



# Sun Java System Portal Server 7.2 Technical Overview



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# Preface

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The *Sun Java System Portal Server 7.2 Technical Overview* provides an introduction to Sun Java™ System Portal Server concepts and components.

- “Who Should Use This Book” on page 7
- “How This Book Is Organized” on page 8
- “Related Books” on page 8
- “Typographic Conventions” on page 9
- “Searching Sun Product Documentation” on page 9
- “Third-Party Web Site References” on page 9

## Who Should Use This Book

This guide is intended for individuals who are engaged in portal design and planning or who are already working in production environments. These include the following individuals:

- System designers and architects
- Business managers
- Portal Server installers
- Portal Server administrators
- Engineers configuring Portal Server software

This guide assumes that you are already familiar with the following topics:

- General networking fundamentals
- Your operating system
- Sun Java System Directory Server
- Sun Java System Access Manager
- Your web container, such as Sun Java System Application Server or Glassfish™
- Security fundamentals relating to authentication and authorization
- Basic administrative procedures for the UNIX® platform
- LDAP (lightweight directory access protocol)
- Java Specification Request (JSR) 286: Portlet Specification 2.0
- Web Services for Remote Portlets (WSRP) 1.0 specification

## How This Book Is Organized

This guide is organized into the following chapters:

- [Chapter 1, “Introduction to Portal Server Software,”](#) provides a conceptual overview of key features of Portal Server.
- [Chapter 2, “Portal Server Deployment,”](#) describes concepts that are relevant to deployment decisions.
- [Chapter 3, “Portal Server Desktop,”](#) explains basic information about how the Desktop delivers content to end users.
- [Chapter 4, “Portal Server Community Features,”](#) describes community features that Portal Server provides for the Desktop to enhance the productivity of enterprises and their end users.
- [Chapter 5, “Portal Server Search Server,”](#) provides information about the Portal Server search server robot and taxonomy.
- [Chapter 6, “Portal Server Management,”](#) summarizes what options administrators have for managing Portal Server and how administrators use Access Manager to manage tasks that affect how Portal Server services are delivered.
- [Chapter 7, “Portal Server Management Console,”](#) describes the browser interface that Portal Server provides for portal administration and configuration tasks.
- [Chapter 8, “Portal Server Reports,”](#) describes how Portal Server provides information about end users, servers, and logging activities and presents details about log files.
- [Chapter 9, “Portal Server Performance Tuning,”](#) explains the functions of the Portal Server `perftune()` script.

## Related Books

The [docs.sun.com](http://docs.sun.com)<sup>SM</sup> web site enables you to access Sun technical documentation online. You can browse the archive or search for a specific book title or subject to obtain more detailed information about topics discussed in this guide.

For access to the documentation for this release of Portal Server, see:

<http://docs.sun.com/coll/1483.2>

For direct access to commonly referenced information in this release of Portal Server, see the *Sun Java System Portal Server 7.2 Documentation Center* on this site.

## Typographic Conventions

The following table describes the typographic changes that are used in this book.

TABLE P-1 Typographic Conventions

Typeface or Symbol	Meaning	Example
AaBbCc123	The names of commands, files, and directories, and onscreen computer output	Edit your <code>.login</code> file. Use <code>ls -a</code> to list all files. <code>machine_name% you have mail.</code>
<b>AaBbCc123</b>	What you type, contrasted with onscreen computer output	<code>machine_name% su</code> Password:
<i>aabbcc123</i>	Placeholder: replace with a real name or value	The command to remove a file is <i>rm filename</i> .
<i>AaBbCc123</i>	Book titles, new terms, and terms to be emphasized	Read Chapter 6 in the <i>User's Guide</i> . Perform a <i>patch analysis</i> . Do <i>not</i> save the file.

## Searching Sun Product Documentation

Besides searching Sun product documentation from the docs.sun.com web site, you can use a search engine by typing the following syntax in the search field:

**search-term site:docs.sun.com**

For example, to search for “broker,” type the following:

**broker site:docs.sun.com**

To include other Sun web sites in your search (for example, java.sun.com, www.sun.com, and developers.sun.com), use sun.com in place of docs.sun.com in the search field.

## Third-Party Web Site References

Third-party URLs are referenced in this document and provide additional, related information.

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## Documentation, Support, and Training

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- [Documentation](http://www.sun.com/documentation/) (<http://www.sun.com/documentation/>)
- [Support](http://www.sun.com/support/) (<http://www.sun.com/support/>)
- [Training](http://www.sun.com/training/) (<http://www.sun.com/training/>)

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# Introduction to Portal Server Software

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- “About Portal Server Software” on page 11
- “Portal Server Communities” on page 13
- “Portal Server Search Server” on page 13
- “Portal Server Content Management” on page 14
- “Portal Server Data Management” on page 15
- “Portal Server APIs” on page 15

## About Portal Server Software

Portal Server allows administrators and delegated administrators to build portal pages and to make them available to individuals throughout an enterprise according to user identities. The Desktop is the interface that the end user accesses to view the content for a portal site.

The product is a component of the Sun Java™ Enterprise System (Java ES), a software system that supports a wide range of enterprise computing needs.

Portal Server provides a framework and a set of software modules that offer the following:

- Security
- Mobility
- Identity-based content delivery
- Collaboration
- Business system integration

Portal Server's core framework supports the Java Specification Request (JSR) 168 Portlet Specification standard and the web services for remote portlets (WSRP) 1.0 specification for portal content. Portlet developers can use the Sun Java Studio Creator 2 application development tool or open standard tools to build portlets. Portal administrators can then leverage portlets, WSRP consumers, or additional portal tools for adding content to portal pages.

Portal Server is available in two editions:

- **Enterprise edition** is recommended for production environments. This edition provides the flexibility to create any supported deployment configuration. The enterprise edition supports Portal Server patch updates.
- **Developer edition** is recommended for product evaluations and for developers. The developer edition provides scripts that offer the following:
  - Easy startup and shutdown of all components and services associated with Portal Server
  - Fewer required user inputs
  - Simplified configuration processes

A Portal Server installation includes the following:

- Portal Server infrastructure (components are installed separately)
  - Sun Java System Directory Server 6.0
  - A web container, such as Sun Java System Application Server 9.1 (enterprise and developer editions) or GlassFish™ (enterprise edition)
  - Sun Java System Access Manager 7.1 for identity and user management, including authentication, authorization, and federation
- Sun Portal Server 7.2, including Sun Java System Portal Server Secure Remote Access
  - A portal server
  - A search server
  - A wiki based on JSPWiki.org
  - A management console
  - Pre-installed portlets and content providers
  - Sample enterprise portal and Desktop
- Java DB 10.3, Sun's supported distribution of the open source Apache Derby database, to support collaboration, or another supported database, such as one from Oracle, Inc.
- Java SDK 5 and 1.6.0\_05, for applications development
- Common Agent Container 2.2, a stand-alone program that implements a container for Java management applications

Portal Server works with previously installed software components as long as the software is an appropriate version. For more information about product requirements, see “Checking Hardware and Software Requirements Before Installing Portal Server 7.2” in *Sun Java System Portal Server 7.2 Installation and Configuration Guide*.

## Portal Server Communities

Portal Server provides community services for end users. End users can use communities to work jointly with each other and the entire community.

A portal *community* consists of the following:

- An owner who sets up the community
- A portal page available to community members
- A list of members who subscribe to the community
- A set of services (usually portlets) available to the end users
- A set of data that the community uses

End users define and set up communities. Community members use communities to interact with others in the community and to manage content and business processes.

For more information about communities and collaboration, see [Chapter 4, “Portal Server Community Features.”](#)

## Portal Server Search Server

Portal Server search server provides interfaces that allow end users to locate resources in a database. The search server provides the following:

- A robot to discover, convert, and summarize document resources
- An end-user interface, provided by the Desktop, using JSP providers
- Configuration tools provided by the Portal Server management console
- A command-line interface for system management

The search server supports *federated search*, a single search to multiple search engines, including the following:

- Google
- LDAP directory (using Java Naming and Directory Interface™ API, or J.N.D.I. API)
- Relational database management system or RDBMS (using Java DataBase Connectivity software or JDBC™ API)
- Remote resource description messages (RDM) interface

Federated search results are displayed on a single page.

Administrators use the Portal Server management console to perform search server administrative and configuration tasks. The Portal Server command-line interface provides `psadmin` subcommands for managing the search server.

For more information about the search server, see [Chapter 5, “Portal Server Search Server”](#)

# Portal Server Content Management

Portal Server content management system (CMS) provides a hierarchical content store that supports structured and unstructured content, images, content templates, and versions. The content management system uses the JSR 170: Content Repository for Java Technology API specification, which provides a standard way for server-based applications to interact with content repositories.

How Portal Server users can use the content management system is based on their roles.

Portal Server **administrators** can use content management to create, edit, delete, and lock the following:

- Content categories
- Content versions
- Organize content into different categories for ease of management

Portal Server **developers** can use content management to do the following:

- Use CMS tag libraries and API to interactive with the content management system
- Use Portal Pack for NetBeans™ IDE

Portal Server **end users** can use content management to perform the following tasks:

- Create and edit content
- Lock content versions
- Create, based on their roles, and assign templates to content
- Publish content by completing user tasks that are predefined in workflow definitions (Simple API for Workflow and Sun Java Composite Application Platform Suite must be available)
- Search for content

The content management systems provides portlets that do the following:

- Manage categories and content types with templates
- Manage contents for a content type

Portal Server provides sample CMS portlets that illustrate the use of OCM (object content mapping) functions for managing unstructured content, for managing structured content with predefined metadata, and for creating custom content types and contents. The samples available include the following portlets:

- Document Management Portlet that showcases how unstructured content is managed
- Article Management Portlet that showcases how structured content is managed

The sample CMS portlets use the Apache JackRabbit implementation of the JSR 170 specification.

# Portal Server Data Management

Portal Server uses the following databases:

- **LDAP directory** stores data for directory and authentication services. Portal Server administrators use the management console and the command-line interface to manage the following:
  - Portal-specific user and organization information
  - WSRP data
  - Configuration data for portals and instances
- **Search server database** stores data about the following:
  - Resource descriptors data
  - Robot configuration data
  - Taxonomy data
  - Discussions data
- **Relational database** stores information about the following:
  - Communities
  - File sharing
  - Surveys
  - Wikis

Two relational databases are available:

- JavaDB - Sun's supported distribution of the open source Apache Derby and installed by default during Portal Server installation
- Oracle - Must be installed

Administrators can create JavaDB and Oracle instances on dedicated hosts.

- **Java content repository** stores the following information about content that is created using the content creation portlets:
  - Content versions
  - Templates
  - Categories
  - Metadata

## Portal Server APIs

Portal Server provides programming tools that enable developers to create custom portlets. These include the following:

- Provider API for extending the base classes to create new providers
- Desktop API for creating new providers for delivering portal content

- Portlet API for implementing Java Specification Request (JSR) 286: Portlet Specification 2.0
- JSF Portlet Bridge 1.2 for running JavaServer™ Faces-based applications as portlets in a web container that supports JSF 1.2
- Struts Portlet Bridge for developing Java 2 Platform, Enterprise Edition (J2EE™) applications
- Simple API for Workflow for writing task management portlets in conjunction with Sun Java Composite Application Platform Suite human workflow feature
- Content Management API to interact with the content management system and write custom portlets for using content in the repository
- Administration portlet for developing administration portlets that enable Desktop functions of a portal to be managed from the Desktop instead of from the management console
- Authentication API for changing the appearance and behavior of the authentication screen, enabling authentication modules, and adding custom authentication modules
- Search APIs
  - Search API for creating and modifying search objects in C
  - C API for customizing the way the robot crawls URLs and generates resource descriptions
  - Java APIs for searching the database, for submitting data, and for manipulating search objects such as resource descriptions
  - Search provider tag library and helper beans to create custom search JSPs
  - Resource Description Manager API for enabling two processes to exchange resource descriptions across a network

Programmers can use other tools to create custom portlets. The ROME library (not a Portal Server tool) for parsing, generating and publishing RSS (rich site summary) and Atom feeds are examples.

Portal Server provides a sample portlet to illustrate portlet functions and facilitate the design of custom portlets. For more information about Portal Server programming tools, see *Sun Java System Portal Server 7.2 Developer's Guide*

# Portal Server Deployment

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Portal Server enables enterprises to design a variety of deployment scenarios. This section provides the following topics:

- “Portal Server Deployment Planning” on page 17
- “Open and Secure Intranet Access” on page 17
- “Multiple Portals” on page 18
- “Single Sign-On Authentication” on page 19
- “Portal Server and Back-end Systems” on page 19

## Portal Server Deployment Planning

Each enterprise assesses its own needs and plans its own deployment of Sun Java Enterprise System. The optimal deployment for each enterprise depends on a variety of factors, including:

- The types of applications that Java Enterprise System is supporting
- The number of users
- What hardware is available

## Open and Secure Intranet Access

Two options are available for providing end users access to the intranet that contains a portal:

- An open Portal Server that runs using HTTP or HTTP SSL. This option provides end users access only to the portal and the resources made available directly through the portal.
- A secure Portal Server that runs with the Secure Remote Access server. This option provides end users with secure remote access to the following:
  - Intranet file systems
  - Applications
  - Web sites

- The portal and resources made available directly through the portal

Only the IP address of the Gateway is published to the Internet.

## Multiple Portals

Portal Server supports multiple portals using a single user repository. Administrators can design, deploy, and administer each portal independently. Setting up multiple portals for single end users allows administrators to do the following:

- Deploy multiple portals and Portal Server instances on one or more hosts
- Use Access Manager software to manage users for all portals
- Provide different content for different portals
- Offer single sign-on (SSO) between portals
- Enable end users to personalize their Desktops for each portal

To manage end users, portal administrators use tools provided by Access Manager. End-user data in LDAP directories do not need to be synchronized with any other repository.

A *portal* is a collection of one or more Portal Server instances that deliver the same content and are mapped to a single URL. The content and services delivered by a portal are common to all of its instances.

A *Portal Server instance* is a web application deployed into a web container, using a particular portal context URI and serving requests on a specific network port. Each Portal Server instance is associated with a single portal.

*Multiple portals* share the same user repository, or Access Manager. These portals can be deployed on one host or on two or more hosts. Using the same user ID and the same session, a single end user can access more than one portal.

## Single Sign-On Authentication

Single sign-on (SSO) enables end users to enter a password or other credentials once to gain authenticated access to various *resource servers*, which supply applications or services. Portal Server provides two ways of providing SSO:

- **Access Manager** - Within Java Enterprise System, the Access Manager product manages SSO. Portal Server is one of the resource servers for which SSO is enabled.

Once an end user is authenticated with Access Manager, he can access Portal Server and any other resource server that Access Manager controls.

- **SSO Adapter service** - To deliver content from a third-party server that is not integrated with Access Manager, Portal Server provides an SSO Adapter service. Services accessed using SSO Adapter can include mail, calendar, address book, WSRP portlets, and data web services.

The SSO Adapter service:

- Establishes a connection to third-party server back-end systems
- Stores configuration data and user credentials that Portal Server needs to access these services on behalf of the end user
- Defines two levels of data:
  - *SSO Adapter template* defines a class of connections to be made available to end users. Many end users use a single template. Because the template defines the same data values, including default values and what values an end user can edit, for all users, SSO Adapter templates are defined at a global service level.
  - *SSO Adapter configuration* provides data values that are specific to an end user. A configuration references a template and takes data values from the template for properties that end users cannot change. End users can change user-editable properties of an SSO Adapter configuration. Changes to these properties apply only to the individual end user who makes the changes.

## Portal Server and Back-end Systems

A complete Portal Server deployment may include integrating the portal with back-end systems. A portal is typically integrated with the following types of back-end systems:

- Mail server
- Calendar server
- Instant messaging server
- Composite application server
- Content or document management server
- Blog server
- RSS (really simple syndication) server

- Google Gadgets server
- Web server
- Enterprise resource planning system
- Customer relationship management (CRM) system
- Point of sale (POS) system
- Human resources benefits system
- Sales force automation system
- Remote desktop system
- Database system
- Other portals

## Portal Server Desktop

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This topic describes the Desktop and how it delivers content to end users. This topic provides the following sections:

- “About the Portal Server Desktop” on page 21
- “Delivering Portal Content” on page 22
- “Designing Portal Desktops” on page 23
- “Enabling End-User Personalization” on page 24

### About the Portal Server Desktop

Portal Server aggregates and presents content to the end user. The primary end-user interface for Portal Server is the *Desktop*, which end users access by using an HTML browser.

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**Note** – End users can access and use the Desktop by using a mobile device, if they are configured to do so. For information about the mobile Desktop, see Chapter 12, “Managing Portal Server Mobile Access,” in *Sun Java System Portal Server 7.2 Administration Guide*.

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Portal Server supports programmable modules that transform data into HTML (hypertext markup language) that the Desktop displays. For example, Portal Server converts XML (extensible markup language) data and RSS (really simple syndication) into HTML, and JavaServer Pages™ (JSP™) files are executed to HTML. Content that is delivered can be static information or an application.

Administrators use the Portal Server management console and the command-line interface to manage the Desktop.

# Delivering Portal Content

The Desktop displays a web page that arranges portal content in rows and columns. Portal Server uses two methods to deliver content to the Desktop:

- **Channels** are a specialized content areas that occupy small windows within the page. A channel consists of the following elements:
  - A provider object
  - Configuration files
  - Data files, such as XML files and HTML templates, that support the channel

Examples of channels are the following:

- **News channels** display links to online news and information
- **Bookmarks channels** display locations of web sites and enables easy access to them
- **Container channels** assemble content from two or more channels. Often container channels are simply called *containers*. Portal Server supports `AJAXTableContainerProvider`, which provides rich user interaction with features such as loading and updating channels asynchronously and drag-and-drop positioning of channels.

Examples of containers are the following:

- **Table containers** arrange channels into rows and columns.
- **Tab containers** arrange channels (typically table container channels) with a tab navigation bar across the top, so that the end user views each channel one at a time.

Portal Server supports the following kinds of channels:

- Standard Java portlets use the following specifications to allow portlets to run in multiple portal environments:
  - Portlet Specification 1.0 defined by JSR 168
  - Portlet Specification 2.0 defined by JSR 268
- Providers use proprietary interfaces. For example:
  - JSP providers for compiling and executing JSP files
  - XML providers for translating XML files
- Remote portlets use the Web Services for Remote Portlets (WSRP) 1.0 specification, a web services protocol for integrating JSR 168 portlets from remote sources.

# Designing Portal Desktops

Administrators use the Portal Server Desktop Design Tool, which is available on the management console, to construct and manage Desktops for portals. The tool uses a wireframe modeling technique to allow administrators to view the Desktop tab and channel layout structure and what channels are available in each tab.

The tool enables administrators to work with the following:

- Layouts, which control how channels are arranged on a Desktop page
- Themes, which control the general appearance and user interface features of channels and containers on a portal's Desktop

Administrators can use the tool to create and edit any Desktop that uses a parent container based on any of the following:

- JSPTabContainerProvider
- JSPTableContainerProvider
- AJAXTableContainer

The Desktop Design Tool does not support customized containers that are not based on one of these providers or containers.

Administrators use the Desktop Design Tool to work on new or existing Desktops:

- **New Desktops** – The Desktop Design Tool performs the following functions:
  - Identifies that the selected DN has a new organization
  - Assigns desktop service attributes to the Desktop
  - Sets up a new parent container and the first tab for the Desktop
  - Sets up and displays an initial Desktop tab
- **Existing Desktops** – The Desktop Design Tool displays the Desktop's tabs

Administrators can perform the following tasks to control to control and arrange elements on a Desktop:

- Edit channel and container properties
- Create, modify or remove tabs and pages from the Desktop
- Change the order of tab positions
- Add channels to or remove channels from the Desktop
- Move channels left and right or up and down

The Desktop Design Tool uses *themes*, which are based on cascading style sheets (CSS) properties, to define the general appearance and operation of the elements on a Desktop. Administrators can perform the following tasks to control the appearance of a Desktop:

- Select a theme from a list of deployed themes and assign the theme to a specific portal Desktop
- Delete a theme assigned to a specific portal Desktop
- Change theme name and menu control type for a specific portal Desktop
- Download theme archive (.skin) files to use the View Designer for Java™ System Portal Server to modify the theme's CSS properties
- Upload theme archive (.skin) files and deploy them to specific portal Desktops

## Enabling End-User Personalization

Portal administrators can enable end users to personalize a portal Desktop. Portal Server *personalization* occurs when individual end users change their own Desktops.

Other ways to change the Desktop affect more than one end user and thus are not personalization. These methods include the following:

- *Custom content delivery* is a portal design activity that affects all end users authorized to use a specific Desktop. The Desktop Design Tool, for example, enables administrators to establish Desktop properties and functions.
- *Role-based content delivery using Access Manager* allows Desktop access based on identities of specific organizations, suborganizations, roles, and individuals.
- *Automatic content delivery* provides content based on what the system detects about end users. IP addresses, for example, can indicate end-user locations and preferred languages. In some contexts, automatic content delivery is defined as personalization.

To support automatic content delivery in Portal Server, developing a custom `ContainerProvider` is required.

Examples of Desktop personalization that administrators can enable end users to control from the Desktop include the following:

- Editing preferences for pages, tabs, and channels
- Adding or removing channels
- Changing channel positions
- Changing column layout
- Selecting a Desktop theme
- Changing end-user information

# Portal Server Community Features

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This chapter describes online community features that Portal Server provides for the Desktop to enhance the productivity of enterprises and their employees.

This chapter provides the following sections:

- “Portal Server Community Roles” on page 25
- “Services for End-User Portal Communities” on page 26
- “Portal Server Community Portlets” on page 27
- “Managing Portal Server Communities” on page 28

## Portal Server Community Roles

Portal Server enables end users to set up and participate in online communities, which are associations of members and services. Communities provide services and content on a long-term basis or a short-term basis. Three end-user roles are defined:

- **Owner** - The community member who starts and removes a community. A community owner can perform the following tasks:
  - Delete members
  - Transfer community ownership to another member
  - Delete the community
  - Use member privileges
- **Member** - An end user who belongs to a community and interacts with a community's services and content. A community member has the following privileges:
  - View general information about the community
  - View members who subscribe to the community
  - Participate in community activities
- **Visitor** - An end user (and nonmember) who views a community's services but who does not interact with the services.

## Services for End-User Portal Communities

Portal Server provides the following community services:

- **Wiki** - A wiki container and portlets enable a community to provide an interactive site for community-related content. Community members can edit existing pages and files, and community members can add new pages and files.
- **Discussions** - Community discussions allow members to create, read, rate, reply to, search, and subscribe to online exchanges by community members.
- **Blogs** - A blog portlet enables community members to publish weblogs. Community members can manage and post and manage blog entries. This portlet uses the Apache Roller blog server.
- **Surveys and Polls** - Community members can respond to surveys and view the results of surveys and polls. Question formats are multiple choice, yes or no, and open-ended.
- **Searches** - Community members can search for communities and content across all public communities and any private communities that they belong to.
- **Events and Tasks** - Community members can use a community calendar built on Sun™ Calendar Server software to track and edit community projects, tasks, and events.
- **File Sharing** - Community members can share files, create folders, and upload and download documents.
- **Subscriptions** - Community members can subscribe to community discussion channels and save searches from community search channels.

The community services assign system resources and privileges to communities and their members by adding services as portlets. For example, if a community provides a calendar portlet, an account for the community is provisioned in the calendar server.

Portal Server provides a set of templates for community services. The templates:

- Control which services or channels a community provides
- Control how the services are arranged on the Desktop
- Control individual layouts and services available for the community roles of owner, member, and visitor
- Consist of a properties file, an image, and one or more display profile documents

For more information, see Chapter 5, “Community Templates,” in *Sun Java System Portal Server 7.2 Enterprise Sample Guide*.

The portal administrator uses the command-line interface to manage the templates. For information, see the Chapter 9, “Managing a Portal Server Community,” in *Sun Java System Portal Server 7.2 Administration Guide*.

## Portal Server Community Portlets

Portal Server provides portlets for communities and community members. This topic describes two of these portlets:

- “Portal Server Wiki Portlet” on page 27
- “Portal Server Blog Portlet” on page 27

### Portal Server Wiki Portlet

Portal Server provides a wiki portlet that uses JSPWiki, built around standard J2EE™ technology. The portlet enables portal users to participate in communities and to create collaborative content.

The portlet provides a community with an initial set of default pages and allows communities to do the following:

- Create its own wiki
- Link between wikis
- Tie wiki permissions to community membership

Administrators can add channels for community content and services to a wiki community. The sample enterprise portal uses a default wiki. For more information, see the *Sun Java System Portal Server 7.2 Enterprise Sample Guide*.

### Portal Server Blog Portlet

Portal Server provides a blog portlet that uses the Atom Publishing Protocol (APP), the standard protocol for managing weblog posts. The portlet enables portal users to publish weblogs from a portal page. Community members can perform the following tasks:

- Create weblogs
- Create, edit, and delete blog entries
- Create blog server user accounts

The blog portlet provides a simplified user interface. For more information, see *Technical Note: Managing Sun Java System Portal Server 7.1 Update 1 Blog Portlet*.

## Managing Portal Server Communities

Portal Server administrators can perform community management tasks using one of the following methods:

- Management console

For more information, see [Chapter 7, “Portal Server Management Console.”](#)

- Command-line interface

For information about the command-line interface, see *Technical Note: Managing Sun Java System Portal Server 7.1 Update 1 Communities*.

- An administration portlet on the Desktop, if a portlet has been set up

For more information, see [“Portal Server Administration Tag Library and Portlets” on page 33.](#)

# Portal Server Search Server

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This chapter describes the Portal Server search server. The following sections are provided:

- “Portal Server Search Server Robot” on page 29
- “Search Server Database Taxonomy” on page 30

## Portal Server Search Server Robot

The Portal Server search server robot discovers, converts, and summarizes document resources that are available to end users. A *robot* is a program that:

- Extracts and follows links to resources (also called *crawling* or *enumeration*)
- Describes those resources
- Puts resource descriptions in the database (also called *indexing* or *generation*)

The search server provides utilities to control robot actions. Administrators use the Portal Server management console to run the utilities. The ways that portal administrators can control robot processes include the following:

- When the robot runs by starting, stopping, and scheduling the robot
- Where the robot looks for resources by defining the sites the robot visits
- How aggressively the robot searches by defining the crawling attributes
- What types of resources the robot indexes by defining filters

Portal Server provides a scheduling utility for running the search server robot. Administrators can set multiple start and stop times.

## Search Server Database Taxonomy

Administrators set up categories to enable end users to perform the following functions:

- Type direct queries to search the database
- Browse the database contents

A hierarchy of categories is called a *taxonomy*. Categorizing database resources is similar to creating a list of contents for the database. Administrators use the Portal Server management console to manage taxonomy.

# Portal Server Management

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The chapter summarizes how administrators can perform administrative tasks required for managing the Portal Server. Administrators use Portal Server and Access Manager to manage tasks that affect how Portal Server services are delivered.

This chapter provides the following sections:

- “Portal Server Management Options” on page 31
- “Access Manager Functions” on page 34
- “End-User Provisioning for Portal Server Communities” on page 36

## Portal Server Management Options

Administrators can use a browser interface, a command-line interface, or the Desktop to manage Portal Server. This topic provides the following sections:

- “Portal Server Management Console” on page 31
- “Portal Server Delegated Administration” on page 32
- “Portal Server Administration Tag Library and Portlets” on page 33
- “Portal Server Command-Line Interface” on page 34

## Portal Server Management Console

Portal Server provides a browser interface called the *management console*. The management console allows portal administrators to do the following:

- Manage multiple portals and their operations
- Set up and manage containers and channels
- Delegate management of Portal Server resources to non-administrators
- Customize the Desktop for end users

- Enable end users to personalize the Desktop
- Manage multiple search servers
- Track both end-user and system activities
  - End-user clicks on the Desktop
  - Configuration settings, statistics about channel actions, and statistics about Desktop requests and responses
  - Runtime information about the Portal Server and the Secure Remote Access server

For more information about the management console, see [Chapter 7, “Portal Server Management Console.”](#)

## Portal Server Delegated Administration

Portal Server allows super administrators to assign access privileges for Portal Server resources to *delegated administrators*. In complex enterprises, granting delegated administration status to decentralize the administrative function can improve portal management.

Administrators delegate privileges to *subjects*, which can be users, roles, or organizations. If the subject is a user, that user has access privileges. If the subject is a role, all users in that role have access privileges. If the subject is an organization, all the users in that organization have access privileges.

A Portal Server *resource* is a component, entity, or object in `PortalDomain`, a Portal Server installation that the portal administrator can manage, monitor and configure. `PortalDomain` resources include the following:

- Portal
  - Desktop
  - Web Services for Remote Portlet consumer
  - Web Services for Remote Portlet producer
  - Subscriptions
  - Communities
  - User behavior tracking
  - Logging
  - Monitoring
- Search server
- Secure Remote Access server
- SSO Adapter

The delegated administrator's privileges determine which PortalDomain resources that the delegated administrator can manage. These options for privileges are available:

- Manage all aspects of a portal
- Manage some aspects of any Portal Server resource
- Manage the display profiles for some other roles

Both role DNs and user DNs can use these options to manage assigned resources:

- Management console – The Portal Server resources assigned to the delegated administrator are available to the delegated administrator. For example, if the delegated administrator is granted Search server privileges, the management console provides the Search Server tab on the delegated administrator's home page. Other functions are unavailable.
- Desktop – An Admin tab on the delegated administrator's Desktop is available for managing the Portal Server resources assigned to the delegated administrator.

## Portal Server Administration Tag Library and Portlets

Portal Server provides an administration tag library for developing administration portlets that enable Desktop functions of a portal to be managed from the Desktop instead of from the management console. The tag library allows administrators to do the following:

- Modify out-of-the-box administration portlets
- Develop portlets with new administration functionality
- Support provider management tasks and portlet and WSRP management tasks
- Create and administer channels that are based on JSPPProvider
- Write custom administration portlets with a custom user interface
- Write administrative portlets to manage any custom channel

Super administrators can delegate Desktop administration functions by giving non-administrators access to the Admin tab on the Desktop. The Admin tab includes the following portlets:

- Tab administration portlets
  - Create Tab Admin
  - Delete Tab Admin
  - Tab Configuration Admin
- Channel administration portlets
  - Create Channel Admin
  - Delete Channel Admin
  - URL Scraper Admin
  - Create WSRP Channel Admin

Portal Server provides a sample set of administration portlets that can be used to design a basic Desktop for delegated administrators. For more information, see Chapter 22, “Using the Portal Server Delegated Administration Tag Library,” in *Sun Java System Portal Server 7.2 Administration Guide*.

## Portal Server Command-Line Interface

Portal Server software provides a command-line interface (CLI). The CLI allows portal administrators to do the following:

- Perform administrative tasks by typing commands using the keyboard
- Automate regularly recurring management tasks by incorporating them into scripts

The CLI offers a number of `psadmin` subcommands for managing portal tasks. These include subcommands for:

- Managing multiple portals and portal instances
- Deploying portal and portlet WAR files
- Managing the search server
- Managing communities
- Managing Secure Remote Access server
- Managing monitoring
- Managing portal logging
- Managing resource control access privileges given to delegated administrators

Most management subcommands are written specifically to mimic functions in the browser interface. For management functions that have no special commands, administrators use standard commands for UNIX software.

For information about `psadmin` subcommands, see the *Sun Java System Portal Server 7.2 Command-Line Reference*.

## Access Manager Functions

Portal Server administrators use the Sun Java™ System Access Manager administrative console to manage tasks related to identity. This section provides the following topics:

- [“Portal Server User Identity” on page 35](#)
- [“Identity-Specific Portal Content” on page 35](#)
- [“Portal Server Login Accounts” on page 35](#)

## Portal Server User Identity

Tasks related to identity of Portal Server users are provided by Access Manager, not Portal Server. Administrators use the Access Manager administrative console to perform the following tasks:

- Manage identity-based objects, including users, roles, and organizations to administer and assign appropriate access to users according to roles they have within organizations or suborganizations
- Delegate administrative functions to specific end users by authorizing the end users to administer organizations, suborganizations, users, policy, roles, and channels
- Reset administrator passwords, in the same way other passwords are changed

## Identity-Specific Portal Content

Access Manager allows portal administrators to deliver portal content that is based on identities of specific end users. Administrators can define portal pages, attributes and access policies so that portal content is available only to the following identities:

- A specific organization
- A specific suborganization
- A role
- An individual

Individual end users who access the portal see a combined view of all portal pages.

## Portal Server Login Accounts

A default administrator's account for logging in to the Portal Server management console is set up during Portal Server installation.

Administrators can set up additional login accounts for other portal administrators. Each new user must have the following:

- A valid user entry in the Access Manager console
- A Top-level Admin Role assignment

## End-User Provisioning for Portal Server Communities

The Portal Server community subscription service allows community members to manage their own access to community data repositories. This allows end users to do the following:

- Join or subscribe to communities
- Subscribe to discussions provided on community discussion channels
- Save searches from community search channels

An end user who is a community owner can invite other end users to join the community and can deny membership to end users, if a community is private.

# Portal Server Management Console

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This chapter describes the Portal Server *management console*, a browser interface that simplifies a variety of portal administration and configuration tasks. This chapter provides the following sections:

- [“About the Portal Server Management Console” on page 37](#)
- [“About the Management Console User Interface” on page 38](#)
- [“About Portal Server Management Console Security Features” on page 42](#)

## About the Portal Server Management Console

The Portal Server management console is a Java™ 2 Platform, Enterprise Edition (J2EE™) application that:

- Is accessible through a web browser
- Logs messages to a debug log according to configured debug level
- Logs setting changes that include name and value pairs
- Provides online help with step-by-step instructions for performing management tasks

The Portal Server management console enables portal administrators to manage a variety of functions, including tasks for the following:

- Multiple portals and Portal Server instances
- The Portal Server Desktop
- Search server
- Secure Remote Access server
- Single Sign-On (SSO) adapters

The management console also enables portal administrators to perform the following activities:

- Track end-user behavior to identify how end users interact with various Portal Server components
- Track end-user behavior to help diagnose, troubleshoot, and analyze issues related to end-user activities
- Obtain runtime statistics about Portal Server's Desktop and Secure Remote Access components
- Log information about Portal Server applications

## About the Management Console User Interface

The Portal Server management console's user interface arranges administration functions into pages. Across the top of each page is a tab strip. The tabs present pages that group management functions in an organized manner. To navigate from page to page, administrators click a tab.

- [“Common Tasks Tab” on page 38](#)
- [“Portals Tab” on page 39](#)
- [“Search Servers Tab” on page 39](#)
- [“Secure Remote Access Tab” on page 40](#)
- [“SSO Adapter Tab” on page 40](#)
- [“Delegation Tab” on page 41](#)
- [“Interactive Wizards” on page 41](#)

### Common Tasks Tab

The Portal Server management console's Common Tasks page displays a series of links. The links are shortcuts that provide direct access to tasks that portal administrators frequently perform. When administrators log on to the management console, the Common Tasks tab is active.

The tasks on the Common Tasks page are organized into four categories:

- Configuration
- Reports and Logs
- Maintenance
- Documentation

Selecting a task provides direct access to the page or wizard for that task. For example, to update logger settings, click the Logger Settings link under the Maintenance heading.

## Portals Tab

The Portal Server management console's Portals page lists the deployed portals by their portal IDs. This page allows administrators to perform the following functions:

- Create new portals
- Remove portals
- Import and export portal resources

In addition, administrators can click the name of a specific portal to access pages for managing that portal. The pages allow administrators to perform the following functions:

- Manage containers, channels, and portlets
- Manage the layout and appearance of the Desktop
- Manage the display profile
- Create and remove portal instances
- Manage web services for remote portlets (WSRP)
- Edit subscription component attributes and schedule start and stop times for the subscription profiler
- Create and manage communities
- Create reports that track user behavior
- View portal log files
- Configure and generate reports about how the Desktop and Secure Remote Access server components perform

During Portal Server installation, the portal1 default portal is set up and listed on the Portals page.

## Search Servers Tab

The Portal Server management console's Search Servers page allows portal administrators to manage the search server. This page allows administrators to perform the following functions:

- Set up a search server
- Remove a search server
- View basic identifying information about each search server

In addition, administrators can click the name of a specific search server to access pages for managing it. The pages allow administrators to perform the following functions:

- View configuration details for a search server
- Configure and control a search server
- View the status of a search server robot and manage robot behavior

- Manage a search server databases, and on nonfederated databases, re-index, purge, analyze, manage, and expire resource descriptions
- View and manage search server taxonomy
- Manage SharePoint search services
  - Create and delete SharePoint sites
  - Configure and control SharePoint services
- Schedule robot start and stop times
- View log files and reports on the robot, user searches, and excluded URLs

## Secure Remote Access Tab

The Portal Server management console's Secure Remote Access page allows administrators to manage how remote users securely access a portal and its services over the Internet. This page allows administrators to perform the following functions:

- Create, maintain, and remove Gateway profiles
- Specify options and rules for providing secure access to applications that run over insecure networks
- Define rules preferences for giving users access to remote file systems and directories
- Control user access to specific URLs through the Gateway
- Manage how client machines read and modify proxy settings in proxy autoconfiguration (PAC) files
- View attributes of resources
- Start and stop Secure Remote Access proxy instances, and view details about the instances
- Copy an existing rewriter ruleset to a new location, or obtain a new ruleset from another location

## SSO Adapter Tab

The Portal Server management console's SSO Adapters page allows administrators to manage how end users gain authenticated access to applications after signing in once. This page allows administrators to perform the following functions:

- View a list of SSO Adapter configurations for the current location distinguished name (DN)
- Add or remove users who have permission to use the SSO adapter without authentication
- Create, view, and remove SSO adapter templates

In addition, administrators can click the name of a specific meta-adapter that is set up to access pages for managing that portal. The pages allow administrators to do the following:

- Add and remove meta-adapter attributes
- Add and remove adapter attributes
- Change attributes of adapters and the meta-adapter

## Delegation Tab

The Portal Server management console's Delegation page allows super administrators to set up delegated administrators for various portal components. This tab is not visible when administrators who are not super administrators log in to the management console.

The Delegation page allows administrators to perform the following functions:

- Assign delegated administrators by distinguished name (DN):
  - Org DN
  - Role DN
  - User DN
- Grant access control privileges to delegated administrators for an entire `PortalDomain` or for specific resources within `PortalDomain`. Examples of Portal Server resources are the following:
  - A Portal Server domain
  - A portal, or portal site
  - A Portal Server instance

## Interactive Wizards

The management console provides easy-to-use interactive utilities or *wizards* for tasks that require more than one step. The wizards:

- Guide administrators through the sequence of steps for a task
- Collect information about a task
- Ask administrators to verify task information before the task is performed

Examples of Portal Server wizards are the following:

- New Instance wizard for creating a new portal instance
- New Channel and Container wizard for creating new channels and containers
- Deploy Portlet wizard for implementing portlets on selected DN nodes

## About Portal Server Management Console Security Features

The Portal Server management console performs the following actions to provide security:

- Activates session timeouts for idle sessions
- Validates user sessions for every request
- Configures secure HTTP connections
- Masks display of user log on passwords

# Portal Server Reports

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This chapter describes how Portal Server provides information about end-user behavior, servers, and log activities.

This chapter provides the following sections:

- [“Tracking Portal User Behavior” on page 43](#)
- [“Monitoring Portal Server Performance” on page 44](#)
- [“Logging Portal Server Data” on page 44](#)

## Tracking Portal User Behavior

Administrators can diagnose, troubleshoot, and analyze issues related to end-user activities and end-user interaction with various portal system components. User behavior tracking (UBT) follows end-user clicks on the Desktop and logs the information in external data stores. The Portal Server user behavior tracking API is an implementation of the JSR 47: Logging API Specification.

Portal Server's user behavior tracking conforms to the ELF (extended log format) standards defined by the World Wide Web Consortium (W3C). To analyze end-user data, administrators can use the management console or other tools.

Portal Server provides these reports about user behavior:

- **Portal User Identity Report** lists end users and times end users last accessed the Desktop. Groups end users by server, domain, and relative DN.
- **Portal User Login Rate** reports login activity rates.
- **Portal Channel View Report** lists which end users viewed a channel and the number of times end users viewed the channel. Groups channels by the containers channels belong to.
- **User Customization of Portal Containers** reports end-user changes to containers, including Desktop content, layout and theme alterations.

- **Portal Request Rate** reports the rate of request of each top container per hour over a period of time.
- **User Customization of Portal Channels** lists end users and actions end users performed on channels.
- **Portlet Actions Report** provides the rate of portlet action requests in the portal.
- **Portlet Render Report** reports the number of times a portlet is displayed in a particular portlet mode or window state.

## Monitoring Portal Server Performance

Monitoring provides runtime information about Portal Server's Desktop and Secure Remote Access components. The framework for maintaining system statistics is based on Java™ Management Extensions (JMX™) technology.

Information collected from monitoring these components can help portal administrators do the following:

- Make appropriate tuning decisions
- Establish reliable benchmarks
- Deploy additional portal instances to support increased end-user activity on a portal
- Configure alarms to flag significant events (such as server thread pools reaching 95% utilization)

The Portal Server management console provides pages for configuring and generating reports about the how the Desktop and Secure Remote Access components perform. Administrators can use the command-line interface to perform other monitoring tasks. For information, see the *Sun Java System Portal Server 7.2 Command-Line Reference*.

## Logging Portal Server Data

The Portal Server logging API is an implementation of the JSR 47: Logging API Specification. Each Portal Server application has its own configuration file. Portal administrators can do the following:

- Associate a configuration file with its corresponding application
- Make specific configuration changes that affect only that application
- Achieve easier cleanup of applications

By default, the log file directory is

`/var/opt/sun/portal/portals/portal1/logs/portal-server-instance`. The `com.sun.portal.log.config.file` properties file provides the default configuration of the logging system. Administrators can specify the location and names of the portal log files specified in this file.

Administrators can define the following logging attributes:

- Maximum size of the log file
- Number of history files
- Type of log level

## Application Log Configuration Files

Each Portal Server application has at least one log configuration file associated with it. This topic lists file names for the following applications:

- “Portal Instance” on page 45
- “Portlet Applications” on page 45
- “Search Application” on page 46
- “Administrative CLIs” on page 46
- “Portal Administration Server” on page 46
- “Management Console” on page 47
- “Secure Remote Access Gateway” on page 47
- “Netlet Proxy” on page 47
- “Rewriter Proxy” on page 48

### Portal Instance

The log configuration file name is:

- `portal_server_data_directory/portals/portal_ID/config/PSLogConfig.properties`

Example:

`/var/opt/SUNWportal/portals/myPortal/config/PSLogConfig.properties`

The log file location is:

- `portal_server_data_directory/portals/portal_ID/logs/instance_ID`

Example: `/var/opt/SUNWportal/portals/myPortal/logs/myInstance/`

By default, one file is created. The file name is `portal.0.0.log`.

### Portlet Applications

The log configuration file name is:

- `portal_server_data_directory/config/portal_ID/config/PSLogConfig.properties`

Example: `/var/opt/SUNWportal/portals/myPortal/config/PSLogConfig.properties`

The log file location is:

- *portal\_server\_data\_directory*/portals/*portal\_ID*/logs/*instance\_ID*  
Example: /var/opt/SUNWportal/portals/myPortal/logs/myInstance/

By default, one file is created. The file name is `portal.0.0.log`. The content is logged through `PortletContext.log()`.

## Search Application

The log configuration file name is:

- *portal\_server\_data\_directory*/searchserver/*search\_ID*/config/SearchLogConfig.properties  
Example:  
/var/opt/SUNWportal/searchserver/mySearch/config/SearchLogConfig.properties

The log file location is:

- *portal\_server\_data\_directory*/searchserver/*search\_ID*/logs/  
Example: /var/opt/SUNWportal/searchserver/mySearch/logs/

By default, three files are created. The file names are:

- `rdmserver.0.0.log`
- `rdm.0.0.log`
- `rdmgr.0.0.log`

## Administrative CLIs

The log configuration file name is:

- *portal\_server\_configuration\_directory*/PSAdminLogConfig.properties  
Example: /etc/opt/SUNWportal/PSAdminLogConfig.properties

The log file location is:

- *portal\_server\_data\_directory*/logs/admin/  
Example: /var/opt/SUNWportal/logs/admin/

By default, one file is created. The file name is `portal.admin.cli.0.0.log`.

## Portal Administration Server

The log configuration file name is:

- *portal\_server\_configuration\_directory*/PSAdminLogConfig.properties  
Example: /etc/opt/SUNWportal/PSAdminLogConfig.properties

The log file location is:

- *portal\_server\_data\_directory*/logs/admin/  
Example: /var/opt/SUNWportal/logs/admin/

By default, one file is created. The file name is `portal.0.0.log`.

## Management Console

The log configuration file name is:

- *portal\_server\_data\_directory*portals/*portal\_ID*/config/PSLogConfig.properties  
Example: /var/opt/SUNWportal/portals/myPortal/config/PSLogConfig.properties

The log file location is:

- *portal\_server\_data\_directory*/logs/admin/  
Example: /var/opt/SUNWportal/logs/admin/

By default, one file is created. The file name is `portal.admin.console.0.0.log`.

## Secure Remote Access Gateway

The log configuration file name is:

- *portal\_server\_configuration\_directory*/platform.conf.*profile*  
Example: /etc/opt/SUNWportal/platform.conf.default

The log file location is:

- *portal\_server\_data\_directory*/logs/sra/*profile*/  
Example: /var/opt/SUNWportal/logs/sra/default/

By default, one file is created. The file name is `portal.gateway.0.0.log`.

## Netlet Proxy

The log configuration file name is:

- *portal\_server\_configuration\_directory*/platform.conf.*profile*  
Example: /etc/opt/SUNWportal/platform.conf.default

The log file location is:

- *portal\_server\_data\_directory/logs/sra/profile/*  
Example: `/var/opt/SUNWportal/logs/sra/default/`

By default, one file is created. The file name is `portal.nlproxy.0.0.log`.

## **Rewriter Proxy**

The log configuration file name is:

- *portal\_server\_configuration\_directory/platform.conf.profile*  
Example: `/etc/opt/SUNWportal/platform.conf.default`

The log file location is:

- *portal\_server\_data\_directory/logs/sra/profile/*  
Example: `/var/opt/SUNWportal/logs/sra/default/`

By default, one file is created. The file name is `portal.rwproxy.0.0.log`.

# Portal Server Performance Tuning

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This chapter describes the Sun Java™ System Portal Server `perf tune()` script.

This chapter provides the following sections:

- “About the Portal Server `perf tune` Script” on page 49
- “Configuration Changes in Portal Server Components” on page 49

## About the Portal Server `perf tune` Script

Administrators typically run the Portal Server `perf tune` script before performance tests or during system production.

The script does the following:

- Invokes the Access Manager `amtune` script and modifies the `desktopconfig.properties` file
- Tunes the Solaris™ Operating System kernel and transmission control protocol (TCP) settings
- Prevents the script from tuning a system that lacks adequate memory

## Configuration Changes in Portal Server Components

This section identifies configuration changes that the `amtune` script makes for the following Portal Server components:

- “Application Server” on page 50
- “Directory Server” on page 50
- “Access Manager” on page 50
- “Portal Server Desktop” on page 50

## Application Server

The `amtune` script modifies the following configuration files for Sun Java System Application Server and GlassFish™:

- `deploy_domain/deploy_instance/config/init.conf`
- `deploy_domain/deploy_instance/config/server.xml`
- `deploy_domain/deploy_instance/config/server.policy`

`deploy_domain`      Application server domain directory and the application server domain. For example: `/opt/SUNWappserver/domains/domain1`

`deploy_instance`    Application server domain directory and the application server domain. For example: `/opt/SUNWappserver/domains/domain1`

## Directory Server

The `amtune` script modifies the following Sun Java System Directory Server configuration file:

- `/var/opt/mps/serverroot/slapd-hostname/config/dse.ldif`

## Access Manager

The `amtune` script modifies the following Sun Java System Access Manager configuration file:

- `/etc/opt/SUNWam/config/serverconfig.xml`
- `/etc/opt/SUNWam/config/AMConfig.properties`

## Portal Server Desktop

The `perftune` script modifies the following Portal Server Desktop configuration file:

- `/etc/opt/SUNWps/desktop/desktopconfig.properties`

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