INTRODUCTION

As enterprise applications evolved from a client/server model to an Internet computing architecture and rapidly grew in complexity, many information technology departments deployed enterprise applications using a fragmented, piecemeal middleware infrastructure. The resulting middleware complexity represents nearly 50% of the information technology costs in organizations today. Furthermore, 60% of organizations consider their enterprise application infrastructure an impediment to their ability to meet business requirements. Savvy enterprises are evolving their applications from monolithic, closed systems to modular, open systems with well-defined interfaces. This new application architecture, called Service-Oriented Architecture (SOA), represents a fundamental shift in the way new applications are designed and developed, and the way in which they are integrated with existing legacy systems and business applications. To meet the challenge of middleware complexity, Oracle created an entirely new class of systems software—an Application Platform Suite (APS)—a comprehensive and integrated enterprise application infrastructure based on SOA.

Oracle recognized that organizations today need a more comprehensive and coherent platform to develop, deploy, and manage enterprise portals. Oracle Application Server 10g Release 2, the third generation of Oracle’s APS, offers the industry’s leading enterprise portal solution, Oracle Portal 10.1.4. Oracle Portal provides users centralized access to all data, applications, and business processes. While most enterprise portals primarily centralize access to information sources, Oracle Portal has evolved beyond “information-centric portals” to provide “application-centric portals”, which also centralize access to Web services and enterprise applications, allowing users to search and find the Web services they need to access. Similarly, Oracle has also integrated its Business Process Management facilities with its Enterprise Portal to provide users a single point of access to business processes that span multiple systems and Web services (“process-centric portals”). Through a process-centric portal, users can monitor the state of processes that span multiple systems accessed through the portal.

The key goal of Oracle Portal 10.1.4 was to enable enterprises to seamlessly fuse their enterprise applications, business intelligence applications, business process systems, and Web services into a single, highly productive workplace. Oracle Portal Enterprise Application Systems such as SAP, PeopleSoft, JD Edwards, and Oracle E-Business Suite can be fused with Oracle Portal out-of-the-box at various levels and this provides tools ranging from declarative support for business developers to JDeveloper coding support for Java developers. Oracle Portal’s world-class self-service content management and publishing capabilities have been enhanced even further and taken to a completely new level to include tight integration with the Windows desktop. To allow for the possible implementation of any conceivable business requirement, a whole new set of APIs and frameworks has been introduced that open up the product and allow limitless extensibility and flexibility. Underlying Oracle Portal 10.1.4’s comprehensive catalog of new capabilities is an architecture that ensures stability, scalability, availability, and top performance. Oracle has made several significant architectural changes to the rock-solid architecture of the previous release, including the introduction of a new caching model. Customers can be assured that Oracle Portal 10.1.4 is based on a secure, standards-based architecture that supports complex and highly available deployments and offers comprehensive lifecycle management capabilities.
COMPREHENSIVE FUSION CAPABILITIES FOR BETTER BUSINESS AGILITY

In today’s business environment, it is rare to find an organization that has a fully homogeneous software infrastructure. Rather, the typical case is that the various lines of business within the organization have independently selected very different software packages to meet their specific tactical or strategic needs. Likewise, mergers and acquisitions in many industries have resulted in fewer, larger companies with even more diverse IT infrastructures.

In response to the problem of disjointed software infrastructures, Oracle Portal was designed to help customers fuse their distributed environments into a single workplace. Using Oracle Portal, end users are presented with a unified interface that provides access to all of the applications that they need to do their job.

Out-of-the-box, Oracle Portal seamlessly fuses with all aspects of the Oracle Application Server such as BPEL (Business Process Execution Language), Business Intelligence, and J2EE applications, as well as with other vendors’ portals by supporting industry standards such as WSRP (Web Services for Remote Portlets) and JSR 168. Service-Oriented Architectures (SOA) and Web services can be seamlessly fused at various levels to support the full development spectrum —— from a business user to a J2EE developer. Furthermore, Oracle Portal integrates seamlessly with the Windows desktop, supporting end users in their familiar working environment.

The introduction of the PeopleSoft and JD Edwards product lines into the Oracle family of Enterprise Applications has enabled Oracle Portal to directly fuse three of the industry’s major application suites (Oracle E-Business Suite, PeopleSoft Enterprise, and JDE EnterpriseOne) into a single user experience. Similarly, Oracle has worked closely with other major vendors, such as SAP, to tightly integrate their products into the overall Oracle Portal experience.

PROCESS PORTALS (BPEL) SUPPORT

BPEL (Business Process Execution Language) is emerging as the clear standard for composing multiple synchronous and asynchronous services into collaborative and transactional process flows. Oracle BPEL Process Manager is a comprehensive, standards-based, easy-to-use solution for creating, deploying, and managing cross-application business processes with both automated and human workflow steps, enabling a true Service-Oriented Architecture.

Oracle provides a clear architecture for integrating its world class Oracle Portal with its technology leading BPEL Process Manager. Furthermore, Oracle BPEL Process Manager supplies a Portal Provider that contains several prebuilt portlets.

Oracle BPEL Worklist Portlets

The Oracle BPEL Worklist application enables users to participate in a BPEL process by performing tasks that require manual intervention. The Task Listing and Task Analysis portlets provide integration with the Worklist application. Both portlets are implemented using PDK-Java (the Java Portal Developer Kit) and because they support personalizations, end users may customize the information the portlets display. The Task Listing and Task Analysis portlets are available as a provider delivered with Oracle BPEL Process Manager 10.1.2.0.2.

Task Listing Portlet

This portlet displays tasks that require user action:

- Tasks assigned to the user - the user assigned to the task must act on the task before it is routed further.
• Tasks assigned to the groups or roles that the user belongs to - one of the users belonging to the group must acquire the task before acting on it. Once one user in a group acquires the task, the task is not available to other users until it is released back to the group.

Users can review tasks for their direct reports, tasks that they created, tasks that they own, and any task that they have participated in previously.

![Task Listing Portlet](image1)

**Figure 1: Task Listing portlet**

**Task Analysis Portlet**

This portlet displays a chart that summarizes the tasks assigned to a user or a group of users.

![Task Analysis Portlet](image2)

**Figure 2: Task Analysis portlet**

**Oracle BPEL Reporting Portlets**

For the administrator, a collection of reporting portlets are available such as Instance State, Instance Execution Time, Performance, Activity Sensor, Variable Sensor, and Fault Sensor portlets. Each portlet can be personalized, allowing administrators to select the business process they want to monitor and a suitable time period for the report.
Business Activity Monitoring
 Oracle Business Activity Monitoring (Oracle BAM) gives business executives the ability to monitor their business services and processes in the enterprise, to correlate KPIs down to the actual business process themselves, and most important, to change business processes quickly or to take corrective action if the business environment changes. Each of the reports on an Oracle BAM dashboard page may be displayed as an iFrame portlet on an Oracle Portal page.

Fuse Business Processes with Oracle Portal
 In addition to the Business Process Manager portlets, Oracle Portal users can integrate their portals with business processes using the new Content Management Event Framework (CMEF), which is discussed later. In particular, the approve/reject APIs can be used with a BPEL process to provide an approval process that is handled externally.

ENTERPRISE APPLICATIONS FUSION

PeopleSoft Enterprise
 As with the Oracle E-Business Suite, support for the Oracle Identity Management and Single Sign On is at the core of PeopleSoft Enterprise integration for Oracle Portal. Using a delegated authentication model, PeopleSoft applications can automate a user login through its trust of the portal’s authentication process.

Oracle Portal 10.1.4 can be integrated with all PeopleSoft applications on PeopleTools v. 8.47 and above using PDK-Java. However, this integration is available only for the portlets generated by the PeopleSoft Pagelet Wizard.

PeopleSoft Pagelet Wizard is comparable to Oracle Portal’s OmniPortlet. It empowers business users and other subject matter experts by rapidly generating portlets from PeopleSoft application data sources using a WYSIWYG user interface. The generated portlets can be displayed on Oracle Portal pages using the popular point-and-click mechanism provided by the portal.

JD Edwards EnterpriseOne
 EnterpriseOne applications can be integrated with Oracle Portal.

When running on Oracle Application Server 10.1.2, EnterpriseOne can participate in the Oracle Single-Sign On process. A generic PDK-Java renderer displays the application’s UI and this means that virtually all EnterpriseOne business applications are available directly through Oracle Portal, with full identity integration.

In addition, users can develop custom applications using the EnterpriseOne Forms Design Aid tool. This 4GL-style tool allows business users to develop thick client-style forms (both query and transactional) that act on the application. Once a form is complete, its portlet generator automatically produces native PDK-Java portlets directly from the thick-client source. In this way, a complex business UI can be built directly into Oracle Portal without the need to implement, or even know about, the underlying J2EE environment.

SAP
 SAP systems can be integrated with Oracle Portal on many different levels, depending on the version of SAP.

SAP R/3
 Oracle Portlet Factory provides a highly productive portlet creation environment that allows SAP content to be integrated within Oracle Portal. For detailed information please read the ‘Oracle Portlet Factory’ section later in this document.

In addition, Oracle Portal provides a declarative mechanism called the SAP Data Source for OmniPortlet and this enables integration with the SAP R/3 system. SAP Data
Source in combination with OmniPortlet allows business users to create sophisticated portlets that support:

- Powerful search for BAPI function modules or business objects across the SAP Business Object Repository
- Automatic retrieval of input/output parameters for selected BAPI functions
- Definition of filtration criteria
- Numerous flexible layouts and views of the data returned
- Pagination of results with or without caching
- Portlet personalization
- Portlet-to-portlet communication

In addition to the OmniPortlet SAP Data Source, Oracle Portal provides a set of predefined portlets to integrate SAP R/3 into the portal. Covering a number of different functional areas, these portlets are based on the SAP JCO interface and include:

- **Generic SAP Portlet** - allows users to define a BAPI function, import parameter values, and display the corresponding table/columns.
- **Employee Details Portlet** - retrieves employee details from a SAP R/3 Server.
- **Exchange Rates Portlet** - presents exchange rates from exchange rate tables in SAP R/3.
- **Personnel Payroll Results Portlet** - displays payroll results for a selected employee number over a specified time period.
- **Employee Attendance Records Portlet** - displays timecard (attendance) details for a specified time period.

**MySAP / NetWeaver**

Integrating the latest releases of SAP into Oracle Portal is even more straightforward than using the OmniPortlet SAP Data Source. The Oracle Application Server Provider for SAP iViews allows users to integrate SAP MiniApps directly into Oracle Portal. MiniApps (also referred to as iViews) are the basic building blocks for SAP Portal (MySAP) and the iView provider allows these application building blocks to be exposed within Oracle Portal.

Once an iView is added to a page, the designer need only specify the PCD (identifier) to display the SAP object on an Oracle Portal page. SAP MiniApps are URL accessible so the iView provider can directly host any content returned from the MiniApp.

User identity and authorization to SAP is preserved because SAP is an external application. The customization and personalization functionality of the original MiniApp is also preserved and it uses the same SAP-style interfaces that their users are familiar with.

**ORACLE PORTLET FACTORY**

Oracle Portlet Factory is a highly productive portlet creation environment for Oracle Portal that simplifies and accelerates the development, deployment, and maintenance of custom and composite portlets that interact with SAP, PeopleSoft, and JD Edwards application data. Oracle Portlet Factory's ease of use and advanced development features dramatically streamlines the entire portlet development process, enabling
developers to deliver adaptive, robust portlets. Portlet Factory-powered portlets are dynamic, robust J2EE applications that react automatically to change; business users can modify the portlets in real time to meet changing business requirements. In addition, portlets created with Oracle Portlet Factory can automatically present themselves as stand-alone Web applications, Web services, or portlets, without requiring any coding, duplicating, or versioning of assets. By eliminating the need to separately code these implementations and variations, Oracle Portlet Factory simplifies the development, deployment, and change management process, saving companies time and money, and freeing developers to focus on more important, strategic work.

**Technology**

Oracle Portlet Factory allows developers to rapidly build portlets by pulling together a sequence of highly adaptive, reusable software components called Builders. Users assemble Builders into Models, in much the same way that you can build a spreadsheet model by snapping together formulas. At runtime, these Models are executed to dynamically generate application code, including JSPs, Java classes, and XML documents, as well as the low-level artifacts that compose the portlet application. Developers can capture and automate the process of building dynamic portlets instead of explicitly coding each portlet. In addition, developers can quickly and easily create multiple, highly customized portlets from one code base without having to write additional code or to redeploy.

![Figure 3: Oracle Portlet Factory](image)

This table lists Builders from which portlets can be assembled and used in Oracle Portal:

<table>
<thead>
<tr>
<th>Builder</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>JD Edwards EnterpriseOne Business Function</td>
<td>Queries the JDE server to find the list of libraries and the list of categories within each library.</td>
</tr>
<tr>
<td>PeopleSoft Component Interface</td>
<td>Enables introspection of the PeopleSoft system for Component Interfaces. Creates methods that can be called to get data from the selected component interface.</td>
</tr>
<tr>
<td>PeopleSoft View and Form</td>
<td>Automates the creation of a portlet that can search, display, and edit details from PeopleSoft.</td>
</tr>
<tr>
<td>SAP View &amp; Form</td>
<td>Creates an entire portlet that can search SAP, display the results, and enable drilldown for additional details from a remote-enabled SAP function call.</td>
</tr>
<tr>
<td>SAP Function Call</td>
<td>Establishes a call to a remote-enabled SAP function and creates a Java method that can be called to fetch data from the SAP system.</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>SAP Transaction</td>
<td>Calls multiple SAP functions within the context of a single SAP connection or transaction.</td>
</tr>
<tr>
<td>SAP BW Data Access</td>
<td>Provides access to a SAP Business Warehouse using the XMLA protocol.</td>
</tr>
<tr>
<td>SAP Help Values</td>
<td>Accesses the “Help Values” associated with the fields present in an SAP function.</td>
</tr>
<tr>
<td>SAP Batch Input</td>
<td>Executes an exported SAP batch input.</td>
</tr>
<tr>
<td>Service Call Builder</td>
<td>Enables consumption of Web services.</td>
</tr>
<tr>
<td>SQL Call Builder</td>
<td>Creates all the code needed to connect to a database via a J2EE data source on the application server and execute a SQL statement or prepared statement.</td>
</tr>
</tbody>
</table>

**Empower Business Users To Create, Personalize, and Manage Portlets**
Oracle Portlet Factory eases the load on IT departments by enabling business users to manage and modify predetermined aspects of portlets, including the look and feel, functionality, application flow, and connectivity.

**Effortlessly Comply with Open Standards**
Oracle is fully committed to supporting leading standards as they evolve—these include Web services and portlet standards, as well as other standards such as J2EE. Oracle’s commitment to standards is reflected in Oracle Portlet Factory, which enables customers to quickly create standards-compliant portlets without having to learn the underlying technologies. For example, using Oracle Portlet Factory, a user can:

- Quickly build JSR 168-compliant portlets without needing to know the specifics of the underlying standard.
- Instantly generate WSDL for any selected method or portlet, automatically exposing it as a Web service.

**BUSINESS INTELLIGENCE FUSION**
Oracle Business Intelligence 10g is an integrated solution that provides the business user with a complete picture across the entire organization. It facilitates making the right decisions faster, enables more employees to have access to the information they need, removes the noise, and provides quality information. Oracle Business Intelligence 10g is seamlessly integrated with Oracle Portal to make mission-critical business data available on one single place.

**Oracle Business Intelligence Discoverer**
Oracle Business Intelligence Discoverer 10g allows customized Business Intelligence portlet integration with Oracle Portal, thus enabling enterprise access to quality information in a timely manner. It introduces summary gauge portlets for a quick snapshot of the information. In addition, customers can now personalize their Business Integration portlet view of a published worksheet by changing parameter values, formats, layout, graph types, and so on.

**Oracle Reports**
Oracle Reports is Oracle’s world-class enterprise reporting solution. Multiple levels of integration with Oracle Portal are available out-of-the-box:
• Register your reports and Reports Server in Oracle Portal using four out-of-the-box portlets
• Allow Oracle Portal users to execute reports from the portal
• Execute and display Web reports as portlets, in-place
• Push report output to Oracle Portal
• Schedule report execution in Oracle Portal
• Use the special Reports item type available in Oracle Portal

WINDOWS DESKTOP INTEGRATION WITH ORACLE DRIVE
Oracle Drive is a new and powerful Oracle WebDAV client that is tightly integrated with Oracle Portal. Oracle Drive is the first and only WebDAV client that supports portal-specific content management operations directly from your Windows desktop and it fuses the Windows desktop seamlessly with Oracle Portal. Now, content managers can manage portal items from their desktop without using Portal Builder. Oracle Drive maps the Portal Repository to a Windows drive, making the repository available in Windows Explorer as a network drive. In addition, portal-specific right-click menu options are exposed to the portal users. These options allow portal users to set metadata properties for items and pages, modify access control information, view, set and delete versions of items, preview content and pages, approve or reject items, and submit items for approval.

There are many useful applications of Oracle Drive, for example, portal users can:

• Perform a regular virus check on the entire content of the Portal Repository. As the repository is mapped as a network drive, you can set up your anti-virus software to regularly scan this drive.
• Search for a file directly from Windows Explorer. For example, search for all MS Word documents in your page group using *.doc. The search behaves exactly the same as a local search in Windows.
• Use any desktop application to open, save, and in-place edit files stored in the Portal Repository.
• Make content available offline. This allows you to work without any network connection (for example, in a plane) and synchronize the content with the Portal Repository some time later when a network connection is available.
• Write command-line batch scripts and execute them against the Portal Repository.

Figure 4: Oracle Drive dialog box
WSRP AND JSR 168 SUPPORT

WSRP (Web Services for Remote Portlets) and JSR 168 are the two main portlet standards in the marketplace today. Oracle Portal 10.1.4 supports both of these standards. In fact, Oracle Portal’s existing architecture is so similar to the one specified by the WSRP committee that Oracle Portal can support communication between Oracle Portal and the new Java Portlet APIs as well as the existing APIs (PDK-Java). The J2EE portlet container uses the WSRP protocol for communication and the PDK-Java portlet container uses Oracle’s SOAP-based protocol for communication.

Figure 5: Oracle Portal Architecture

WSRP

Web Services for Remote Portlets (WSRP) are presentation-oriented, interactive Web services. WSRP provides a standard that enables all content and application providers to offer their services in a manner where they can easily be discovered and plugged into compliant portals without any programming effort on the portal’s side.

For example, this standard enables portlets running on Oracle Portal to be discovered and added to other vendors’ portals. This standard also enables Java-based portals to be interoperable with Microsoft’s proprietary WebPart technology.

JSR 168 - J2EE Portlets

JSR 168 from the Java Community Process is a set of standard Java APIs (javax.servlet.portlet package) for developing portlets. The standard guarantees that JSR 168-based Java portlets are portable and deployable to any J2EE 1.4 container. “Write Once, Run Anywhere” for Java portlets.

What Is the Difference Between WSRP and JSR 168?

WSRP is a standard messaging interface for interacting with compliant UI components. JSR 168 is a standard Java interface for portlets that builds on the J2EE programming servlet model. It is an interface between a particular Java type of UI component and its hosting container. Some other differences are that JSR 168 is Java only, whilst WSRP is platform independent, and that JSR 168 is generally local, whilst WSRP is remote.

Building Standards-Based Portlets

Oracle provides an Oracle JDeveloper plug-in for building JSR 168 portlets. The Java Portlet wizard enables developers to build a portlet skeleton easily, add business logic, and then deploy the portlet to a standards-based container. For Oracle, developers deploy these portlets to a WSRP-enabled container.

Monitoring WSRP Providers

The Provider real-time monitoring page in Enterprise Manager Application Server Control Console now displays WSRP provider metric information separately. Historical
views of WSRP metrics are also available in the Enterprise Manager Grid Control Console, providing that an Oracle Management Agent is installed and configured to point to an existing Grid Control installation.

STRUTS SUPPORT
The Apache Struts framework is one of the most popular open source frameworks for building Web applications. Struts encourage application architectures based on the JSP Model 2 approach, a variation of the classic Model-View-Controller (MVC) design paradigm. In the Model 2 approach, a servlet manages client communication and business logic execution, whilst the presentation resides mainly in JSP pages. This model differs from JSP Model 1, where the JSPs managed both browser request and data access.

The Struts framework provides its own HTTP servlet as the controller component. An XML configuration file containing the page flow of the application drives the Struts framework. Struts does not provide the model, instead, it allows the developers to integrate it with any data access mechanism, for example EJBs, TopLink, ADF Business Components, or JDBC.

To bring content from an existing MVC application into an Oracle Portal page, you need to display it as a portlet. To do this without modifying the core application, you simply replace the view with a new JSP portlet view, which sits on top of the controller and the model. With this approach, any Struts-based application can be extended to show up on a portal page without altering the model or controller.

OMNIPORTLET
In previous releases the display capabilities of OmniPortlet were restricted to specific, set layouts. Several new layout features remove this restriction.

New HTML Layout
In this release, OmniPortlet offers a new layout option —— the HTML layout. Using this layout, users specify their own HTML for displaying content. For example, a data source such as a spreadsheet could be displayed as a table with a header, repeating row section, and a footer, as the HTML layout enables you to define separate HTML snippets for displaying the header, the footer, and each row of data.

3D Effects for Charts
In the OmniPortlet Chart Layout, a 3D effect is now available. This feature adds another dimension to pie, bar, or line charts.

Data Source Support for Character-Separated Values
In previous releases, OmniPortlet parsed comma-separated values files only. In this release, portlet designers may specify a different delimiter character, such as a semicolon or tab.
CONTENT PUBLISHING

HTML Page Skins

HTML Page Skins can now be used to define the appearance of portal pages (that is, the area surrounding the page’s contents). Page skins are similar to unstructured UI templates in previous versions of Oracle Portal.

When defining the HTML for a page skin, you must include the #BODY# substitution tag to indicate where the entire portal page is to be inserted. If you want to include procedural logic in your HTML, you can write PL/SQL and enclose it between the <ORACLE> … </ORACLE> tags.

In Oracle Portal, page designers can choose whether a page is based on an HTML Page Skin or a Portal Template (that defines region structure and content). Some pages may require both, in which case a page skin can be applied to a Portal Template and the Portal Template applied to the page.

HTML Content Layouts

HTML Content Layouts give page designers complete control over the way items and their attributes are displayed in a region. Content layouts provide an alternative to the current display options for item attributes in an item region. HTML Content Layouts allow page designers to define HTML code containing special item tags that are repeated for every item in this region.
As with HTML Page Skins, <ORACLE> … </ORACLE> tags can contain programmatic code, such as conditional logic, to display item types in different ways, for example:

```plaintext
IF #ITEM.TYPE# = 'MEMBER' then
    ... output this HTML ...
ELSIF #ITEM.TYPE# = 'URL' then
    ... output this different HTML ...
END IF;
```

**Item Placeholders**

A new item type is available in Portal Templates called the item placeholder. An item placeholder controls the way the content of an item gets displayed when a user accesses the item by means of a URL. Item placeholders work with the following URL-accessible item types: PL/SQL, Text, URL, HTML File, and Text File. By applying a Portal Template containing an item placeholder to your page, you can control how the content of URL-accessible items are displayed on the page. In this way, you can create uniformity between your portal page and the display of individual item content.

At runtime, the item placeholder is replaced with the content of the URL item. This gives the user the illusion of in-place item display if multiple items all use the same Portal Template. Calling the URL for each item makes it look as if the page stays the same while only the content shown in the item placeholder changes. In previous releases, when the user clicked an item link, the item was displayed in a plain browser window. If an item placeholder is defined, an item can now say “If I am going to be viewed stand-alone, view me using template X.”

You can specify the template for a page or for an individual item. When a template is specified at the page level, all items on the page, if viewed stand-alone, use the same template. However, it is also possible to override the page-level setting for individual items on the page.

For example, you could use an item placeholder to display a result from an auto-query search portlet in-place, on the same page, without losing context of the other search results.
New URL Format
You can now use path-based URLs to access an item or a page. In previous releases
durable URLs were used exclusively whereas now both URL formats may be used.

Path-based URLs
In Oracle Portal, path-based URLs are displayed in the browser's address bar and as a
tool tip when you hover the mouse over an item. Path-based URLs are consistent with
file system-based Web sites and allow search engines, such as Google, to crawl Oracle
Portal sites easily. By passing parameters to the URL, it is possible to specify the version
of content to view, the language to view it in, and which template is used.

The format of path-based URLs are shown in the table:

<table>
<thead>
<tr>
<th>Component</th>
<th>Path-based URL Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>Page</td>
<td>http://&lt;host&gt;/portal/page/&lt;dad&gt;/&lt;PGName&gt;/&lt;PageName&gt;</td>
</tr>
<tr>
<td>Sub-page</td>
<td>http://&lt;host&gt;/portal/page/&lt;dad&gt;/&lt;PGName&gt;/&lt;PageName&gt;/&lt;SubPageName&gt;</td>
</tr>
<tr>
<td>Item</td>
<td>http://&lt;host&gt;/portal/page/&lt;dad&gt;/&lt;PGName&gt;/&lt;PageName&gt;/&lt;ItemName&gt;</td>
</tr>
<tr>
<td>Tab</td>
<td>http://&lt;host&gt;/portal/page/&lt;dad&gt;/&lt;PGName&gt;/&lt;PageName&gt;/&lt;TabName&gt;</td>
</tr>
<tr>
<td>Sub-tab</td>
<td>http://&lt;host&gt;/portal/page/&lt;dad&gt;/&lt;PGName&gt;/&lt;PageName&gt;/<a href="">TabName:SubTab</a></td>
</tr>
</tbody>
</table>

Durable URLs
Durable URLs do not break if a page or page content is moved and these URLs are
exposed in the property sheet. The format for a durable URL is the same for pages and
items:

http://<host>/portal/page/<dad>/32CD61DB623643B84CC509BF343BD7

Default Item for Pages
In this release, portal pages can display a default item when a page is displayed; for
example, index.html. This useful feature can prevent, for example, users from
accessing an underlying page template when an item placeholder is being used. This new
property is configurable at the page group level.

Accessibility Improvements for Portal Styles
Oracle Portal now supports both fixed and relative font sizes—point, pixel, EM, EX,
and %—for styles. In previous releases, you could only specify fixed fonts with Point
sizes. Now, if you specify % as a font size, the size changes automatically when the user
resets the Font Size property in the browser.
URL Rewrite Rules
URL Rewrite Rules is a new page group property that works in conjunction with Apache rewrite rules. Although Apache handles URLs coming in from the outside world, allows you to find an actual portal page, and display a nice, short URL in the browser, Apache rules do not apply if Oracle Portal generates a link to navigate to a different portal page. By default, whenever a user clicks a link on a portal page, the true portal URL is called so the Apache rewrite rule is not used. With the new page group property URL Rewrite Rules, portal URLs can be transformed in a similar way to Apache rewrite rules to ensure nice, short URLs are displayed to the user in the browser address bar.

CONTENT MANAGEMENT - NEW FEATURES

Item Attribute Enhancements
Enhancements for item attributes include:

- Default values can be set for all attributes. The value can be a static text value or generated automatically from a PL/SQL procedure.

- Users can create their own sequence numbering scheme for versions of an item. To do this you need to add the Version Number attribute to the item type definition to make it available in dialog boxes. The Version Number value is numeric and can be used in path-based URLs to directly access an item.

- Two new attributes are available - MIME Type and Character Set. Now, users can override document attributes that previously defaulted automatically when items were uploaded to the portal. For example, now you can upload a file as a Microsoft Word document even if its file extension is not .doc.

  When these new attributes are used, Oracle Text can filter portal content correctly and this can improve the speed and efficiency of portal searches

New Simple Item Link Item Type
The Simple Item Link item type allows you to create an item that links to another item in the portal. Unlike a URL item, no URLs are embedded. This metadata-driven link ensures that the link to the item does not break if changes are made to the source item or the item is moved.
New Rich Text Editor
A new graphical WYSIWYG editor, for editing text items, is available with all major browsers such as Internet Explorer, Netscape, and Firefox.

The Rich Text Editor contains several new features:

- Select all the text of a text item
- Find and replace text within a text item
- Set the properties of a cell within an HTML table

![Rich Text Editor](image)

**Figure 10: Rich Text Editor**

Configure Edit Modes
A new page group property allows you to set which edit modes are available in a page group and to set the default edit mode. One example of where these features are useful is where a Portal Template item placeholder is used to display content. In this scenario the items are not displayed or accessed from a graphical page layout. Therefore it is useful to turn off the redundant edit modes and set the List View as the default mode for managing the items.

![Default Edit Modes](image)

**Figure 11: Default Edit Modes in page group properties**

New List View Edit Mode Features
The List View edit mode offers a powerful new way of managing portal content. This section describes some of the new features available for this editing mode.

Configurable List View Edit Mode UI
A new page group setting allows you to configure which attributes are displayed in List View. This allows you to customize your List view according to the type of content being managed and also to specify order in which the content is displayed.
List View edit mode

To increase the productivity of users managing content, many more actions can now be performed on multiple items in a single operation.

Those bulk actions can include:

- Copying items and pages
- Moving items and pages
- Setting the privileges associated with a page or item
- Submitting items for approval
- Approving and rejecting items
- Checking in and checking out items

Privilege Inheritance Model

In this release, there is a new privilege inheritance model that allows an individual page to inherit its privileges either from its parent page or from the Portal Template on which it is based. This new model decreases the administration effort required to set privileges across multiple pages. Furthermore, in List View edit mode, you can set access privileges for multiple pages in a single operation and this also helps to minimize the administrative effort.

New Draft Mode for Items

In the previous release, when an approval process was defined for a page group, all new content was immediately submitted for approval. Now, if draft mode is configured, the user has the opportunity to see the item in place on the page and edit the item multiple times before submitting it for approval. When draft mode and versioning are used
together on the same page, Oracle Portal sets the current or new version status when the edited item is submitted for approval.

**Item Edit Mode for Approvers**
Approvers are now able to make changes to items before approving them. This feature is useful when an item requires minor updates; for example, an approver can now update an incorrect publish date without having to send the item back to the author to correct and subsequently resubmit through the approval process.

**Translation Improvements**
When creating a translation for an item that is both versioned and has translations, prior translations can be pulled through to the current version. This means that all translated attributes do not have to be retranslated; instead, only the attributes that are different for the new version require update.

**CONTENT MANAGEMENT EVENT FRAMEWORK (CMEF)**
The Oracle Portal Content Management Event Framework (CMEF) extends Oracle Portal’s content management capabilities by adding 104 predefined hooks to Portal events. CMEF events are triggered whenever there is an action within the portal. This allows a programmatic reaction on events that happen in the portal. Subscribers can be created to perform actions on these events.

There are three main CMEF event types: INSERT, UPDATE, and DELETE. Every Oracle Portal UI, WebDAV, and PL/SQL content management action falls under one of these event types. States are also provided to add more meaning to the events. For example, an Add/Insert event can be in one of several different states: a user can add an item with immediate publication or can set the item to be published later, a ‘Manage items with approval’ user can add an item, and so on. The state gives a clear description of the actual event. CMEF is built using Oracle Streams Advanced Queuing (AQ) technology.

**Possible Uses**
CMEF can be used for a variety of purposes including:

- **Item Validation** – For example, ensure that display names are less than 80 characters.
- **Item Notification** – For example, send e-mail to a content manager whenever a user submits an item for approval.
- **Oracle Workflow Integration/BPEL Integration** – For more complex workflow scenarios, connect other external workflow systems with the portal.

**NEW EXTENSIBILITY FEATURES (APIs)**

**New Content Management APIs and Views**
To compliment the existing Content Management APIs, there are nine new item APIs, four new folder/page APIs, and four new content management views. The new item APIs support move, copy, delete/undelete, set attributes, and check-in/check-out as well as approve/reject operations. The new folder/page APIs support move, copy, modify, and delete operations. And finally, the new content management views provide the means to access information pertaining to approval definitions, approvers, approval status, and user subscriptions.

**New Public Search API**
The new PL/SQL API executes a search programmatically and returns the search results in XML. This API allows you to design a completely customizable search form
that seamlessly integrates with the page UI. The API can also retrieve the search results as an XML document and apply a custom format or process search results to your own requirements. You can also use the API to display content from the Portal Repository in other custom applications since it is not tied to the Oracle Portal framework. For example, in a Web-based application, it is now easy to provide an Oracle Portal search form and display the search results as well.

**Search APIs**

There are four new search APIs:

- Item Search
- Page Search
- Category Search
- Perspective Search

The returned values are in the format of the content management views such as WWSBR_ALL_ITEMS.

**Search Result APIs**

There are two search result APIs:

- Get item results as XML
- Get page results as XML

Both APIs can transform search results into XML in the following ways:

- Place all search results in an XML document.
- Filter the search results, placing only specific items and pages in the XML document.

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**SEARCH - NEW FEATURES AND ENHANCEMENTS**

**Order Search Results**

Results from Oracle Portal search portlets can now be displayed in ascending or descending order.

**Filename Searching**

In this release, the filename attribute is treated as a separate metadata attribute. This means that portal users can now search for the filename itself.

**Score Weighting**

Oracle Portal now scores search hits in portal metadata higher than search hits in file content. This improves the overall scoring of search results.

**Synchronized Runtime and Design Time Behavior**

The end-user experience for the Custom Search portlet at runtime is now the same as the edit defaults experience at design time. For example, when you add a new attribute as a search condition such as ‘Create Date’, the attribute is displayed at runtime using the appropriate format mask.

**Configure List of Searchable Attributes**

On search forms you can now add and remove the attributes that are used to filter searches. Previously you could only add attributes to a search form. In this release a shuffle box is available, allowing you to configure the list of displayed attributes and to remove any unwanted attributes that are displayed by default.
Improvements to Document and URL Filtering
Oracle Text uses the AUTO_FILTER to convert documents and URL content into a
plain text format that is suitable for indexing. Filtering content unnecessarily can impact
the speed and efficiency of portal searches, so in this release Oracle Portal introduces
two special attributes for file- and URL- based item types: MIME Type and Character
Set. These new attributes enable portal users to classify portal content correctly when it
is uploaded to the portal and this streamlines the filter process. For example, you can
stop indexing binary data such as videos and MP3.

This new feature is useful in portals where the speed and efficiency of portal searches
are important or for portal that store/reference non-database character set
documentation.

Search Indexes Can Synchronize Automatically On Commit
If you are using Oracle Database 10g, you can now specify that Oracle Text indexes
synchronize automatically whenever portal objects are added, modified, or deleted. This
feature is useful for portal applications where newly added or altered content must be
searchable immediately.

WEBDAV - NEW FEATURES AND ENHANCEMENTS
In this release, the WebDAV experience is consistent with the Oracle Portal browser UI
experience.

Unpublished Items Hidden from View-Only Users
The following types of items are not displayed in a WebDAV client if the user has View
privileges only: unpublished, expired, deleted, and hidden items. This is consistent with
Oracle Portal behavior.

Control Display Behavior of Unpublished Items for Manage Users
Users with the Manage privilege can choose whether unpublished items are displayed in
a WebDAV client using a checkbox on the Items tab of the page group properties. If
the Display Unpublished, Expired, and Deleted Items In Edit Mode checkbox is selected, the
items are visible in WebDAV; if unchecked, then these items are hidden.

Pending Items
Pending items for a particular user are now displayed in WebDAV clients. The size of
the pending items are shown as 0 K.
Draft Mode Support
WebDAV supports the new draft mode feature. If draft mode is turned on, you can work on a file as long as you want before submitting it for approval. In addition, Oracle Drive provides a new menu option - Submit for Approval.

Extended Globalization Support
In this release, almost any character is permitted, whereas in previous releases only A-Z and 0-9 were supported.

Common Path-based URLs
The format of new Oracle Portal path-based URLs is the same as the WebDAV URL format and both formats are case sensitive.

ORACLE INSTANT PORTAL
Oracle Instant Portal provides an instant out-of-the-box portal application for secure publishing and content sharing, ideal for enterprises with a need to share information on their intranet or internal communications hub. By offering a subset of the Oracle Portal features with enhanced capabilities for ease of use, Oracle Instant Portal enables customers to share information quickly and easily without the effort of building a portal. Companies and departments with limited IT resources can get a portal up and running with little to no development effort. The layered UI provides context-sensitive toolbars and menus to manipulate the page and its content. Editing features include point-and-click portal branding and styling, page management, and content management.

Creating an Oracle Instant Portal
The Oracle Instant Portal portlet lets you create a simple portal based on a prebuilt corporate taxonomy. Customers requiring their own custom taxonomy can define their taxonomy/portal structure in an XML file and supply the location of this file. The portlet does the rest. Top-level tabs are created with a hierarchical child page structure, navigation, default style, layout, and search capability. A simple home page makes it easy
to summarize and highlight key information—news and announcements, newly added content and links to favourite pages and content for end users. All you need to do to set up your portal is to brand it, add content, and create users.

Creating Compelling Page Content
Oracle Instant Portal supports rich text content, uploaded images and files, and links to Web sites and email addresses. The rich text editing toolbar provides a WYSIWYG experience for basic font formatting, adding and manipulating tables and lists, and embedding images and links. Capabilities such as undo, redo, and cut/copy/paste are also provided. Users have the option of cutting and pasting HTML directly from other sources or manipulating the HTML in place for even greater control. The Home page features prebuilt portlets for displaying news and announcements, recently added content, and a personalized list of the user’s favorite content.

In-place Editing
To simplify the process of customizing and managing a portal, Oracle Instant Portal features an innovative in-place editing experience. It really is as simple as point and click to control all aspects of Oracle Instant Portal. A toggle switches users from view to edit mode. Users never leave the page—rather the editing experience comes to them in the form of a layered UI with in-context toolbars and menus to manipulate the page and its content. Editing features include point-and-click portal branding and styling, page management, content management, user management and access control.

User Management and Security
Oracle Instant Portal provides a very easy-to-understand and simple security system that allows managers to add users and secure portal content. Simply by selecting a set of predefined roles for a page, a manager can grant a user the appropriate level of security to be productive immediately. The simplified security model consists of viewers, contributors, and managers. Viewers can see content and also search for content.
Contributors can add content, but cannot alter the structure of the page or give other users access to the page. Managers can alter the structure and give others access.

![Manage Users dialog box](image)

**Figure 17: Manage Users dialog box**

**Instant Styling and Branding**
Point and click branding and styling allows a manager to brand a new portal by simply uploading the company logo, giving the portal a title, and selecting from 10 professionally designed styles. The branding and styling appears automatically on all existing pages and on any new pages that you create in the portal.
EMPOWER SOPHISTICATED AND HIGHLY PERFORMANT ARCHITECTURES

SEPARATION OF WEB AND APPLICATION TIERS
Oracle Portal no longer uses mod_plsql to make database calls. In this release, mod_plsql services are provided by Portal Services that run under OC4J_Portal. This change provides several benefits:

- As OC4J_Portal is a single process, Oracle Portal now provides a true connection pool on Unix platforms.
- The maximum number of concurrent connections to the database is reduced, resulting in better utilization of system resources and better cursor sharing.
- Collocation of Oracle HTTP Server/mod_plsql and OC4J_Portal is no longer required. This means that you can now configure OC4J farms to perform middle tier processing.
- The Oracle Portal architecture is highly secure - no protocol crosses a firewall boundary.

PERFORMANCE IMPROVEMENTS

Improved Web Cache Usage
In the new Oracle Portal architecture, session services are provided within OC4J_Portal rather than by the Parallel Page Engine (PPE). This change addresses several shortcomings in previous releases where the PPE serviced Oracle Web Cache. In addition, the session services now perform in-memory caching of session data and this greatly reduces disk contention and deprecates the need to manually move the session cache to a more performant file system.

Non-Public Documents Stored in Web Cache
In this release, all public and non-public documents stored in the Portal Repository are cached and invalidated within Oracle Web Cache. This speeds up document retrieval and ensures the version cached in Oracle Web Cache is always up-to-date.

System Level Caching
Oracle Portal pages and portlets can now be cached at the system-level.
Automatic Caching in Internet Explorer
Oracle Portal now supports the automatic caching feature available in Internet Explorer.

Page Portlets Cached Independently
In previous releases, Page portlets were treated differently from other portlets—every Page portlet was flattened directly into the page metadata of the containing page. Page portlets are now handled like all other portlets. A Page portlet can be cached independently and is invalidated only when the content of the Page portlet changes.

Partial Page Refresh
A portlet can be refreshed without refreshing the entire contents of the page. Partial page refreshing prevents unnecessary client-side requests and also improves the page viewing experience as pages no longer flash as they disappear and reappear.

Page Assembly Timeout
The Page Assembly Timeout option enables page designers to define a maximum page creation time. The option limits the amount of time the server delays page display while it assembles portlets. If a portlet is not assembled within the specified time it appears after the page is displayed, using partial page refreshing.

This option is useful for pages known to have potentially slow portlets, perhaps one that is running remotely on a slow server far away.

![Page Assembly Timeout](image)

Figure: Timeout for server-side portlet assembly

Declarative Portlet Caching
Page designers can now define or override the caching policy of any portlet.

![Portlet Caching Options](image)

Figure 19: Portlet caching options

IMPROVED INVALIDATION MODEL

Improved Invalidation Granularity
With the new Oracle Portal architecture, invalidations can be targeted at more areas of a portal page: a portlet, a document, a page portlet, and so on. This improved invalidation granularity results in a greater cache hit ratio and improves portal performance.

ECID Included in Invalidation Message
All invalidation messages now include an Execution Context Identifier (ECID). ECIDs allow an administrator to track a request through every Oracle Portal component.
Greater Use of Search Key Invalidation
Better use of search keys enables more targeted invalidations, and where necessary, expanded invalidation scope without having to invalidate the entire cache.

Improved Code Robustness
Improvements to invalidation code will ensure that invalidations occur in the most efficient manner possible.

IMPROVED PERFORMANCE LOGGING

New Top-level Web Cache Report
A new Web Cache report provides a performance overview of the entire request stack and allows administrators to drill down to individual components to see where time is being lost.

Application and Web Cache Log Files Provide All Input Data
In this release, administrators do not need to upload the error_log from Apache into the OWA_LOGGER table as all performance data is logged to application.log and webcache.log.

Reports for New Portal Components
There are specific reports tailored to the new elements of the Oracle Portal architecture. These new reports enable the portal administrator to monitor the performance of these elements.

New Layer-to-Layer Latency Reports
New latency reports show how much time is lost between layers. Portal administrator can use these reports to pinpoint communication bottlenecks between layers.

INSIDE/OUTSIDE CONFIGURATION
Oracle Portal supports inside/outside configuration. This means that Oracle Portal can be accessed both from within a company network (Intranet) and from external clients outside of the company firewall (Internet). For internet/Intranet configuration, Oracle Portal requires two logical middle tiers (for example, portal.mycompany.com and internal.mycompany.com), each residing on its own computer. Separating the logical middle tiers helps to isolate the content cached for Internet and Intranet users and enhances security, as users who navigate to one logical middle tier cannot access content served by the other logical middle tier. Each logical middle tier provides access to the same Oracle Portal schema in the Oracle Application Server Metadata Repository and the same Oracle Portal data.

For Internet/Intranet configuration, all Oracle Web Cache instances must be configured as an invalidation-only cache cluster. Invalidation-only clustering ensures that Oracle Web Cache maintains distinct caches for the two logical sites, while enabling cluster members to share invalidation messages (thereby ensuring that content edits are visible across the two logical sites).

SECURITY - NEW FEATURES AND ENHANCEMENTS

Secured Inside/Outside Support
As more employees access corporate resources from the Internet (from home, for example), the concern arises as to how to prevent unauthorized users from accessing content when the user is on the public network. Although a user may have sufficient privileges to view and act on the content, there is the risk of exposing the content to
those around them simply by their physical proximity (for example, customers at a cyber café may be looking over the user’s shoulder).

To protect sensitive content in Oracle Portal, this release introduces an extension to the Enterprise Inside/Outside Topology that allows certain content to be displayed only on known, secured networks. By default, Oracle Portal supports three business rules:

- Prevent All Page Editing and Personalization from “Outside”
- Prevent Edit/Personalization of specific pages from “Outside”
- Prevent External Viewing of Specific Pages.

This functionality may be extended to include other business rules.

With this new feature Oracle Portal can display different content, depending on whether the user is on the local area network, or accessing the portal from the Internet.

**Integrated Global Inactivity Timeout**

Although the Sign On Server (SSO) introduced the concept of global inactivity in Oracle Application Server 9.0.2, not all applications could take part in global inactivity determination. In this release, the Oracle Portal infrastructure is placed behind the SSO Oracle HTTP Server plug-in mod_osso. In this hybrid topology, the Oracle Portal runtime engine performs page authorization whilst idle time determination is calculated by mod_osso prior to forwarding the request to the portal back end. If a page request is forwarded after the defined period of inactivity, the user is redirected back to the SSO for re-authentication. The portal session remains active as the user may wish to keep the same active session. However, if the user logs on as with a different username, the current portal session is killed when the user re-authenticates and a new session is created; appropriate security is maintained.

**Simplified Self Provisioning**

In previous releases, the Account Info link let users define a default group, style, and home page. The only option users were allowed to change was their current password. All other attribute changes needed to be provisioned via the Directory Administration Services (DAS) console directly. In this release, the DAS interface has been extended to allow the user to specify any/all of their personal data, depending on what the administrator has exposed. Improvements to the account information page give users greater access to the functionality and they may also define a preferred home page for wireless environments.

**Login Portlet Enhancements**

If the self-registration feature is enabled, the Login portlet can display a link that allows users to register with the portal and create their own user accounts. In this release, there are several enhancements to the self-registration experience including an active verification message during sign-on and an immediate response if the registration fails because of Oracle Internet Directory (OID) policies.

**Intelligent Page Back Link**

The Page Back link is automatically replaced with a Logout link if access to the home page is revoked during the session.

**JavaScript Cross-Domain Issue Solved for LOVs**

In previous releases it was difficult to separate the Identity Management middle tier from the portal middle tier because the JavaScript security sandbox prevented the sharing of information across the two servers (particularly when using the List of Value (LOV) functionality to choose users/groups in your portal). Changing the JavaScript domain to a common domain was not an optimal solution so in this release, the call to the LOV has been modified such that the cross-domain issue no longer arises.
User Profile Information for WSRP Portlets
The WSRP specification allows a provider to indicate that their portlets will require certain pieces of user profile (attributes) information. If Oracle Portal determines that any portlet on a page requires further user information, the attributes are queried from Oracle Internet Directory (OID) and cached locally. In this way, each fetcher thread can retrieve the requested user attributes and forward them to the provider.

Miscellaneous Security Improvements
Other security improvements in this release include:

- An appropriate error page is displayed if the user executes an LOV (or any Directory Administration Services (DAS) link) if DAS is incorrectly configured.
- The Global Settings page includes a new option for indicating whether the Oracle Internet Directory (OID) LDAP listener port is SSL enabled.
- New option to “enforce” a Role based Access Control (RBAC) based user-provisioning interface by enabling/disabling privilege assignment.
- A privilege manager indicates to the user if the grantee to whom an ACL is being applied currently has a different privilege on the same object.

SSL Configuration Tool
The SSLConfigTool simplifies and automates SSL configuration for common Oracle Application Server and Oracle Portal configurations. The tool supports:

- Default installation configuration
- Automated configuration (with an XML file)
- Interactive configuration based on user input
- Dry run to test configuration prior to accepting changes
- Rollback of changes made to topology configuration

LIFECYCLE MANAGEMENT - NEW FEATURES AND ENHANCEMENTS

Logging Enhancements - Ignore Warnings
The Ignore Warnings option is always enabled and no longer available as a transport set option. Now, any warnings/failures that occur during pre-check are displayed when an import job is submitted to the background. The user can assess whether or not to import a transport set by looking at any warnings/failures listed in the logs.

Logging Enhancements - Advanced Logging
The Advanced Logging option is no longer available. Instead, administrators can view debug logs by clicking the link provided in the View Log screen.

Schema Validation Utility (SVU) Option
The SVU option is always enabled and no longer available as a transport set option. The SVU runs in clean-up mode automatically before every export and before and after every import.

Note: SVU logs are moved to debug logs and a high level message is displayed in the main logs indicating whether the SVU run is successful and whether any inconsistencies were found and fixed. Portal administrators can view debug logs for further details.

Providers - Warning Type
If a provider fails pre-check for any reason, the import does not stop. Instead, a warning status is cascaded to the offending object and the import process continues. If a portlet is deleted, suitable warnings are logged.
Script To Massage GUIDs across Upgraded Portal Instances
A new stand-alone SQL script (guidmasg.sql) has been introduced to massage the internal GUIDs of pages, perspectives, and categories so that export/import between two upgraded 9.0.4 or 10.1.2 portals (to 10.1.4) can proceed without internal identifier mismatch errors. There is no need to run this script when importing/exporting between 10.1.4 portals.

New Transport Set Status Indicators
In this release, there are two new transport set status indicators:

- Migration In Progress - displayed when a script is being run in export/import mode for generating or importing a dump file.
- Ready For Import - this is a status for transport sets that have been imported from one instance into another. This new status resolves confusion in previous releases concerning whether transport sets could be reused.

Exporting/Importing Page Movements in a Hierarchy
Page movements within a hierarchy can now be exported/imported. When a page is moved from one hierarchy to another, both the source and the target hierarchies are affected. When such a hierarchy is imported on a target, then the reparented object is considered upon overwrite and the original parent object is considered upon reuse.

The order of object import matters. For example, when a page is reparented with a new object on the source, then care is taken that upon merging, those new objects are created before child pages are updated on the target.

Only page movements are considered. Other hierarchical objects such as categories and perspectives are ignored.

Performance Improvements
The use of GUIDS has improved the performance of the import/export process. In addition, dependencies are no longer recalculated when objects are promoted or deleted in the manifest and this also improves performance.
CONCLUSION

With constantly changing business requirements, an enterprise demands the flexibility of a platform that allows them to respond readily to these requirements and provide a productive workplace to their employees, customers, and partners. Oracle Portal 10.1.4 is this platform. It allows you to fuse your business-critical Enterprise applications, your decision-making Business Intelligence applications, as well as Business Processes into one single workplace. At the same time, it offers powerful self-service content management and publishing capabilities to share information across communities and users. All these capabilities are based on a highly scalable, flexible, and performant architecture. Oracle Portal 10.1.4 takes Enterprise application infrastructures to a new level by delivering a product that is outstanding in the portal marketplace.