

HP Automation Insight

For the Red Hat Enterprise Linux® and SUSE Enterprise Linux®
operating systems

Software Version: 1.0

User Guide

Document Release Date: July 2014

Software Release Date: July 2014



Legal Notices

Warranty

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

The information contained herein is subject to change without notice.

Restricted Rights Legend

Confidential computer software. Valid license from HP required for possession, use or copying. Consistent with FAR 12.211 and 12.212, Commercial Computer Software, Computer Software Documentation, and Technical Data for Commercial Items are licensed to the U.S. Government under vendor's standard commercial license.

Copyright Notice

© Copyright 2014 Hewlett-Packard Development Company, L.P.

Trademark Notices

Adobe® is a trademark of Adobe Systems Incorporated.

Microsoft® and Windows® are U.S. registered trademarks of Microsoft Corporation.

UNIX® is a registered trademark of The Open Group.

Acknowledgements

This product includes software developed by the Apache Software Foundation (<http://www.apache.org/>).

Documentation Updates

The title page of this document contains the following identifying information:

- Software Version number, which indicates the software version.
- Document Release Date, which changes each time the document is updated.
- Software Release Date, which indicates the release date of this version of the software.

To check for recent updates or to verify that you are using the most recent edition of a document, go to: <http://h20230.www2.hp.com/selfsolve/manuals>

This site requires that you register for an HP Passport and sign in. To register for an HP Passport ID, go to: <http://h20229.www2.hp.com/passport-registration.html>

Or click the **New users - please register** link on the HP Passport login page.

You will also receive updated or new editions if you subscribe to the appropriate product support service. Contact your HP sales representative for details.

Support

Visit the HP Software Support Online web site at: <http://www.hp.com/go/hpsoftwaresupport>

This web site provides contact information and details about the products, services, and support that HP Software offers.

HP Software online support provides customer self-solve capabilities. It provides a fast and efficient way to access interactive technical support tools needed to manage your business. As a valued support customer, you can benefit by using the support web site to:

- Search for knowledge documents of interest
- Submit and track support cases and enhancement requests
- Download software patches
- Manage support contracts
- Look up HP support contacts
- Review information about available services
- Enter into discussions with other software customers
- Research and register for software training

Most of the support areas require that you register as an HP Passport user and sign in. Many also require a support contract. To register for an HP Passport ID, go to:

<http://h20229.www2.hp.com/passport-registration.html>

To find more information about access levels, go to:

http://h20230.www2.hp.com/new_access_levels.jsp

HP Software Solutions Now accesses the HPSW Solution and Integration Portal Web site. This site enables you to explore HP Product Solutions to meet your business needs, includes a full list of Integrations between HP Products, as well as a listing of ITIL Processes. The URL for this Web site is <http://h20230.www2.hp.com/sc/solutions/index.jsp>

Contents

| | |
|----------------------------------------------------|----|
| Welcome to HP Automation Insight | 5 |
| HP AI Components and Architecture | 5 |
| HP AI Components | 5 |
| HP AI Core Directory Structure | 6 |
| HP AI URLs | 6 |
| Supported Browsers | 7 |
| JRE Versions and Report Authoring | 7 |
| Reports | 9 |
| About Web Intelligence Reporting | 9 |
| Reporting User Interface Document List | 9 |
| Before Creating Reports | 11 |
| Standard Reports | 11 |
| Run Standard Reports | 11 |
| Build a Custom Report | 14 |
| Schedule a Report | 18 |
| Create a Cross Group Report | 22 |
| HP AI Reporting Universes and Solution Packs | 31 |
| About HP AI Reporting Universes | 31 |
| Universe Elements | 31 |
| Universe Definitions | 32 |
| About HP AI Solution Packs | 32 |
| We appreciate your feedback! | 34 |

Welcome to HP Automation Insight

HP Automation Insight (AI) is an HP product that leverages HP Vertica analytics database technology and provides a complete set of ETL tools, dimensional data model, reports, dashboards and analytics systems and content for the HP suite of automation tools.

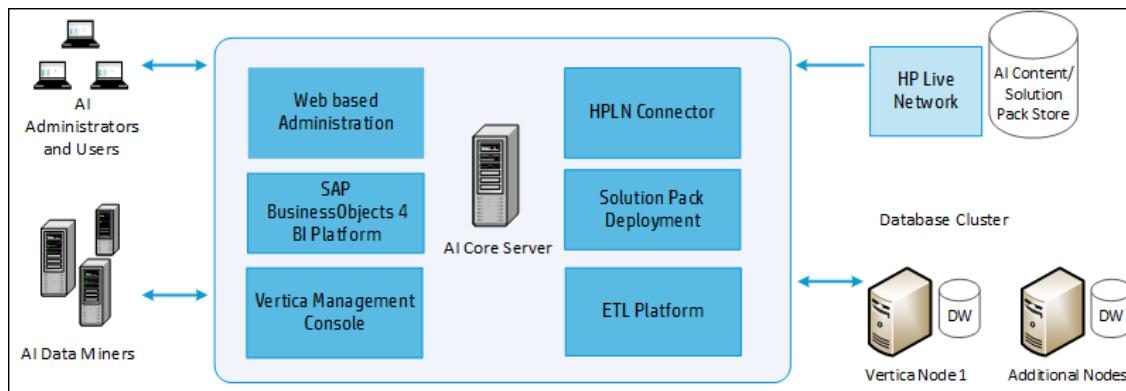
HP AI provides advanced analysis on cloud automation activities that enables you to leverage the suite of HP cloud and data center automation software to make decisions based on real-time and historical data. The data analyzed is collected from HP software products such as HP Server Automation (SA) that perform automation and monitoring services in the cloud.

This document is designed for HP AI users, who need view, edit, create, and run content reports.

HP AI Components and Architecture

HP AI provides a data warehouse that uses HP Vertica as the database, and delivers content based on solution packs that contain ETL and model definitions, universes, and standard reports. HP AI solution packs are deployable from the web administration user interface and can be automatically updated from HPLN. Using SAP BusinessIntelligence, HP AI provides both standard and customizable reports that enable you to monitor the state of your data center. The HP AI web administration user interface provides web-based administration of the HP AI product.

HP AI Components and Architecture



HP AI Components

HP AI Gateway—HTTPS proxy that creates the port to which all clients connect. The HTTP proxy provides reverse proxy for the following components:

- SAP BI launch pad
- SAP BO Central Management Console (CMC)
- HP Vertica Management Console web application

Apache Directory Server—Internal LDAP server used for user and group management. The directory server includes a custom authenticator feature used by HP AI to perform delegated authentication to systems such as HP Server Automation.

SAP BusinessObjects Web Intelligence—Enterprise reporting and dashboard platform used to perform data analysis.

AI Administration Web Application—Web application used to configure and manage HP AI subsystems.

AI Data Loader—Application that loads data into the HP AI data warehouse.

AI Data Miner—Application that extracts data from external HP source systems, such as HP Server Automation (SA.)

AI Platform—AI component that includes all management functions.

AI Solution Pack Deployer—Application that deploys solution pack content to other HP AI components, such as HP Vertica and SAP BusinessObjects.

HP Live Network—HP system that hosts HP AI solution packs and downloads using LiveNetwork Connector.

HP Server Automation—An HP product that HP AI extracts data from and to which it delegates user authentication. HP SA is data center automation software that centralizes and streamlines many data center functions and automates critical areas of data center server management.

Rsync—Tool HP AI uses to transfer data files from data miners over the Secure Sockets Layer (SSL.)

Vertica Database System—Database that hosts the HP AI data warehouse and provides analytic functions.

HP AI Core Directory Structure

| Path | Description |
|-----------------|----------------------------------------------------|
| /opt/HP/CBI | Location of HP AI binary files. |
| /etc/opt/HP/CBI | Location of HP AI configuration files. |
| /var/opt/HP/CBI | Location of data files. |
| /var/log/HP/CBI | Location of log files. |
| /opt/vconsole | Location of Vertica Management Console files. |
| /etc/init.d | Location of HP AI start, stop, and status scripts. |

HP AI URLs

You can log in to the HP AI interfaces at the URLs in the following table.

| Interface | URL |
|-----------------------------------------|-----------------------------------------------------------------------------------------|
| HP AI web administration user interface | https://ai-core:4443/ai-admin |
| Business Intelligence Launch Pad | https://ai-core:4443/ai-user/BOE/BI |
| BO Central Management Console | https://ai-core:4443/ai-user/BOE/CMC |
| Vertica Management Console | https://ai-core:4443/webui/ |

Note: You can also log in to the BI Launch Pad and the SAP BusinessObjects Central Management Console (CMC) from the HP AI web administration user interface. You must log in as Admin to CMC. You must select LDAP as the authentication method to access the BI Launch Pad and CMC.

Supported Browsers

For the list of supported browsers for HP AI, see the Support Matrix document included on the distribution media and available for download on the Self-Solve site at <http://h20230.www2.hp.com/selfsolve/manuals>.

JRE Versions and Report Authoring

For users who need to create reports in HP AI using the web administration user interface, it is possible that the version of the JRE that is installed on your system may conflict with the JRE version required for the Web Intelligence Java-based report authoring feature.

See the "Web Browsers and Plug-ins" section of the *HP Automation Insight Support Matrix* for the required JRE version for your browser.

Internet Explorer Users

If you are using Internet Explorer while trying to author or modify a report, and the reporting panel displays an error message regarding JRE versions or in general fails to successfully load the Web Intelligence reporting panel, perform the following steps:

1. Close the report window without saving.
2. Close the Web browser and uninstall the incompatible version of JRE on your system.
3. Log in to the BI launch pad.
4. Return to the reporting features and try to edit the report as before.

Web Intelligence will prompt you to install the required version. Accept the installation. You should now be able to author reports without this error once the required JRE is installed.

Firefox Users

If you are using Firefox and experience this problem, go to

<http://java.sun.com/products/archive/j2se/6u3/index.html>, select your platform, then download and install the correct version of JRE.

For more information, follow the instructions found at the web sites listed below depending on your operating system platform:

Windows

http://www.java.com/en/download/help/firefox_online_install.xml

Linux

http://www.java.com/en/download/help/linux_install.xml

Reports

HP AI provides Web Intelligence reporting accessed through BI launch pad.

About Web Intelligence Reporting

HP AI Web Intelligence reporting provides the ability to report on data from source systems such as HP Server Automation (SA.) You can select data from the source system reporting universes to build Web Intelligence documents that define and display historical and trending information about your data center.

Note: Users who do not have data permissions to report data will be able to view report results that are stored in folders to which they have Read access. For more information, see "Set Security Access Levels for HP AI Users and Groups" and "Set Security Access Levels on Folders" in the *HP Automation Insight Administrator Guide*.

Note: In HP AI release 1.0, OpenStack is not supported in the Virtualization Service report.

For more information on Web Intelligence reporting, see the following topics:

- ["Reporting User Interface Document List"](#)
- ["Before Creating Reports"](#)
- ["Standard Reports"](#)
- ["Run Standard Reports"](#)
- ["Build a Custom Report"](#)
- ["Schedule a Report"](#)
- ["HP AI Reporting Universes and Solution Packs"](#)

The HP AI reporting interface uses the SAP Business Intelligence launch pad. To provide you with additional information, the relevant SAP BusinessObjects guides are accessible from the HP Automation Insight web administration user interface. Select the help (?) icon to access the SAP BusinessObjects documentation.

For additional information about SAP BusinessObjects 4.0, visit the SAP BusinessObjects Business Intelligence platform 4.0 web site at the following URL: <http://help.sap.com/bobip40>.

Reporting User Interface Document List

The HP AI reporting interface utilizes the SAP Business Intelligence (BI) launch pad, a web desktop that gives you access to a broad range of useful business information collected and stored

by HP AI about your organization. You can access the SAP BI Launch Pad by clicking on "Open BI Launch Pad" on the HP AI web administration user interface, or from the following URL:

<https://ai-core:4443/ai-user/BOE/BI>

Each report that is created can be saved in the Public Folders or My Favorites folders on a per user basis depending on user permissions. Public reports are listed in this location for all users.

The following screen shot shows the reporting interface and identifies its major features:

The screenshot shows the HP Automation Insight web interface. The left sidebar displays a folder hierarchy under 'My Documents' labeled 'Folders'. A blue circle labeled '1' highlights the 'HP AI' folder, which contains sub-folders like 'HP AI System Inventory', 'HP Server Automation', and 'HP SA Compliance'. The 'HP SA Compliance' folder is expanded, showing sub-folders for 'Audit Compliance', 'Patch Compliance', 'Software Compliance', and 'HP SA User Management'. A blue circle labeled '2' is placed over the toolbar at the top of the page. A blue circle labeled '3' is placed over the 'Details' table on the right side, which lists various reports with columns for Title, Type, Last Run, and Instances. The table entries include:

| Title | Type | Last Run | Instances |
|-----------------------------------------------------|------------------|----------|-----------|
| Audit Dashboard | Web Intelligence | 0 | 0 |
| Audit Compliance Detailed | Web Intelligence | 0 | 0 |
| Audit Compliance Summary | Web Intelligence | 0 | 0 |
| Audit Compliance Trending Over Time by Audit Policy | Web Intelligence | 0 | 0 |
| Audit Compliance Trending Over Time by Device Group | Web Intelligence | 0 | 0 |
| Audit Job Statuses Last x Days | Web Intelligence | 0 | 0 |

| Feature | Description |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Document List Folders | <p>The Documents List folder hierarchy contains folders to store all of your Web Intelligence Documents. You can create folders to help organize your documents and reports. HPAI standard reports can be found in the HP AI folder.</p> <p>You can also operate on a folder or document in the list by right-clicking a folder in order to:</p> <ul style="list-style-type: none">• Create a new Web Intelligence Document• View a folder's or document's properties (including access permissions)• Create a new folder |
| 2. Document List Toolbar | <p>Allows you to perform several important operations, such as:</p> <ul style="list-style-type: none">• View: View a report or the properties of a folder or report.• New: Create a new Web Intelligence document or folder• Organize: Move, copy, cut, or create shortcuts for folders or reports• More Actions: Schedule or modify reports |

| Feature | Description |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3. Document List Contents | Displays the contents of a Documents List folder. The Last Run column displays a date and time for scheduled reports. No date is displayed for reports that are run manually. |

Before Creating Reports

Creating a report in HP AI requires that the following tasks have already been performed:

- **Configure User Groups and Permissions:** Make sure that users and user groups have been created that possess the proper permissions to create reports. The Admin user has no restrictions. For more information, see "Managing Users and Groups" and "Set Security Access Levels for HP AI Users and Groups" in the *HP Automation Insight Administrator Guide*.
- **Set Security on Folders:** Set security access for a user or group at the folder level to limit the types of information you can use to build reports. For more information, see "Set Security Access Levels on BI Objects" in the *HP Automation Insight Administrator Guide*.

Note: These tasks are typically performed by an administrative user. See the *HP Automation Insight Administrator Guide*.

For specific JRE requirements related to report authoring, see "JRE Versions and Report Authoring."

Standard Reports

Several reports are available for HP AI that present the various types of data and historical information an HP AI report can display.

These reports are available at the HP Live Network (HPLN) site. You can find more information about the HPLN service in the "Configuring HP Live Network Connector" section of the *HP Automation Insight Administrator Guide*.

To download the most recent content and documentation, go to the HP Live Network web site at <https://hpln.hp.com/>. You will find an HP Automation Insight link on the Products tab. The HP Automation Insight solution pack user guides available on HPLN explain how to use the reports provided for this product.

Run Standard Reports

HP AI admin users and non-admin users (including SA users) who are members of the BOUsers or BOAdministrators group can view and launch dashboards and reports. The HP AI administrator can add users to these groups in the HP AI web administration user interface **Users and Groups** tab. The HP AI administrator can also configure a data source, such as SA, as an authentication source, enabling users from that source system to view and run HP AI reports.

To run a standard report, perform the following steps:

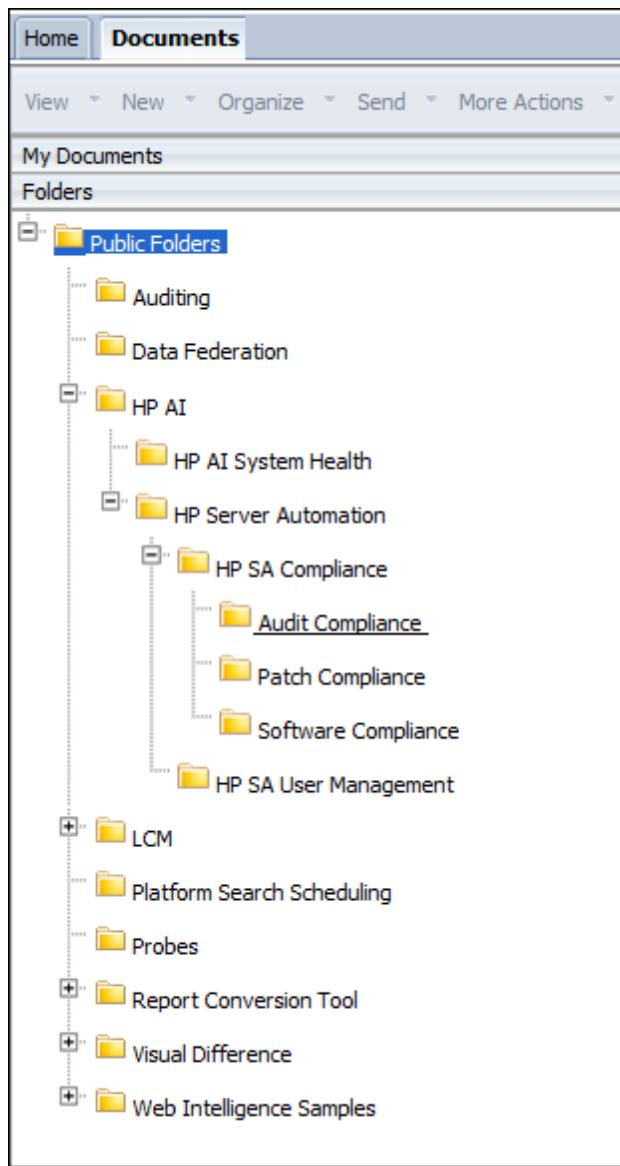
1. Log in to the BI Launch Pad:

<https://ai-core:4443/ai-user/BOE/BI>

The BI Launch Pad login page opens.

The screenshot shows the login interface for the HP Automation Insight BI Launch Pad. At the top left is the HP logo. To its right, the text "Automation Insight" is displayed. Below this, a button labeled "Log On to BI launch pad" is visible. A note below the button reads: "Enter your user information and click Log On. (If you are unsure of your account information, contact your system administrator.)". The form fields are as follows: "System:" dropdown set to "cbi-demo2-core.hpswlab.ad", "User Name:" input field containing "user1", "Password:" input field filled with dots, and "Authentication:" dropdown set to "LDAP". At the bottom right of the form is a blue "Log On" button.

2. Enter the HP AI user name and password.
3. Select LDAP for the authentication method.
4. Click **Log On**.
5. In the BI launch pad, click the **Documents** tab.
6. Click to expand the **Folders** section.
7. Under Public Folders, click to expand the HP AI folder.



A folder is provided for each deployed solution pack.

8. In the left pane, expand the folder for the solution pack. Click a solution pack folder to display the available reports and dashboards for that solution pack.

| Title | Type | Last Run | Instances |
|----------------------------------------|------------------|----------|-----------|
| Patch Compliance by Severity Over Time | Web Intelligence | | 0 |
| Patch Dashboard | Web Intelligence | | 0 |
| Patch Job Statuses | Web Intelligence | | 0 |
| Patch Rollout Status Details | Web Intelligence | | 0 |
| Patch Rollout Summary | Web Intelligence | | 0 |
| Patch Success Rate Report | Web Intelligence | | 0 |

9. Select View, from the View menu, or double-click on the name of a report or dashboard in the right pane to open the report or dashboard.
10. Select the User Prompt Input (?) icon and enter the required inputs for the report. You can also click the refresh (⟳) icon to display a drop-down menu of user inputs.
11. Click **Run** to run the report.

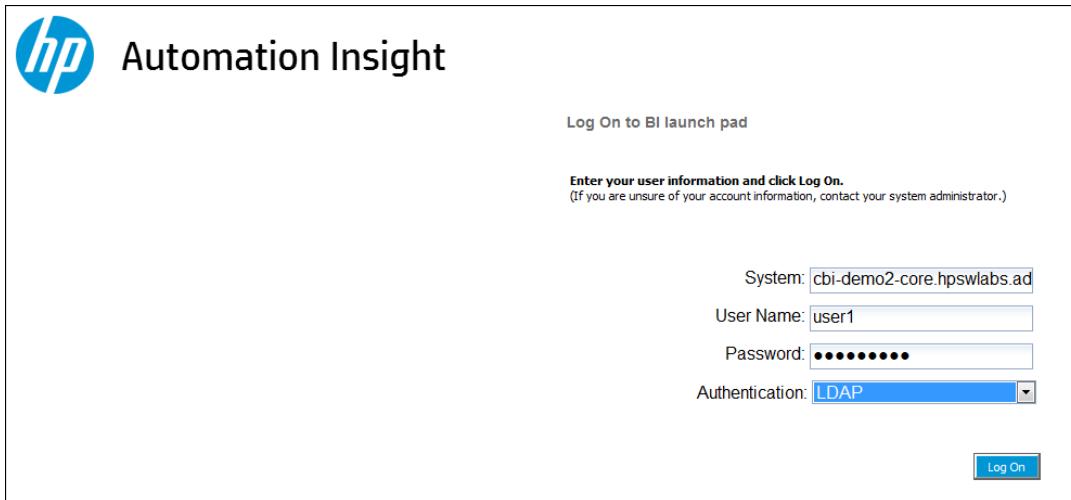
For more information about the standard reports available in each solution pack, see the solution pack user guides available on HPLN.

Build a Custom Report

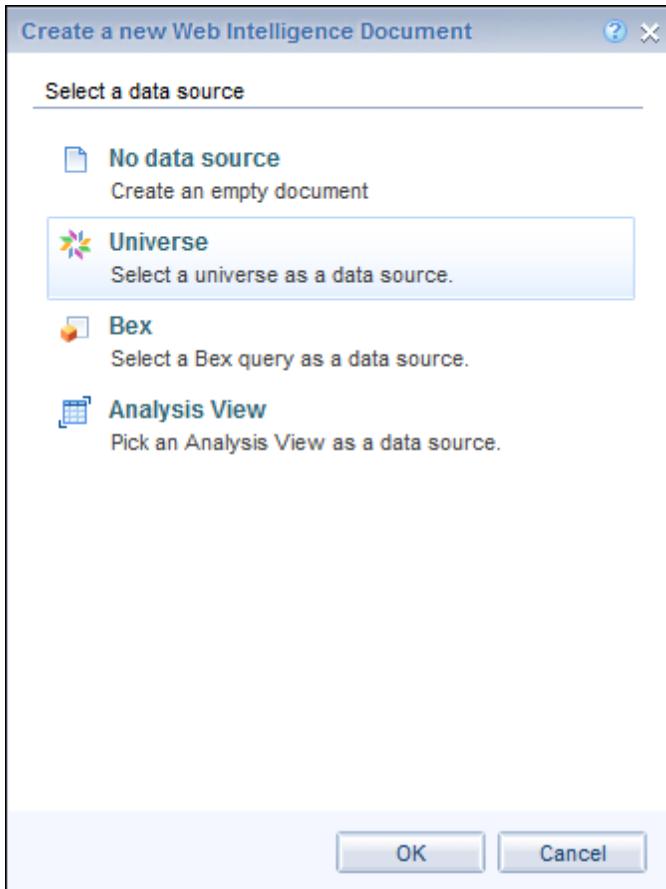
1. Log in to the BI Launch Pad:

<https://<>ai-core<>:4443/ai-user/BOE/BI>

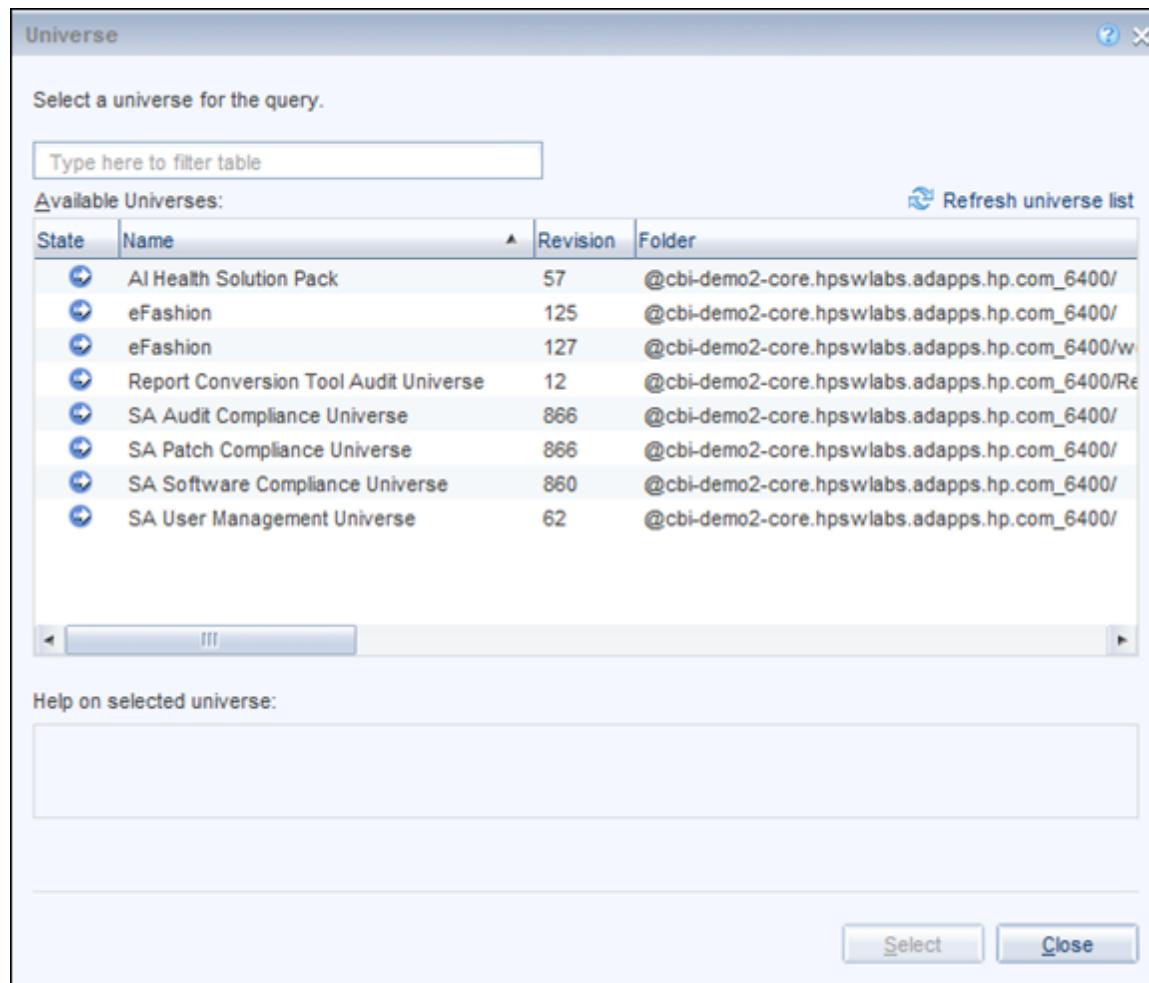
The BI Launch Pad log in page opens.



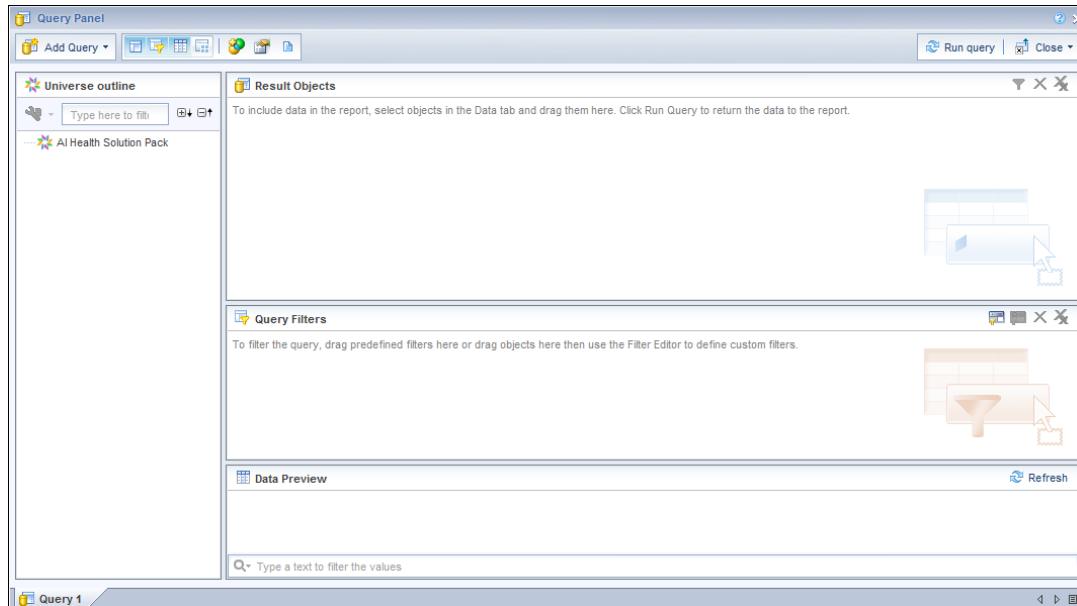
2. Enter the HP AI user name and password.
3. Select LDAP for the authentication method.
4. Click **Log On**.
5. From the Applications pull-down, select **Web Intelligence Application**. The SAP BusinessObjects Web Intelligence window opens.
6. In the Web Intelligence bar, click the new (DOC) icon. The Create a New Web Intelligence Document window opens.



7. **Select Universe.**
8. **Click OK**
9. The Universe window opens. Select the Universe for your solution pack.



10. Click **Select**. The Query Panel opens.



11. In the left pane, expand the folders (classes) to view the available objects. Double-click an object to add it to the report.

Note: The objects that are available, and the combination of objects that can be used together in a report, is dependent upon the universe. See the solution pack user guides available from HPLN for details about the objects and filters available in each universe.

12. Click **Run Query**.

For more information about working with SAP BusinessObjects Web Intelligence reports, see the "Working with Documents" section of the *SAP BusinessObjects Web Intelligence Users Guide*.

Schedule a Report

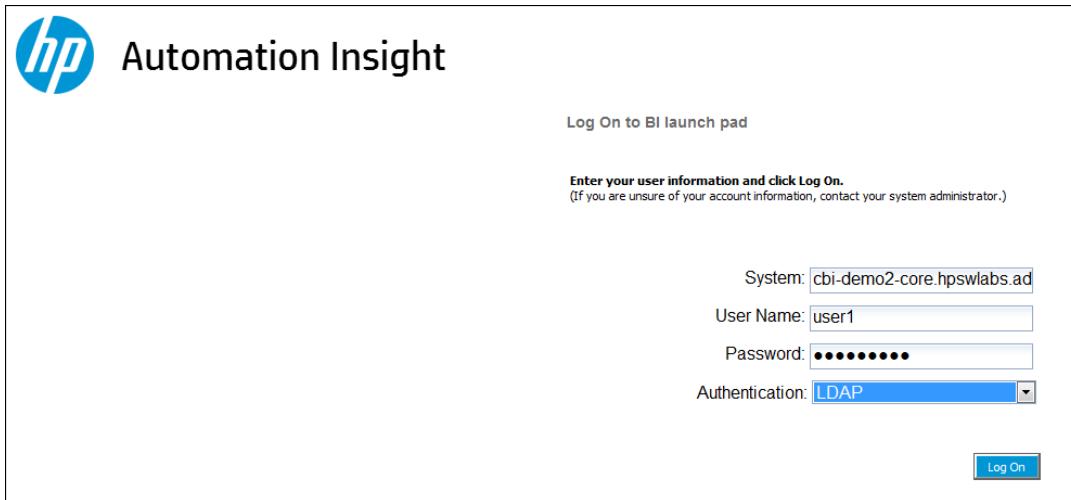
Scheduling is a process which allows you to run a report automatically at specified times. When you schedule a report, you choose the recurrence pattern that you want and specify additional parameters to control exactly when and how often the report will be run.

To schedule a report, perform the following steps:

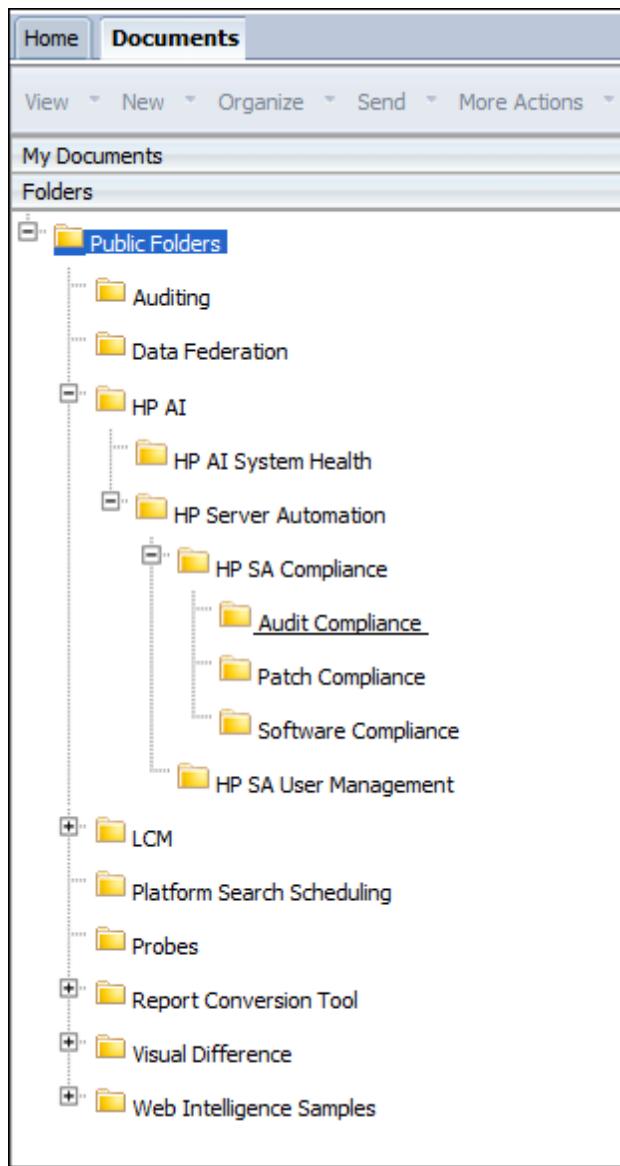
1. Log in to the BI Launch Pad:

<https://ai-core:4443/ai-user/BOE/BI>

The BI Launch Pad log in page opens.



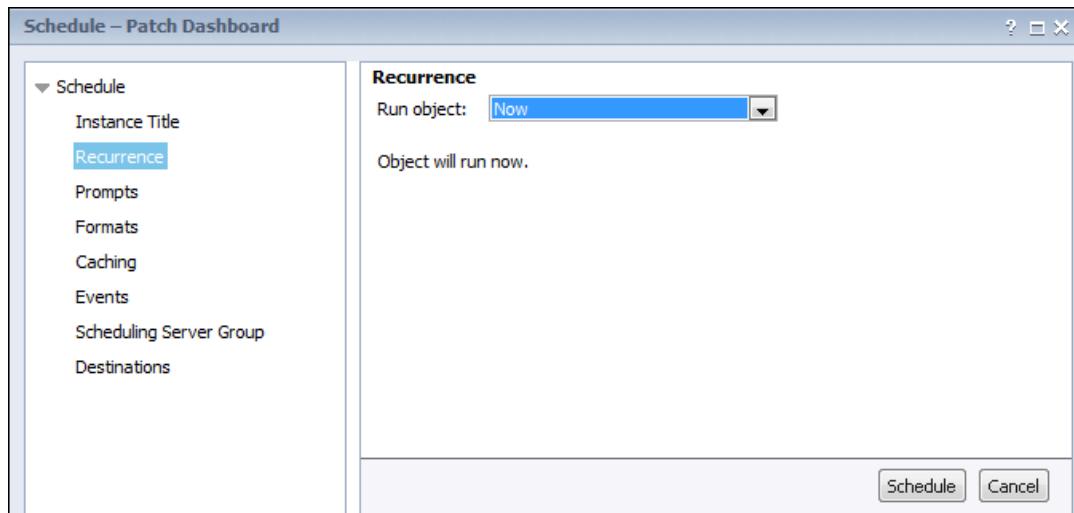
2. Enter the HP AI user name and password.
3. Select LDAP for the authentication method.
4. Click **Log On**.
5. In the BI launch pad, click the **Documents** tab.
6. Click to expand the **Folders** section.
7. Under Public Folders, click to expand the HP AI folder.



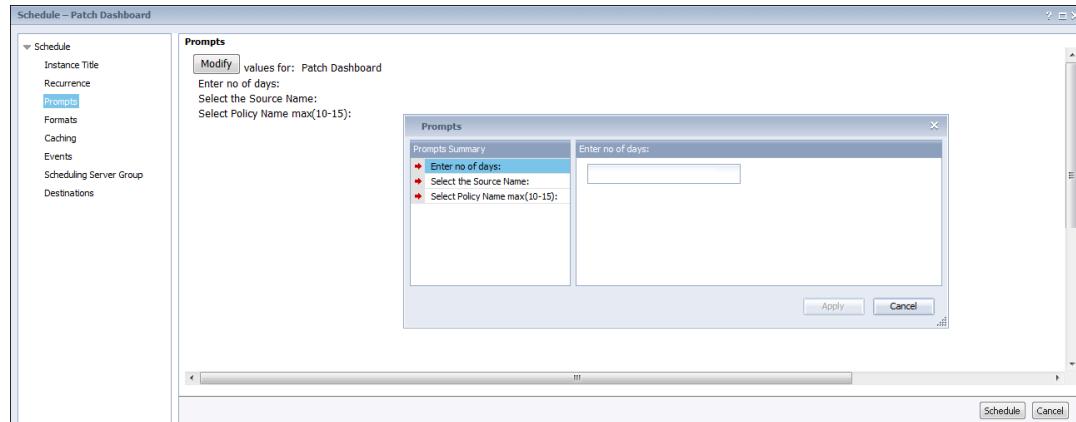
Reports are organized into different folders, based on the reporting category.

8. In the left pane, expand the folder for the reporting category. Click a reporting category folder to display the available reports and dashboards for that category.

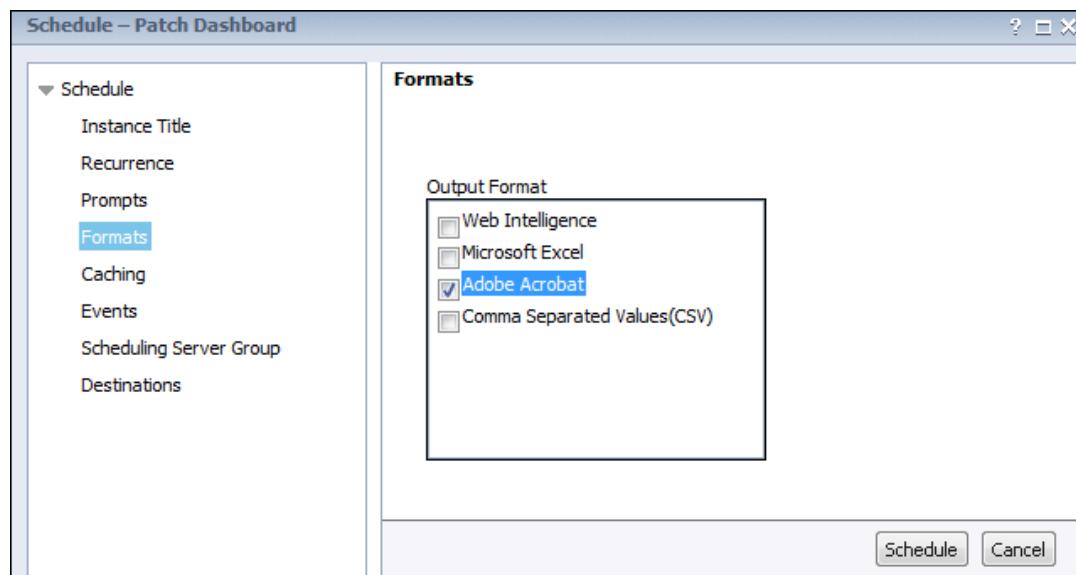
9. Right-click on the name of a report or dashboard in the right pane and select **Schedule**. The Schedule window opens.
10. In the left pane, select **Recurrence**.



11. Select the recurrence from the Run object pull-down.
12. Click **Schedule**.
13. (Optional) In the left pane, select **Prompts** and click **Modify** to change the user input prompt values for the report. Select the prompt values, and click **Apply**.



14. (Optional) In the left pane, select **Formats** to change the output format for the report.



15. (Optional) In the left pane, select **Destinations** to configure the destination for the report. In the Destinations pull-down, select the destination type.
16. Click **Schedule**. The system creates a scheduled instance and runs it according to the schedule information you specify. You can view the scheduled instance on the "History" page for the object.

For more information about working with SAP BusinessObjects Web Intelligence reports, see the *SAP BusinessObjects Web Intelligence Users Guide*.

Create a Cross Group Report

To create a cross group report using multiple universes, perform the following steps.

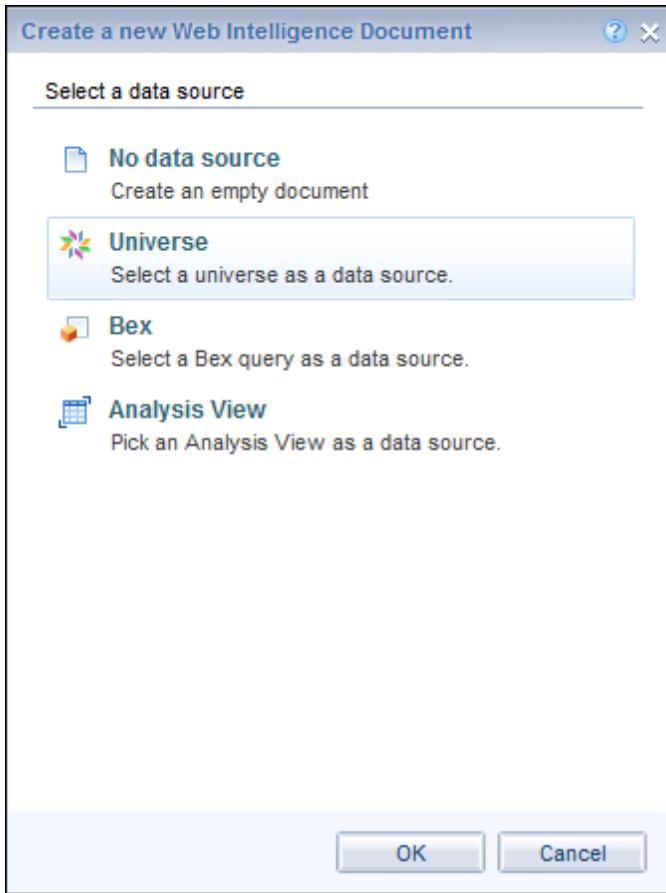
1. Log in to the BI Launch Pad:

<https://ai-core:4443/ai-user/BOE/BI>

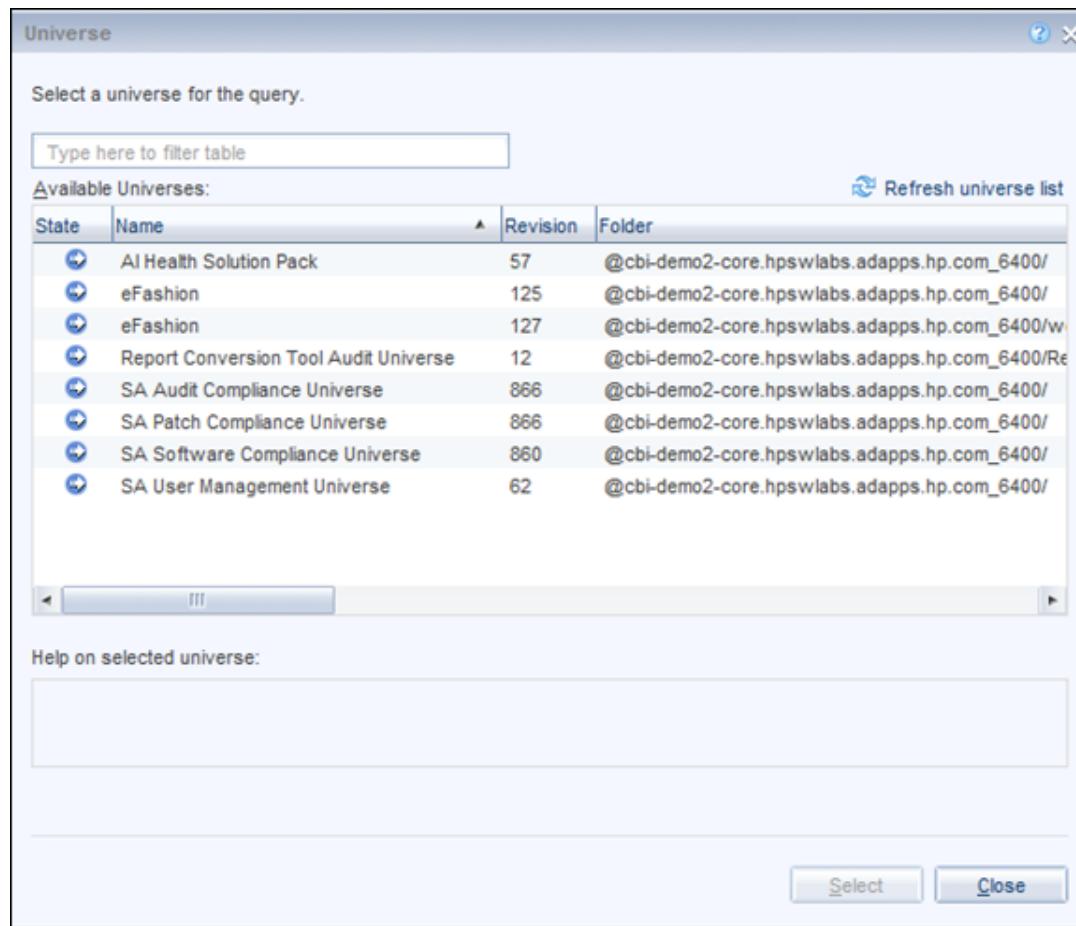
The BI Launch Pad log in page opens.

The screenshot shows the 'Log On to BI launch pad' page. At the top left is the HP logo and the text 'Automation Insight'. Below that is a button labeled 'Log On to BI launch pad'. A note below the button says 'Enter your user information and click Log On. (If you are unsure of your account information, contact your system administrator.)'. There are four input fields: 'System' (set to 'cbi-demo2-core.hpswlab.ad'), 'User Name' (set to 'user1'), 'Password' (filled with dots), and 'Authentication' (set to 'LDAP'). A blue 'Log On' button is at the bottom right.

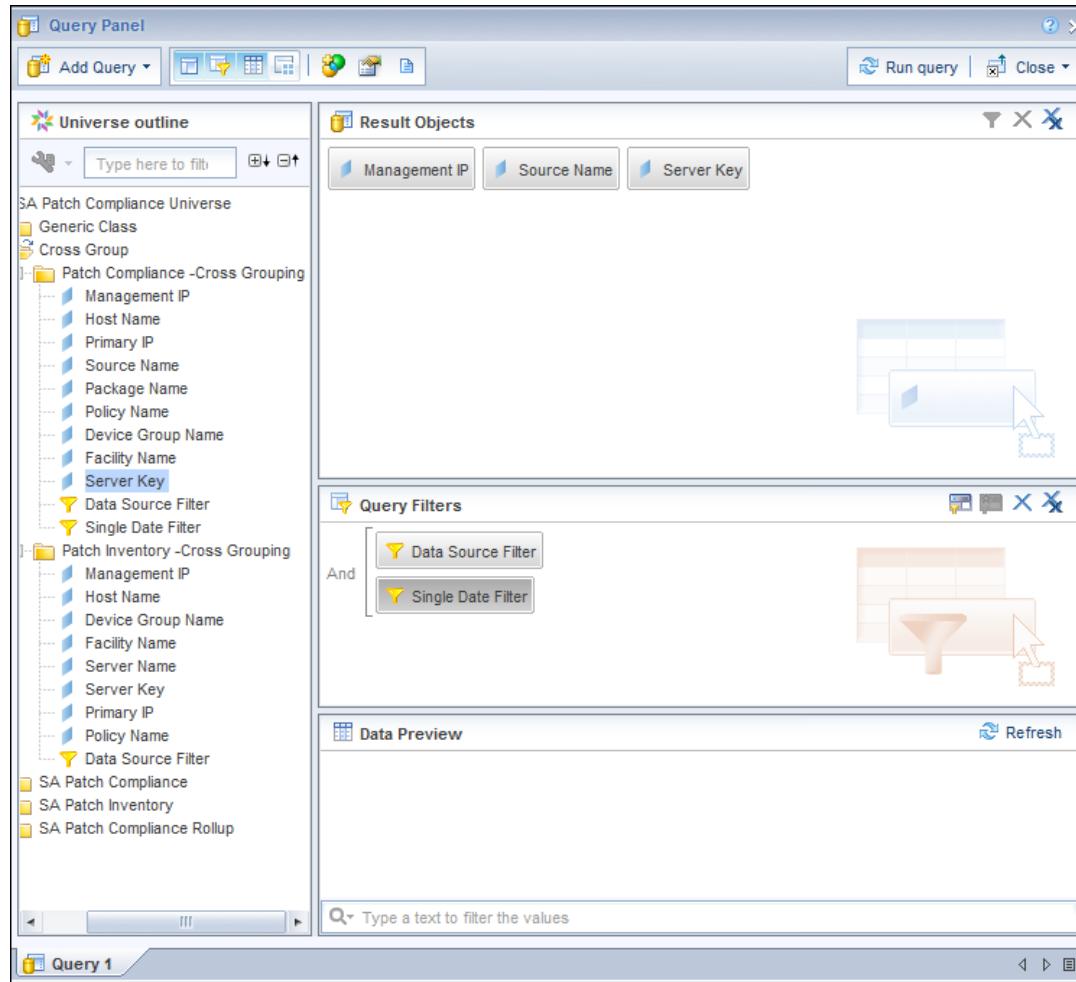
2. Enter the HP AI user name and password.
3. Select LDAP for the authentication method.
4. Click **Log On**.
5. From the Applications pull-down, select **Web Intelligence Application**. The SAP BusinessObjects Web Intelligence window opens.
6. In the Web Intelligence bar, click the new (DOC) icon. The Create a New Web Intelligence Document window opens.



7. **Select Universe.**
8. **Click OK**
9. The Universe window opens. Select the Universe for your solution pack.



10. Click **Select**. The Query Panel opens.



11. In the left pane, expand the **Cross Group** folder. Double-click an object to add it to the report. You must select at least one Key object.

Note: The SA Inventory and Usage Universe does not contain Key objects.

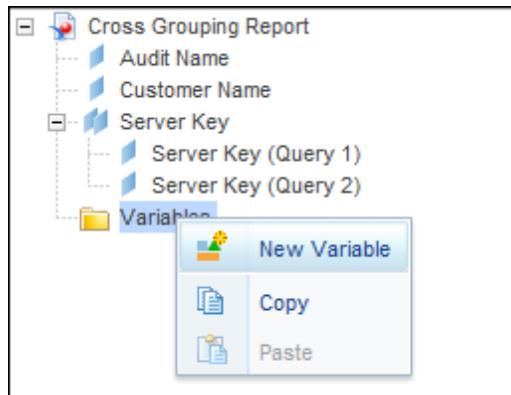
12. In the query pane, select **Add Query -> From Universe** to select a second universe. The Add Query window opens.
13. Select the second universe you want to include in your report.
14. In the left pane, expand the **Cross Group Objects** folder. Double-click an object to add it to the report. You must select at least one Key object.
15. Click **Run Queries**. If any user input prompts are required for the selected objects, the Prompts screen opens. Click the refresh () icon to display a drop-down menu of user inputs.
16. In the Available Objects window, select the objects that are common to both universes you

selected.

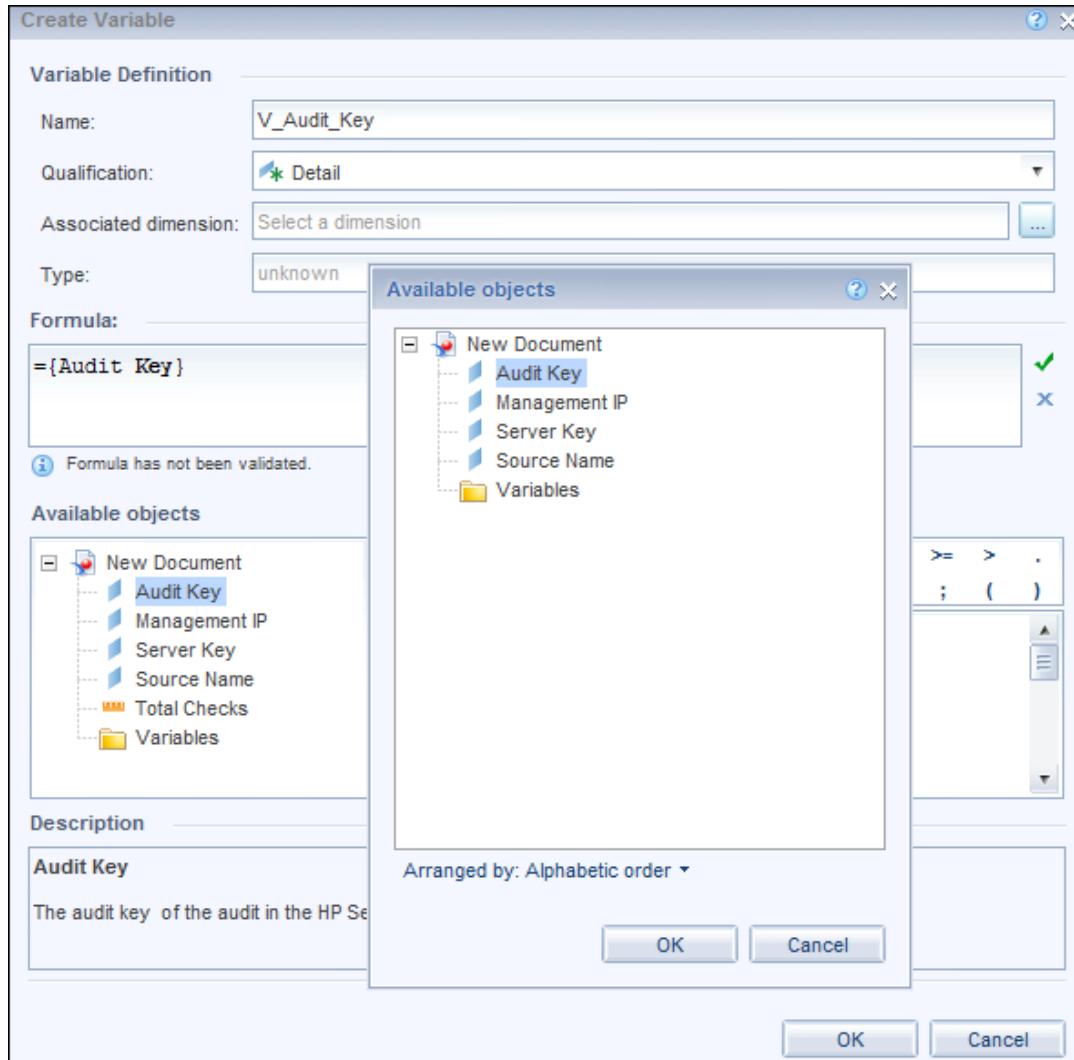
17. In the Data Access tab, click **Merge**.



18. In the Available Objects window, right-click on the **Variables** folder and select **New Variable**:



19. The Create Variable window opens. Enter a name for the object variable and select **Detail** in the **Qualification** pull down menu.
20. Click the box next to the **Associated dimension** field. The Available Objects window opens.

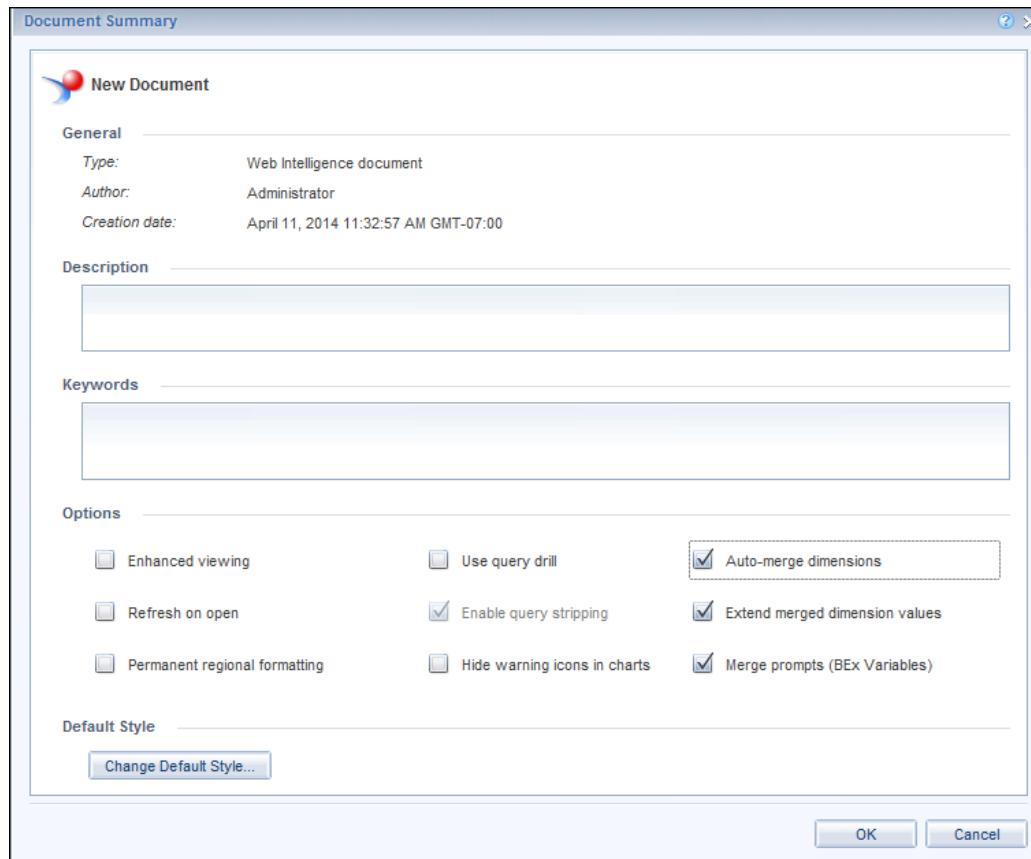


21. Select the object you want to convert. Click **OK**.
22. Repeat Steps 19 and 20 to create an object variable for each cross-universe object you want to display in your report. This converts the dimension objects to detailed object variables so objects from the two universes can be synchronized.

Note: You must create at least one measure object variable to compute results in your report. If there is no measure object variable created, you will see multivalue error messages when you attempt to combine the dimension objects.

23. (Optional) To merge dimensions from multiple universes, perform the following steps to modify the document summary:

- a. Click the Document Summary ()icon.
- b. Click **Edit**. The Document Summary window opens.
- c. Select the **Auto-merge dimensions**, **Extend merged dimension values**, and **(Merge prompts BEx Variables)** options:



- d. Click **OK**.

The following is a sample of a cross object report:

Customer Audit Information

| Server Key | Customer Name | Audit_Count |
|------------|---------------|-------------|
| 20,101 | Not Assigned | 34 |
| 20,201 | Opsware | 74 |
| 20,301 | Not Assigned | 3 |
| 20,401 | Opsware | 42 |
| 20,501 | Not Assigned | |
| 20,601 | Opsware | 62 |
| 20,701 | Opsware | 47 |
| 20,801 | Opsware | 68 |
| 20,901 | Not Assigned | 17 |
| 21,001 | Not Assigned | 47 |
| 21,101 | Not Assigned | 47 |
| 21,201 | Not Assigned | 6 |
| 21,301 | Not Assigned | |
| 21,401 | Not Assigned | 1 |
| 21,501 | Opsware | 7 |
| 21,601 | Opsware | 41 |
| 21,701 | Not Assigned | 30 |
| 21,801 | Not Assigned | 10 |
| 21,901 | Not Assigned | 10 |
| 22,001 | Not Assigned | 3 |
| 22,101 | Not Assigned | 8 |
| 22,201 | Not Assigned | 33 |

For more information about working with SAP BusinessObjects Web Intelligence reports, see the *SAP BusinessObjects Web Intelligence Users Guide*.

HP AI Reporting Universes and Solution Packs

You can create and run reports for HP solution packs, such as HP Server Automation. Reporting universes determine which objects your reports can include.

A reporting universe provides an interface between a WEBi client and a database. The universe defines the relationship among database tables, based upon how the tables are connected.

HP AI leverages SAP BusinessObjects (BO) reporting technology to enable cross-product historical reporting. When you create a Web intelligence document, you use a report designer to select universe objects. HP AI uses information filtered through the universes to create an SQL query based on those objects.

Each universe also contains generic report query filters such as date range filters (which help specify a reporting time-frame). Each universe contains access to any available cross group objects that contain HP Server Automation servers.

About HP AI Reporting Universes

Following are basic universe elements and definitions.

Universe Elements

Universes contain three basic elements: objects, classes, and query filters.

Object

An object represents a specific set of data in your HP Server Automation database. Each object is given a term (such as Server or Device) that has specific meaning in HP Server Automation.

Types of objects are described below:

- **Dimension**

A dimension object () retrieves the data that provides the basis for analysis in a report. Dimension objects typically retrieve character type data. For example, on an SA Server, the SA Server Inventory and Usage Universe contains dimensions such as Server Name, Host Name, OS name, or Serve Model.

- **Measure**

A measure object () performs a numerical evaluation on the data in the database report. Two examples of measures are Number of Managed Server and Number of Physical Servers.

Class

A class is a logical grouping of related objects. Web Intelligence represents a class with a folder (📁) icon. Each class can contain one or more subclasses. Subclasses contain objects that are further categorized into subcategories.

When you create queries on a universe, classes help you to find the objects that represent the information that you want to find.

Query Filter

A query filter object allows you to restrict the data returned by an object in a query. Query filters are represented by a yellow funnel (⚠️) icon. Two examples of query filters (in the server Inventory and Usage Universe) are: Dynamic Date and Date Range. These query filters enable you to select the time frame for the report.

Note: Date filters carry a timestamp of 00:00:00. A report with a date filter of "Today" will not include items that were inserted in the database after midnight. To capture items inserted in the database after midnight, you should set the date filter to tomorrow's date.

Universe Definitions

HP AI provides the following reporting universes.

- **SA Audit Compliance Universe:** This universe contains information about the audit compliance status of SA servers.
- **SA Patch Compliance Universe:** This universe contains information about patch compliance status for SA servers.
- **SA Software Compliance Universe:** This universe contains information about software compliance status for SA servers.
- **SA User Management Universe:** This universe contains information about user management and activity on SA servers.
- **SA Inventory and Usage Universe:** This universe contains information about your SA servers and how you use those servers.
- **AI System Health:** AI System Health Reports use objects from other universes, such as SA Server Inventory and Usage. AI System Health does not contain unique system health objects, but it does provide reports to help you evaluate how well your AI system can perform at your required quality level.

About HP AI Solution Packs

You can create and run reports for HP solution packs, such as HP Server Automation. Reporting universes determine which objects your reports can include.

A reporting universe provides an interface between a WEBi client and a database. The universe defines the relationship among database tables, based upon how the tables are connected.

HP AI leverages SAP BusinessObjects (BO) reporting technology to enable cross-product historical reporting. When you create a Web intelligence document, you use a report designer to select universe objects. HP AI uses information filtered through the universes to create an SQL query based on those objects.

HP AI provides the following types of packaged content to deploy HP AI components that are used to solve cloud and data-center problems:

- **Data Models:** Data tables, views, and projections that are created in the HP Vertica database.
- **Reports:** HP-created operational, tactical, and strategic reports on datacenter and cloud management operational data.
- **Dashboards:** HP-created dashboards for the SA Compliance, and SA Server Inventory and Usage Solution Packs. SA User Management and AI System Health do not provide dashboards.
- **Data Management Jobs:** Jobs available for rolling up data and transforming data.

The latest HP AI solution packs can be deployed automatically through HP Live Network (HPLN).

We appreciate your feedback!

If you have comments about this document, you can [contact the documentation team](#) by email. If an email client is configured on this system, click the link above and an email window opens with the following information in the subject line:

Feedback on User Guide (Automation Insight 1.0)

Just add your feedback to the email and click send.

If no email client is available, copy the information above to a new message in a web mail client, and send your feedback to ai-doc-feedback@hp.com.

