http://www-01.ibm.com/support/docview.wss?uid=swg27017262&aid=1

And is very complete.

### And then installing 8.1.2

The 8.1.2 Installation Guide is at,

http://www-01.ibm.com/support/docview.wss?uid=swg27017216&aid=1

And is also very complete.

In all cases, check for new versions of software. And in all cases, query to see if there are on line guides of the documents you are depending on; those versions are more likely to have been updated.

## 34.2 In this document, we reviewed or created:

In this document we over viewed installing 64 bit RedHat Enterprise Linux on a laptop PC, with a guest operating system of MS/Windows-XP. Further, we over viewed installing the IBM InfoSphere Information Server Platform; more specifically introducing the new Pre-req Checker.

### Persons who help this month.

Mary Monahan, Yong Li, Daniel Cox, and Sean Byrd.

### Additional resources:

### Legal statements:



 

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