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IBM WebSphere Application Server V6.1

IBM Support Assistant

@business on demand.

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This presentation will cover IBM Support Assistant.

This presentation will first give an overview of IBM Support Assistant, and then discuss how it can be used to help reduce time-to-resolution for your WebSphere Application Server problems.

This section will introduce IBM Support Assistant.

IBM Support Assistant is a local serviceability tool that makes it easier and faster to resolve your software product challenges. It is available for free download on the IBM Software Support Web site, but it is now also distributed with the WebSphere Application Server product on the Installation Tools CD. It is a software support enabler for several IBM software products, not just WebSphere Application Server. It provides a number of features to aid you in problem determination and resolution, including federated search, data collection, problem submission, and diagnostic tools. You can use the "updater" link in the product's interface to update your installation or to install plug-in components for other IBM software products.

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IBM Support Assistant benefits

- Provides fast access to key IBM product information
  - ▶ Federated search tool searches IBM and non-IBM data sources
  - ▶ Direct access to product documentation
- Simplifies submitting problem information to IBM
  - ▶ Problem data is collected by an enhanced Collector tool
  - ▶ Data is submitted using an electronic submission tool
- Integrated tools help solve software problems
  - ▶ Memory Dump Diagnostic Tool for Java™ (MDD4J)

IBM Support Assistant

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IBM Support Assistant can help speed problem resolution in several ways. First, it gives you fast and simple access to product information by providing direct links to product documentation and a federated search tool that enables you to search several commonly searched resources with a single query. It also makes it easier for you to submit information about your problems to IBM, by enabling you to automatically collect problem data and electronically submit a problem report to IBM directly from the tool, attaching the collected diagnostic data to your request. It also provides the Memory Dump Diagnostic Tool for Java™, which can help you troubleshoot memory-related problems.

This section will cover the different uses of IBM Support Assistant
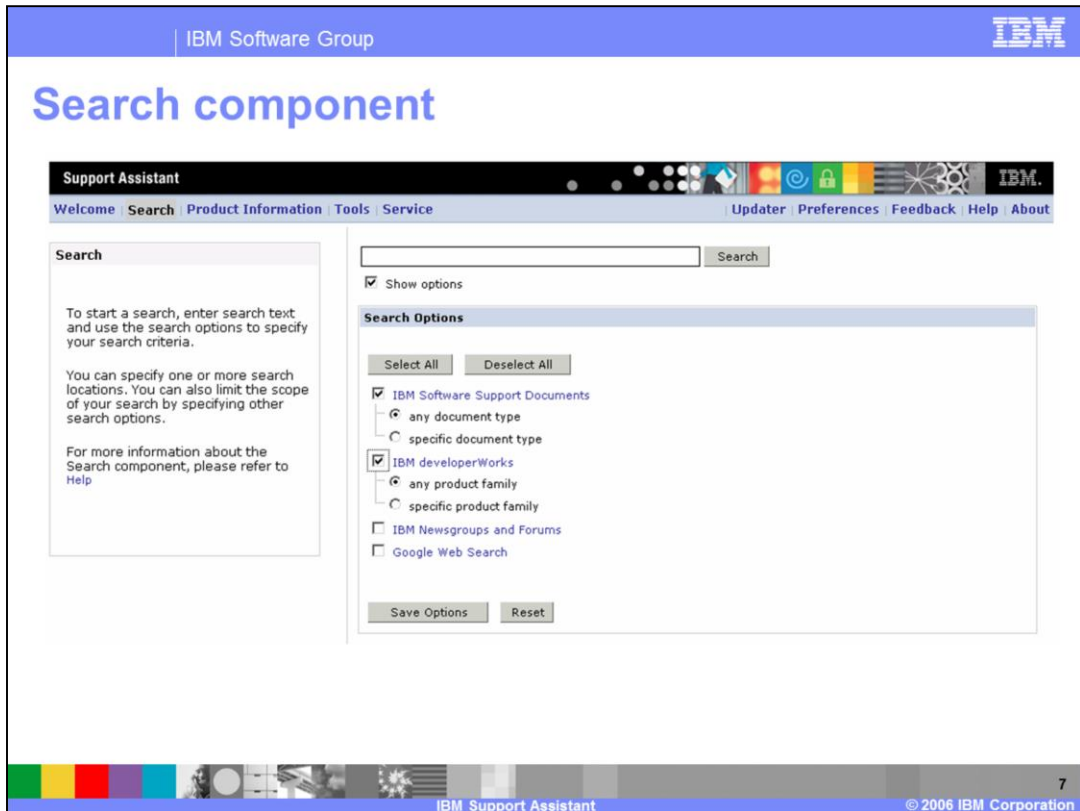
The search component, shown here, enables you to search several commonly-used sources of information from a single interface. You can select to search any or all of the following sources: IBM Software Support, IBM developerWorks, IBM Newsgroups and Forums, and Google. When searching IBM Web sites, you can restrict your search to documents related to certain products or product versions. All of the selected data sources will be searched for the terms you enter in the text box, making it far simpler to locate answers to your problem, since you don't have to perform repetitive searches on multiple Web sites. Additionally, when you install product plug-ins to IBM Support Assistant, these plug-ins can add additional search targets to this view.

The Product Information tab provides you with links to several useful sources of information about the selected product, including the product's home page and support page, discussion forums, software fixes, and troubleshooting information, saving you from having to search the Web to locate these resources.

The service component provides you with a simple interface that streamlines the process of opening problem reports with IBM. By clicking on the "Service" tab, you can both submit new problem reports and update existing problems. Additionally, IBM Support Assistant can collect relevant troubleshooting information from your system and send it to IBM Support. It also has the ability to create a stand-alone data collection tool to retrieve data on a system where IBM Support Assistant is not installed. This can significantly reduce the time-to-resolution for your problems because you can now easily submit relevant data, including log and configuration files at the time you open your problem report.

Memory Dump Diagnostic Tool for Java

- Memory Dump Diagnostic Tool for Java
  - ▸ Available from the "Tools" tab in IBM Support Assistant
- Analyzes Java memory (heap) dumps
  - ▸ Identifies data structures that are likely causes of memory growth (leaks) and their relationships
- Handles several dump formats
  - ▸ IBM portable heap dump (.phd)
  - ▸ IBM text heap dump (.txt)
  - ▸ HPROF dump (hprof.txt)
  - ▸ z/OS® SVC dump (dump.bin)

When installed with WebSphere Application Server V6.1, IBM Support Assistant includes a tool for inspecting Java memory dumps, called the Memory Dump Diagnostic Tool for Java. You can launch it, and any diagnostic plug-ins that you might download through the "Updater" component from the "Tools" tab. This tool can analyze several Java heap dump formats, including the standard dump formats from both the IBM and Sun Java Runtime Environments, and z/OS SVC dumps. It displays and analyzes the data structures in the heap and their relationships, helping you identify the structures that are most likely responsible for memory leakage. If you have downloaded IBM Support Assistant from the IBM software support Web site, MDD4J is not installed by default, but can be installed using the "updater" component.

The Memory Dump Diagnostic Tool for Java can either perform analysis on a single heap dump file or perform comparative analysis on two heap dumps taken over time. You will most often use the first option to analyze a heap dump that was automatically generated at the time of an OutOfMemoryException. This method looks for objects in the heap that have very large reach sizes compared to their largest child objects. The comparative analysis feature examines the changes in the heap between two heap dumps taken over time to analyze which objects have grown the most. If you believe an application to be leaking memory, a comparative analysis of two dumps separated by several minutes will often highlight the objects that are the most likely source of leaking memory, helping you to quickly locate parts of the application's code that should be examined.

Analysis results

- Summary of analysis results, heap contents, size and growth
- Suspected data structures, data types and packages contributing to the growth in heap usage
- Ownership context view showing ownership relationship between major contributors to the footprint and significant constituent data types
- An interactive tree view of the contents of the heap showing all incoming and outgoing references for any object and child objects sorted according to reach size
- Tabular views of all the objects and data-types in the memory dump with filters and sorted columns

The "analysis results" panel displays the results of memory analysis in several ways. It displays first a list of "suspected data structures", which are the objects in your heap that are most likely the cause of memory growth. It also displays the relationships between container objects and objects that they reference. The data in the analysis results screen can be easily sorted and filtered to make it easy to locate objects that interest you. There is also an interactive tree view that allows you to navigate the contents of the heap to see all references to and from any object in the heap.

This section will summarize the information that has been covered.

In summary, IBM Support Assistant is a local serviceability tool that enables you to quickly investigate software problems and work more efficiently with IBM software support. It contains federated search, and product information views, direct access to your problem reports over the Internet, and a tools framework for running diagnostic tools, such as the Memory Dump Diagnostic Tool for Java, which is included with the product when installed with WebSphere Application Server V6.1

Resources

- For more information about IBM Support Assistant, click the "Help" link in the IBM Support Assistant interface

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