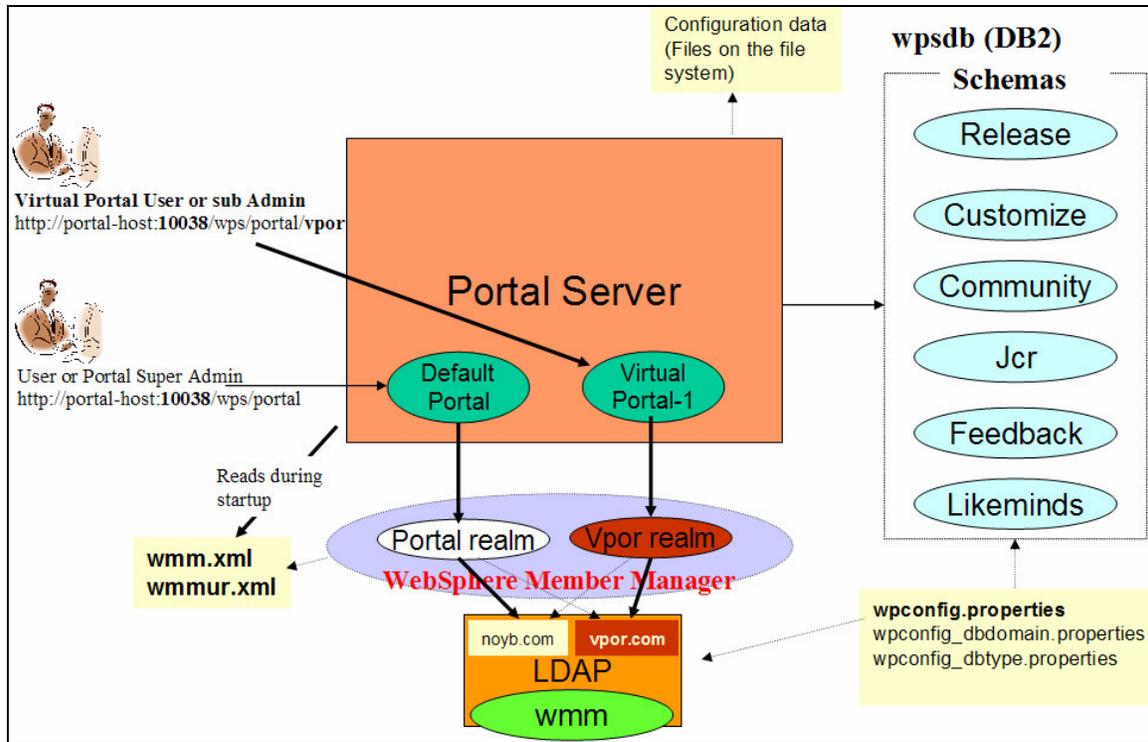


## Chapter 5

# WebSphere Portal Server V6: Virtual Portals and Multiple Realms

## Introduction

Virtual Portals (VP) are logical portals that share the same WebSphere Portal Server V6 (WP V6) hardware and software installation. WP V6 supports up to 100 VPs without installing WP V6 software again as long as the system has enough resources to run that many VPs. All of the portal VPs, including the default, run on and share the same JVM (Java Virtual Machine). You can customize each VP, provide a user population (using the realm feature), create and administer portal VPs separate from the others even though they all run in the same JVM. In this Virtual Portal environment, each VP will have its own unique URI. Using this VP feature you can not only save costs by using the shared resources for multiple portals, but you also can enable a new portal application much faster as you don't have to spend time installing and configuring new hardware and software for the new portal. If you need more information about the virtual portals or want to learn different virtual portal scenarios, then refer to the WP V6 information center at <http://publib.boulder.ibm.com/infocenter/wpdoc/v6r0/index.jsp>.



In this chapter, you are going to create a Virtual Portal and configure it with a separate realm (named vpor realm in our sample) as shown in the illustration above. This VP will use the URL <http://portal-host:10038/wps/portal/vpor> (note that the initial part of URI is the same as the default portal (/wps/portal) with an extension of /vpor). The default portal is still intact and works the same way when you use the URL you used before which is <http://portal-host:10038/wps/portal>. Remember that when you installed the portal server initially, it created a default portal configured with a realm called portal as explained in the previous chapter.

We will configure both the realms (portal and vpor) in such a way that users listed under both of these LDAP suffixes, noyb.com and vpor.com, can logon to both portals (default and virtual portals). But when you register a new user after accessing the default portal (<http://portal-host:10038/wps/portal>), that user information will be created under the noyb.com suffix. In the same way when you register a new user after accessing the virtual portal (<http://portal-host:10038/wps/portal/vpor>), that user information will be created under the vpor.com suffix. You need to modify the wmm.xml and wmmur.xml files to configure for multi-realm support as you will see later in this chapter. You need to re-start the portal server after these XML files are modified to read the new configuration with multi-realm support.

To grant access to the user population of the VP, you also need to create an LDAP suffix for vpor.com in the ITDS Server and populate users and groups under that suffix. In this multi-portal (with multi-realm) environment, the wpsadmin user name (which belongs to the wpsadmins group) will still act as a super administrator for all the VPs including the default portal. You will also choose a group (named vadmins group under vpor.com suffix in our case) as a sub-admin group for this new VP to administrator resources within the VP environment. Sub-administrators (users belonging to vadmins) will have limited admin capabilities compared to the super administrator (users belonging to the wpsadmins group).

## ***Populate New User Population on ITDS Server***

Before we create and configure a new Virtual Portal on our portal server, we need to setup a new LDAP suffix (vpor.com in our case) and populate users (vuser and vadmin in our case) and a group (vadmins in our case).

**Step 1:** Stop WebSphere Portal if it is running. From the command prompt, navigate to <WPV6-PROFILE-ROOT>\bin and run the **stopServer.bat** **WebSphere\_Portal** command.

**Step 2:** To simplify efforts to create these new users and groups, we will use the same LDIF file we used before (PortalUsers.ldif) modified as follows:

- Made a copy of the **PortalUsers.ldif** and rename it to **VPortalUsers.ldif**
- Change every instance of:
  - **noyb** (yourco if it is original file) to **vpor**.
  - **wpsadmins** to **vadmins**

- **wpsadmin** to **vadmin**
- **wpsbind** to **vuser**

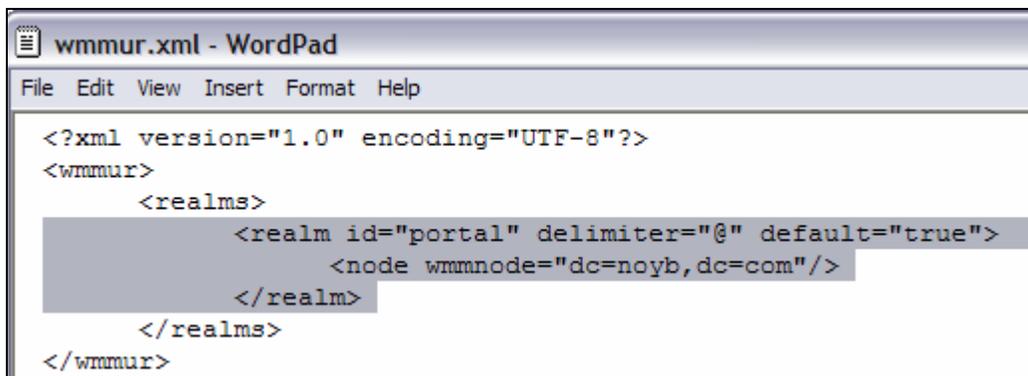
**Step 3:** Create a new suffix (vpor.com) and import the file VPortalUsers.ldif to create new users and groups under the new suffix using the ITDS configuration tool (idsxcfg.cmd) as you did in the earlier chapter.

**Step 4:** Verify that the new users and groups are created under the dc=vpor,dc=com suffix in the LDAP server by using the ITDS Web Administration tool (or the Softerra tool). Use the URL <http://ldap-host:12100/IDSWebApp/IDSjsp/IDSConsoleframeWork.jsp> to connect to the LDAP Web Admin tool. Refer to the printed version of the book (chapter 17) for more information about this tool.

### ***Work with the wmm and wmmur property files***

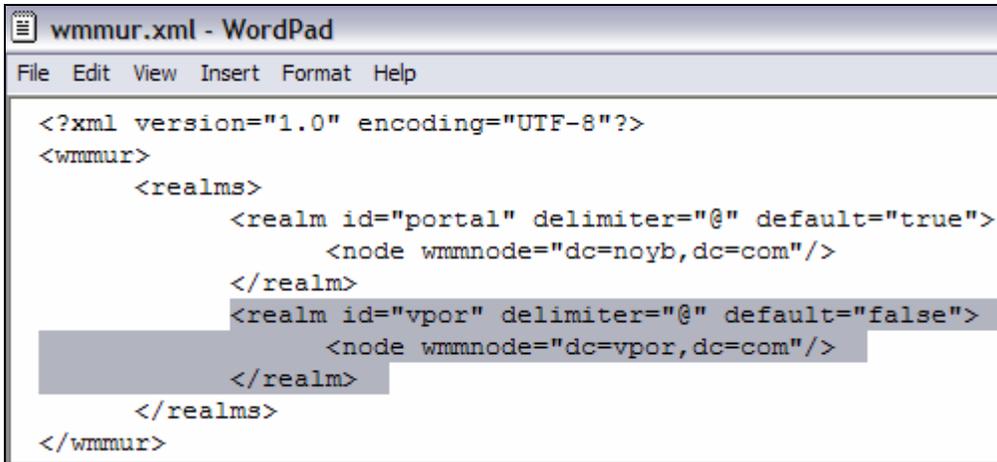
Navigate to the <WPV6-ROOT>\wmm directory and make a backup copy of the wmm.xml and wmmur.xml files, before you modify them.

**Step 5:** Open the wmmur.xml file and you should see entries similar to the ones shown in the screenshot below. You should see only one realm (portal) which is the default realm at this stage. Portal server will read this file during the startup to get the information about realm(s) and LDAP nodes defined under each realm.



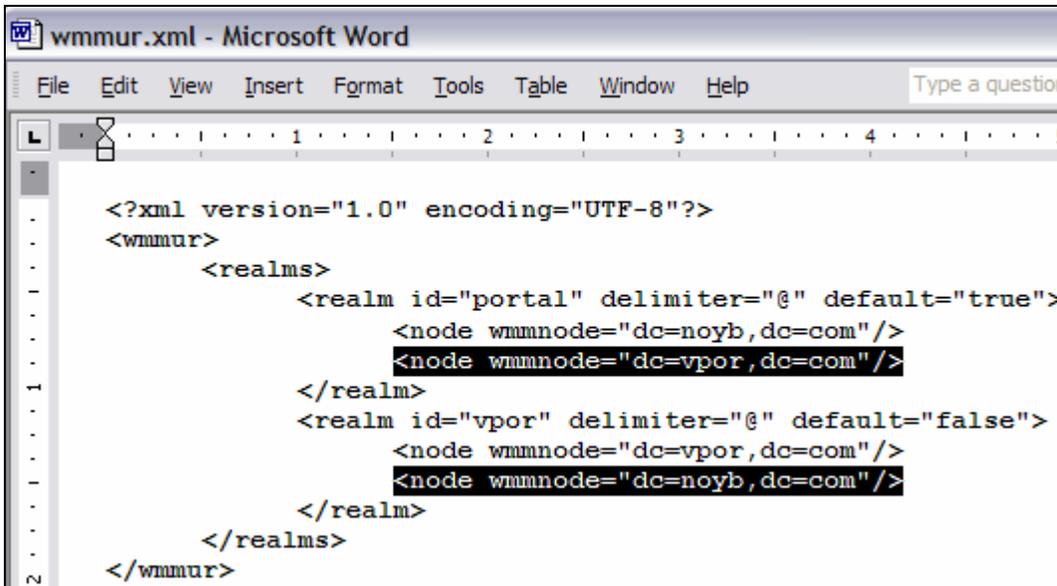
```
<?xml version="1.0" encoding="UTF-8"?>
<wmmur>
  <realms>
    <realm id="portal" delimiter="@" default="true">
      <node wmmnode="dc=noyb,dc=com"/>
    </realm>
  </realms>
</wmmur>
```

- Now add support for the second realm in wmmur.xml file which is vpor in our case. To do so copy and paste the three lines highlighted above (starting with <realm id="portal ...). Make the following changes to the lines you copied to reflect the new realm (vpor) as explained and as shown in the screenshot below.
  - Change id="portal" to id="vpor".
  - Change default="true" to default="false".
  - Change wmmnode="dc=noyb,dc=com" to wmmnode="dc=vpor,dc=com".



```
<?xml version="1.0" encoding="UTF-8"?>
<wmmur>
  <realms>
    <realm id="portal" delimiter="@" default="true">
      <node wmmnode="dc=noyb,dc=com"/>
    </realm>
    <realm id="vpor" delimiter="@" default="false">
      <node wmmnode="dc=vpor,dc=com"/>
    </realm>
  </realms>
</wmmur>
```

- As we discussed in the Introduction section, users from both the LDAP suffixes (noyb.com and vpor.com) should be able to login to both the default and the virtual portal. To do that (1). add node vpor (dc=vpor,dc=com) to the portal realm and (2). add node noyb (dc=noyb,dc=com) to the vpor realm as shown in the screenshot below.



```
<?xml version="1.0" encoding="UTF-8"?>
<wmmur>
  <realms>
    <realm id="portal" delimiter="@" default="true">
      <node wmmnode="dc=noyb,dc=com"/>
      <node wmmnode="dc=vpor,dc=com"/>
    </realm>
    <realm id="vpor" delimiter="@" default="false">
      <node wmmnode="dc=vpor,dc=com"/>
      <node wmmnode="dc=noyb,dc=com"/>
    </realm>
  </realms>
</wmmur>
```

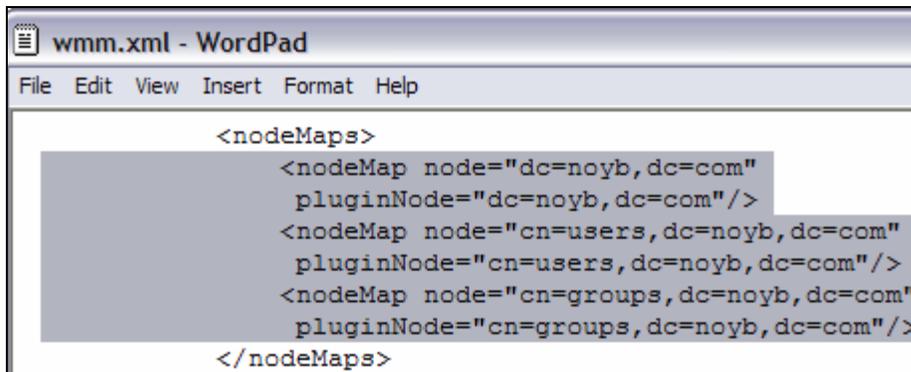
- Because we configured multiple LDAP suffixes (noyb.com and vpor.com) under each realm (portal and vpor), the portal (default portal or virtual portal) should exactly know where to create users and groups (under noyb.com or vpor.com). To eliminate any confusion, you need to introduce two more lines under each realm specifying the node for the users and another for the groups as shown in the screenshot as highlighted. With this information, each portal (through its respective realm) will have the specified node under which it has to create users and groups. You didn't have to specify this information when you had only one portal (default portal) because there was only one suffix (noyb.com) under the realm (portal) earlier. Take time to type these lines as it

is worth understanding these concepts instead of copying files from somewhere and not knowing what you are doing.

Now that you are done with making changes to the wmmur.xml file, you need to work on the wmm.xml file next.

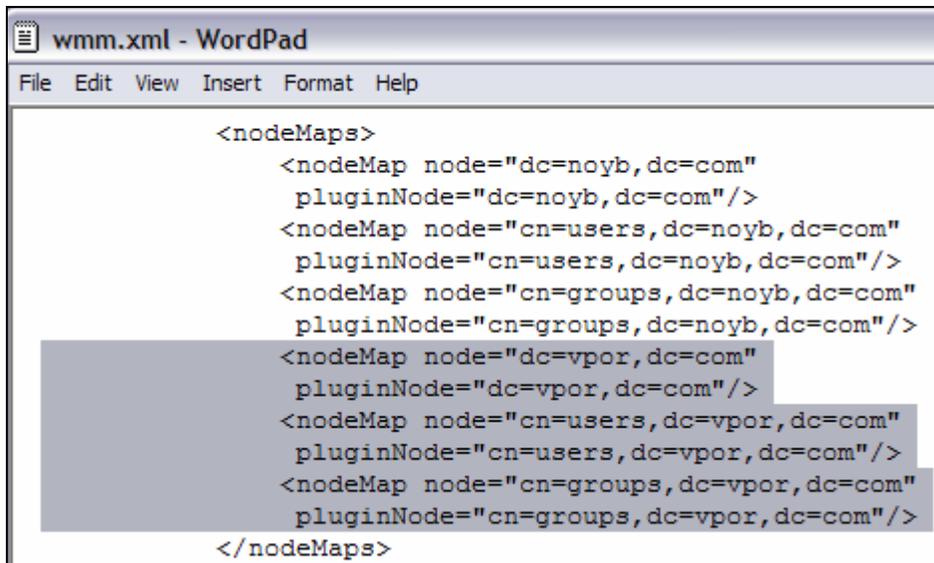
```
<?xml version="1.0" encoding="UTF-8"?>
<wmmur>
  <realms>
    <realm id="portal" delimiter="@" default="true">
      <node wmmnode="dc=noyb,dc=com" />
      <node wmmnode="cn=users,dc=noyb,dc=com" defaultParent="Person" />
      <node wmmnode="cn=groups,dc=noyb,dc=com" defaultParent="Group" />
      <node wmmnode="dc=vpqr,dc=com" />
    </realm>
    <realm id="vpqr" delimiter="@" default="false">
      <node wmmnode="dc=vpqr,dc=com" />
      <node wmmnode="cn=users,dc=vpqr,dc=com" defaultParent="Person" />
      <node wmmnode="cn=groups,dc=vpqr,dc=com" defaultParent="Group" />
      <node wmmnode="dc=noyb,dc=com" />
    </realm>
  </realms>
</wmmur>
```

**Step 6:** Open the wmm.xml file and scroll down to the **nodeMaps** section. You should see entries similar to the one shown in the screenshot below under <nodeMaps>. The Portal server will read this file during the startup to get the information about the LDAP server, its nodes and nodes under which it has to search for users and group apart from other things that are beyond scope of this chapter.



```
<nodeMaps>
  <nodeMap node="dc=noyb,dc=com"
    pluginNode="dc=noyb,dc=com" />
  <nodeMap node="cn=users,dc=noyb,dc=com"
    pluginNode="cn=users,dc=noyb,dc=com" />
  <nodeMap node="cn=groups,dc=noyb,dc=com"
    pluginNode="cn=groups,dc=noyb,dc=com" />
</nodeMaps>
```

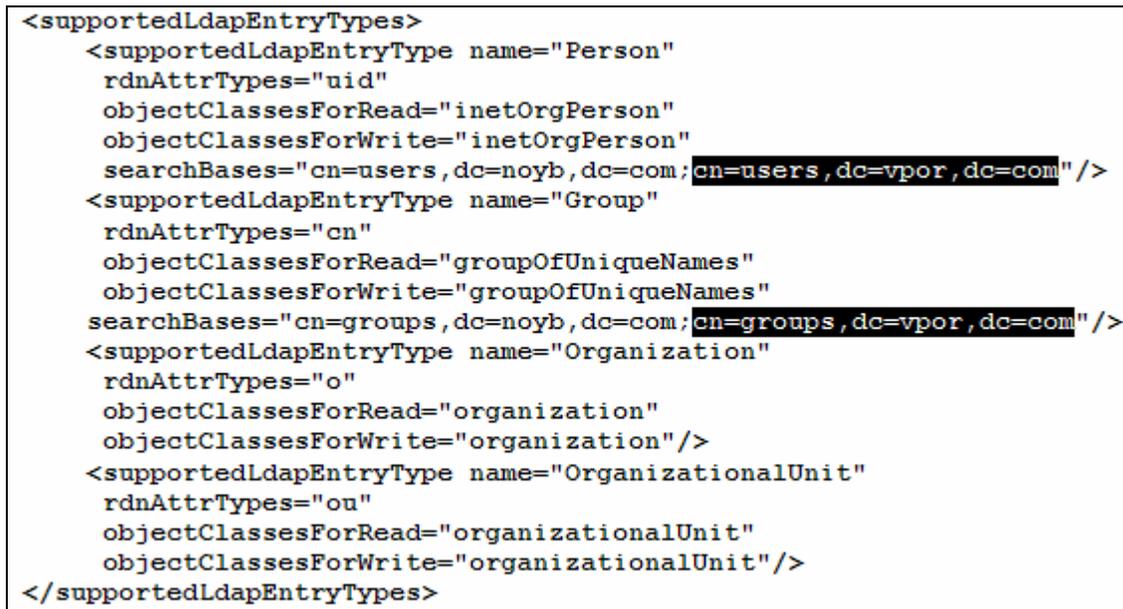
- Now add support for the second node which is vpqr in our case. To do that, copy and paste the six lines highlighted above (starting with <nodeMap node="dc=noyb..."). Change every instance of the word **noyb** to **vpqr** in the lines you copied as shown in the screenshot below.



```
wmm.xml - WordPad
File Edit View Insert Format Help

<nodeMaps>
  <nodeMap node="dc=noyb,dc=com"
    pluginNode="dc=noyb,dc=com"/>
  <nodeMap node="cn=users,dc=noyb,dc=com"
    pluginNode="cn=users,dc=noyb,dc=com"/>
  <nodeMap node="cn=groups,dc=noyb,dc=com"
    pluginNode="cn=groups,dc=noyb,dc=com"/>
  <nodeMap node="dc=vpqr,dc=com"
    pluginNode="dc=vpqr,dc=com"/>
  <nodeMap node="cn=users,dc=vpqr,dc=com"
    pluginNode="cn=users,dc=vpqr,dc=com"/>
  <nodeMap node="cn=groups,dc=vpqr,dc=com"
    pluginNode="cn=groups,dc=vpqr,dc=com"/>
</nodeMaps>
```

- Navigate to the **searchBases** entity under <supportedLdapEntryTypes> section and append user (;cn=users,dc=vpqr,dc=com) and group (;cn=groups,dc=vpqr,dc=com) information for vpqr separating each with a semi-colon as shown in the screenshot below.

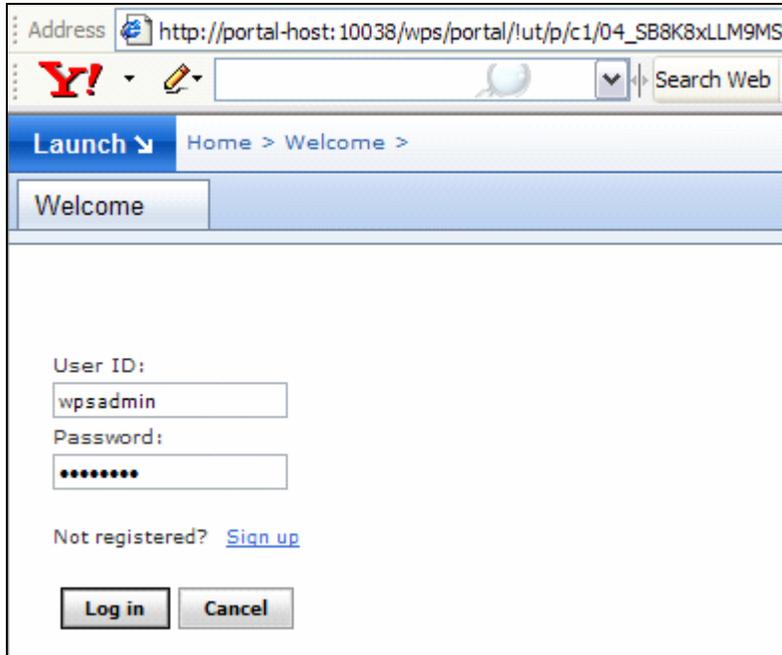


```
<supportedLdapEntryTypes>
  <supportedLdapEntryType name="Person"
    rdnAttrTypes="uid"
    objectClassesForRead="inetOrgPerson"
    objectClassesForWrite="inetOrgPerson"
    searchBases="cn=users,dc=noyb,dc=com;cn=users,dc=vpqr,dc=com" />
  <supportedLdapEntryType name="Group"
    rdnAttrTypes="cn"
    objectClassesForRead="groupOfUniqueNames"
    objectClassesForWrite="groupOfUniqueNames"
    searchBases="cn=groups,dc=noyb,dc=com;cn=groups,dc=vpqr,dc=com" />
  <supportedLdapEntryType name="Organization"
    rdnAttrTypes="o"
    objectClassesForRead="organization"
    objectClassesForWrite="organization" />
  <supportedLdapEntryType name="OrganizationalUnit"
    rdnAttrTypes="ou"
    objectClassesForRead="organizationalUnit"
    objectClassesForWrite="organizationalUnit" />
</supportedLdapEntryTypes>
```

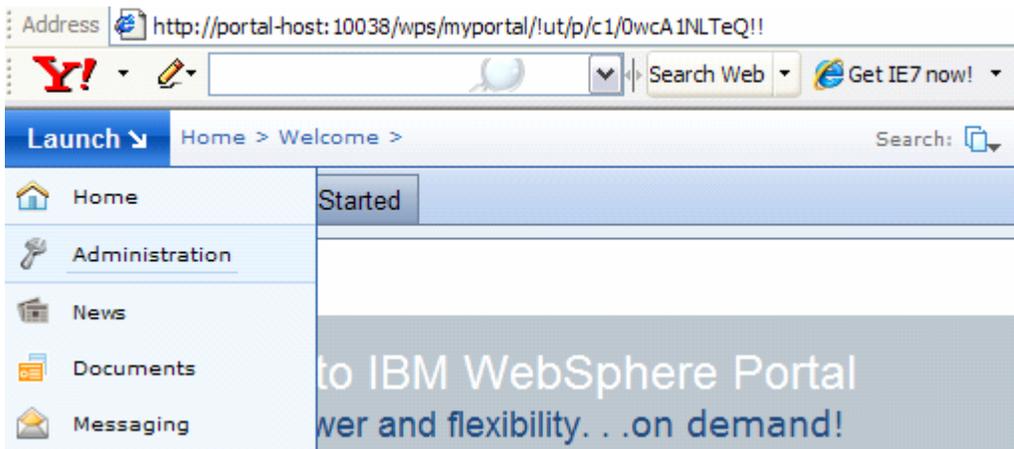
**Step 7:** You are done with modifying the property files. Save the wmm.xml file. Start the portal server. From the command prompt, navigate to <WPV6-PROFILE-ROOT>\bin and run the **startServer.bat WebSphere\_Portal** command.

## Create Virtual Portal

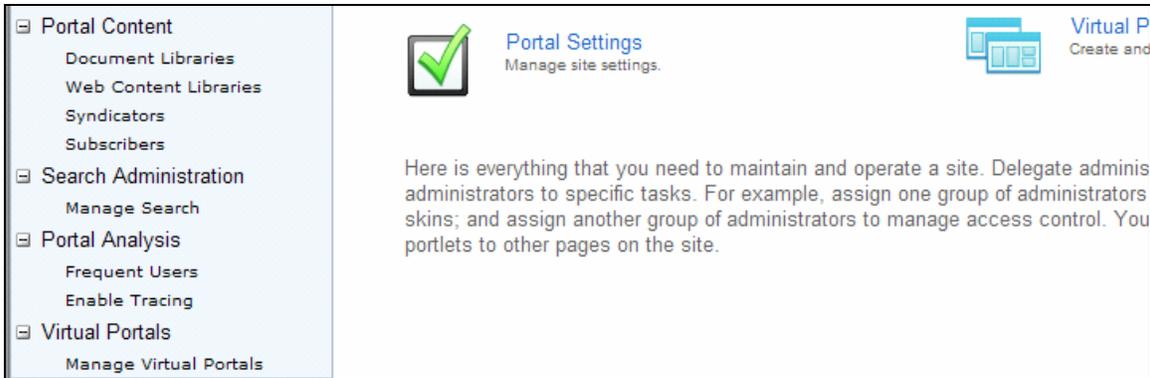
**Step 8:** Logon to the default portal from the browser as the **wpsadmin** user name (super admin) using the URL <http://portal-host:1003/wps/portal>.



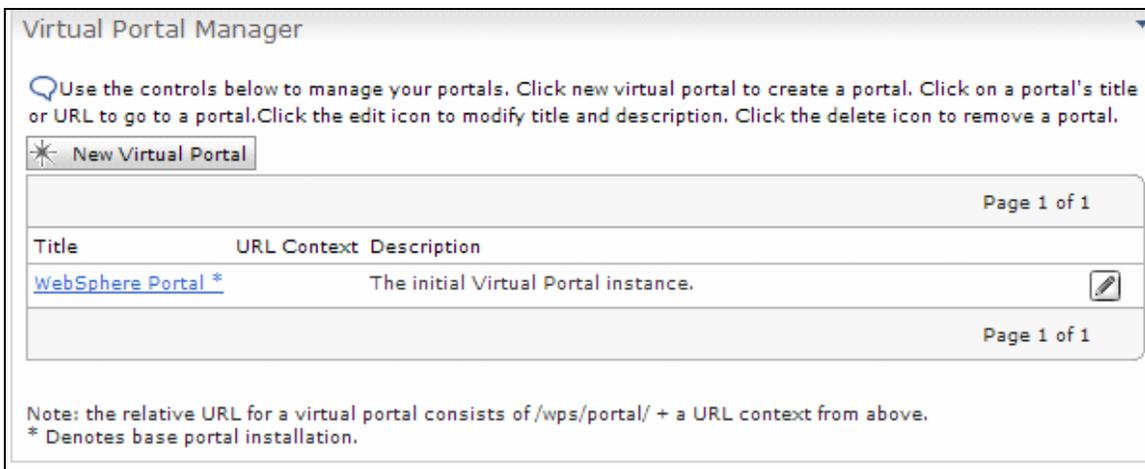
**Step 9:** Click on **Launch** and select **Administration** link.



**Step 10:** Scroll down on the options list (left side of the screen) and click on the **Manage Virtual Portals** option.



**Step 11:** Click on **New Virtual Portal** tab to create your first virtual portal.



**Step 12:** On the resulting screen, specify the requested information for your new virtual portal. For our sample configuration we entered the following shown in the screenshot below. Click on OK after entering the required values.

- **Virtual portal title** as **Vportal**
- **Description** as **Virtual portal**
- **URL context** as **vpwr**. This means that you need to enter the URL <http://portal-host/wps/portal/vpwr> to access this virtual portal from the browser.
- **User realm** as **vpwr** as defined in the property files earlier.
  - If you don't see **vpwr** in the drop down list, then you have not properly configured your **wmm.xml** and **wmmur.xml** files or you have not re-started the portal server after modifying these files.
- **Initial admin group** as **vadmins**. All the users under this group will act as sub-administrators for this virtual portal. You need to click on the magnifying glass icon to search for All the groups and select the **vadmin** group from the list.

- Again, if you don't see vadmins in the list, then you have not properly configured your wmm.xml and wmmur.xml files or you have not re-started the portal server after modifying these files.
- Default theme as **IBM**.

Virtual Portal Manager

**Create New Virtual Portal**  
Provide the information requested below and click OK to create a new virtual portal. Click the search icon to search for an admin user group. Click the preview icon to preview the theme.

Virtual portal title:

Virtual portal description:

URL Context:

User realm:

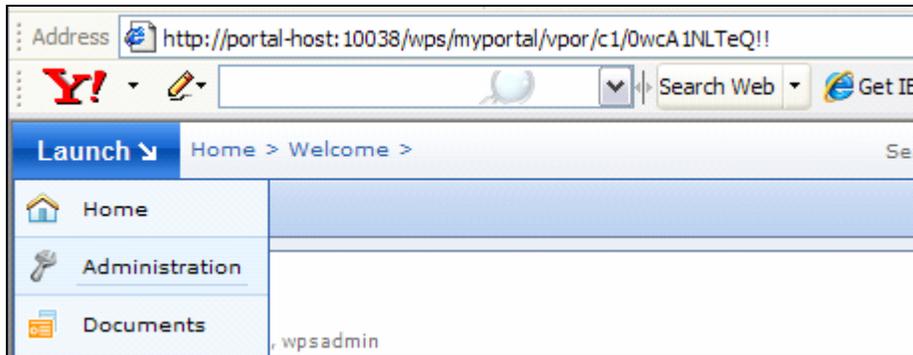
Initial admin user group: (a valid user realm must be specified first)

Default theme:

Warning: Creating a virtual portal may take several minutes.

**Step 13:** Logon to the new virtual portal using the URL <http://portal-host:10038/wps/portal/vpor> as vuser, vadmin, wpsadmin and guest one at a time. Verify that only vadmin (sub admin) and wpsadmin (super admin) have administrative access on this portal as you will see the Administration link under Launch as shown in the screenshot.

- Logout of the virtual portal and click on sign up to register a new user **vguest** and verify. Refer to chapter 4 for more information on signing up a new user. If you don't see the link for sign up then use the URL <http://portal-host:10038/wps/portal/vpor> to get to the login screen where sign up link is located.
- Verify on the LDAP server that user vguest is created under the vpor.com suffix.



**Step 14:** Logon to the default portal using the URL <http://portal-host:10038/wps/portal> as vuser, vadmin, wpsadmin and guest one at a time. Verify that only the wpsadmin user has administrative access on this portal.

- Logout of the default portal and click on sign up to register a new user guest2 and verify. Refer to chapter 4 for more information on signing up a new user. If you don't see the link for sign up then use the URL <http://portal-host:10038/wps/portal> to get to the login screen where sign up link is located.
- Verify on the LDAP server that user guest2 is created under the noyb.com suffix.

### ***Add a Second Virtual Portal (challenge lab)***

If you want to extend the existing configuration with another VP and a realm then create a Virtual Portal named **vpor2** and configure it with a separate realm named **vpor2** (which in turn pointing to users and groups under **vpor2.com** suffix on the LDAP Server). This second VP will use the URL <http://portal-host:10038/wps/portal/vpor2>. Configure the portal environment in such a way that users listed under vpor2.com (new LDAP suffix), can not logon to the first VP (<http://portal-host:10038/wps/portal/vpor2>). Same way users listed under vpor.com can not logon to the second VP (<http://portal-host:10038/wps/portal/vpor>). The behavior of rest of the portal environment must stay the same.

Following are the hints if you need them:

1. Use **Populate New Users on ITDS Server** section to create a new suffix called vpor2.com.
  - Use **vadmins2** as group, **vadmin2** and **vuser2** as users while creating new users and group through **VPortalUsers2.ldif** file.
2. Your **wmmur.xml** file should look similar to the one shown in the screenshot below, after your configuration.

```
<?xml version="1.0" encoding="UTF-8"?>
<wmmur>
  <realms>
    <realm id="portal" delimiter="@" default="true">
      <node wmmnode="dc=noyb,dc=com" />
      <node wmmnode="cn=users,dc=noyb,dc=com" defaultParent="Person" />
      <node wmmnode="cn=groups,dc=noyb,dc=com" defaultParent="Group" />
      <node wmmnode="dc=vp2,dc=com" />
      <node wmmnode="dc=vp2,dc=com" />
    </realm>
    <realm id="vp2" delimiter="@" default="false">
      <node wmmnode="dc=vp2,dc=com" />
      <node wmmnode="cn=users,dc=vp2,dc=com" defaultParent="Person" />
      <node wmmnode="cn=groups,dc=vp2,dc=com" defaultParent="Group" />
      <node wmmnode="dc=noyb,dc=com" />
    </realm>
    <realm id="vp2" delimiter="@" default="false">
      <node wmmnode="dc=vp2,dc=com" />
      <node wmmnode="cn=users,dc=vp2,dc=com" defaultParent="Person" />
      <node wmmnode="cn=groups,dc=vp2,dc=com" defaultParent="Group" />
      <node wmmnode="dc=noyb,dc=com" />
    </realm>
  </realms>
</wmmur>
```

3. Modify wmm.xml file adding support for vp2.com as you did for vp2.com while creating the first VP.
4. Logon to the default portal (<http://portal-host:10038/wps/portal>) as wpsadmin (super admin). Use the realm vp2 from the drop down list and append the context root with vp2 while creating the second virtual portal.
5. Use <http://portal-host:10038/wps/portal/vp2> to invoke the second virtual portal. Verify that only users under noyb.com and vp2.com suffixes can access this portal.

### ***Federating Multiple LDAP servers (FYI)***

Eventhough we have configured all the LDAP suffixes on the same LDAP server, WP V6 supports multiple realms pointing across LDAP servers as shown in the illustration below. We could have configured vp2.com suffix on a different LDAP server which may be on a different machine. You need to add information about the new LDAP server in wmm.xml file. You need to copy, paste and modify entries related to the LDAP server under the <LdapRepository> section in wmm.xml file. Refer to portal information center for more information on this topic.

