



IBM Software Group

IBM® SDK, Java™ Technology Edition, V6

IBM Support Assistant



@business on demand.


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This presentation will cover IBM Support Assistant.

Agenda


- Overview
- Using IBM Support Assistant
- Serviceability tools

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 IBM software problems. It will also provide an overview of some of the serviceability tools that can be added to the IBM Support Assistant workbench.

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Section

Overview



IBM Support Assistant © 2007 IBM Corporation 3

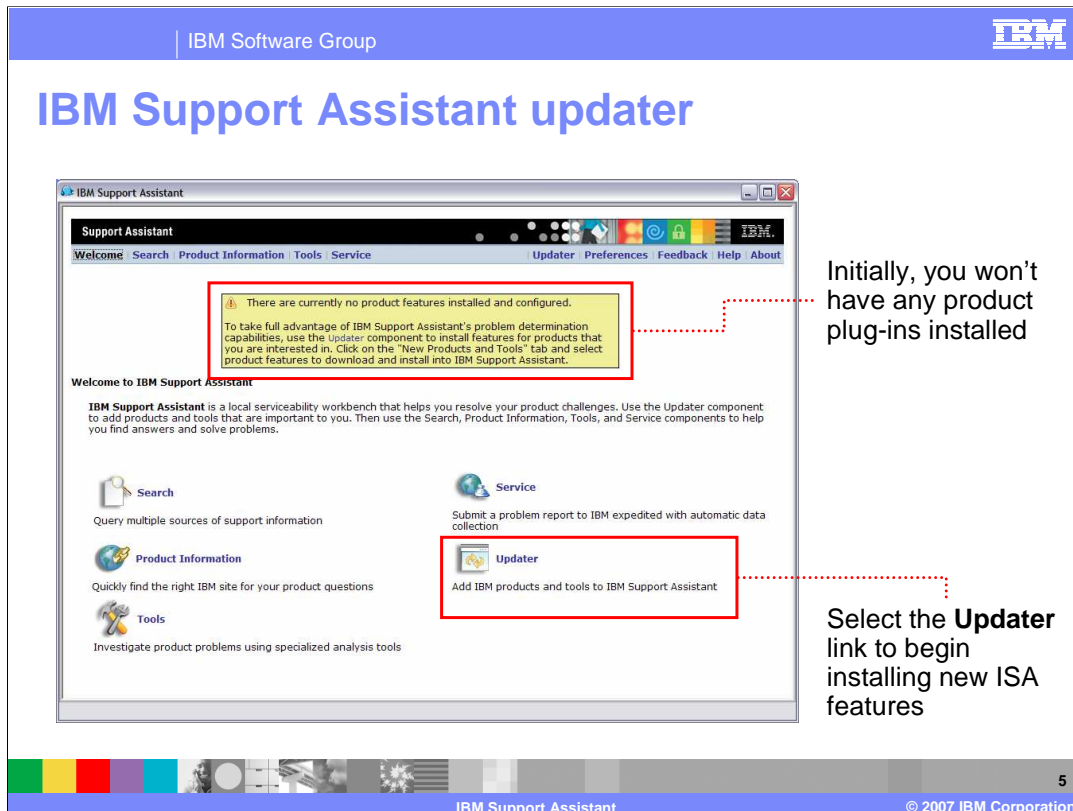
This section will introduce IBM Support Assistant.

What is IBM Support Assistant?

- IBM Support Assistant is a local serviceability workbench that makes it easier and faster to resolve your software product challenges
 - ▶ Available as a free download from:
 - <http://www.ibm.com/software/support/isa>
 - ▶ Runs on AIX[®], Linux[®] (Intel), HP-UX, Solaris[®], and Windows[®]
 - ▶ Offers features such as a federated search, data collection, problem submission
 - ▶ Plug-in components available for many IBM software products
 - Locate plug-ins using the “Updater” link



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. It is a software support enabler for several IBM software products, including the IBM developer kits for Java, WebSphere Application Server, and many others. 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 IBM software products.



The first time that you start the product after installation, you will notice a yellow box at the top of the workbench telling you that you don't have any product plug-ins installed. This is expected and just means that, in order to access Java product documentation and serviceability tools, you will need to install a Java-related product plug-in in your IBM Support Assistant workbench. You can click on the Updater link to find and install product plug-ins. The plug-ins for IBM Developer Kits for Java can be found on the New Plug-ins tab, under New Products and Tools, in the section called Others. In addition to customizing your workbench with product plug-ins, you can install a variety of serviceability tools, which are also located on the New Plug-ins tab, in the section called Common Component Tools.

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
 - ▶ Extensible Verbose Toolkit
 - ▶ Memory Dump Diagnostic for Java
 - ▶ IBM Dump Analyzer for Java
 - ▶ IBM Guided Activity Assistant

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 access to several problem determination tools, which can help you troubleshoot problems in your Java environment. The Extensible Verbose Toolkit is a visualizer for verbose garbage collection output, which you can use to understand and diagnose a variety of memory- and performance-related issues. The Memory Dump Diagnostic Tool for Java allows you to troubleshoot memory-related problems through heap dump analysis. The IBM Dump Analyzer for Java is a tool that performs automatic problem diagnosis on system dumps, and finally, the IBM Guided Activity Assistant, helps walk you step-by-step through a variety of problem determination scenarios. All of these tools – and many others – can be added to your IBM Support Assistant environment using the Updater.

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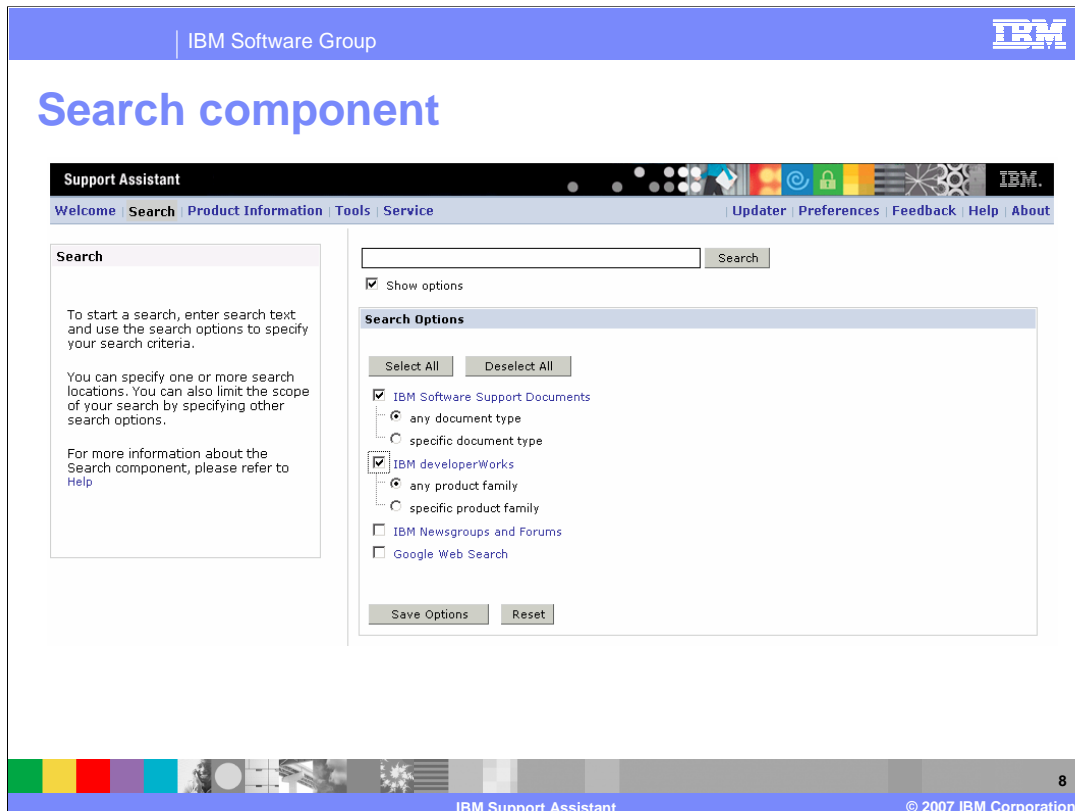
Section

Using IBM Support Assistant

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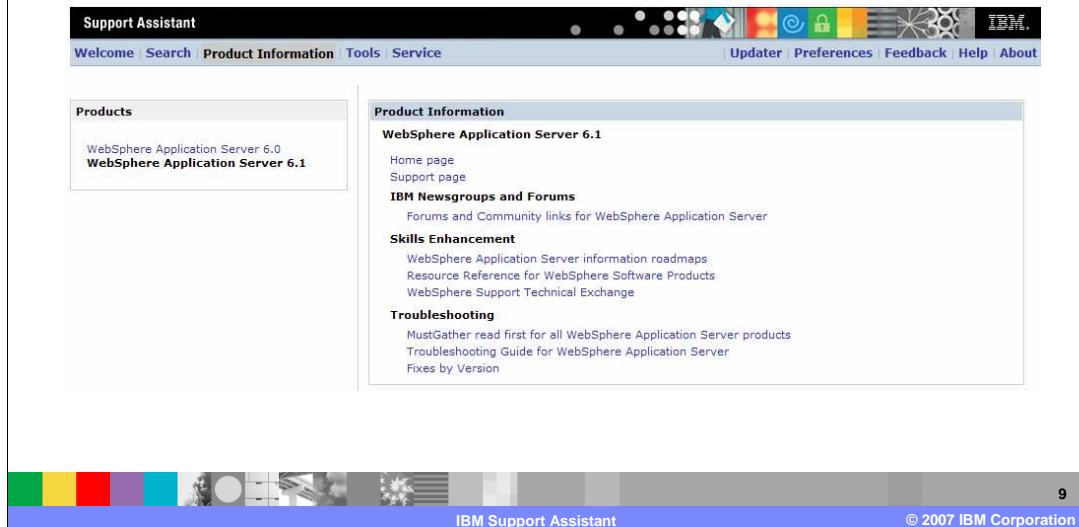
This section will cover the different uses of IBM Support Assistant



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 these 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.

Product Information component

- Provides direct link to product documentation for installed components



The screenshot shows the IBM Support Assistant interface. At the top, there is a navigation bar with the following links: Welcome, Search, Product Information (selected), Tools, Service, Updater, Preferences, Feedback, Help, and About. Below the navigation bar, there are two main sections. On the left, under the heading "Products", there is a list of installed products: "WebSphere Application Server 6.0" and "WebSphere Application Server 6.1". On the right, under the heading "Product Information", there is a detailed view for "WebSphere Application Server 6.1". This view includes links for "Home page" and "Support page", a section for "IBM Newsgroups and Forums" with the sub-link "Forums and Community links for WebSphere Application Server", a section for "Skills Enhancement" with links for "WebSphere Application Server information roadmaps", "Resource Reference for WebSphere Software Products", and "WebSphere Support Technical Exchange", and a section for "Troubleshooting" with links for "MustGather read first for all WebSphere Application Server products", "Troubleshooting Guide for WebSphere Application Server", and "Fixes by Version". The bottom of the screenshot shows a footer with the text "IBM Support Assistant" and "© 2007 IBM Corporation" along with a small number "9".

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.

Service component

- The service component makes it simpler to submit and manage product support issues
 - ▶ Create and submit new problem report (PMR)
 - ▶ View and update existing PMRs
 - ▶ Automatically collect diagnostic data for problem determination
 - Can generate a portable “Collector” tool to gather data on another system
 - ▶ Automatically send diagnostic data to IBM support

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.

Section

Serviceability tools

This section will cover some Java serviceability tools available in the IBM Support Assistant.

Extensible Verbose Toolkit overview

- The Extensible Verbose Toolkit is a visualizer for garbage collection data
 - ▶ Verbose garbage collection logs
 - ▶ `-xtgc:freelist` trace output
 - ▶ Tool works with `optthruput`, `optavgpause`, and `gencon` GC policies
- Works with all IBM SDKs version 1.4.2 or higher
- The tool framework is extensible, and will be expanded over time to include visualization for other collections of data
- The Extensible Verbose Toolkit provides
 - ▶ Raw view of data
 - ▶ Line plots to visualize a variety of GC data characteristics
 - ▶ Tabulated reports with heap occupancy recommendations
 - ▶ View of multiple datasets on a single set of axes
 - ▶ Ability to save data as an image (jpeg) or comma separated file (csv)

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You can launch the Extensible Verbose Toolkit, and any other diagnostic plug-ins that you might download through the “Updater” component, from the “Tools” tab in the IBM Support Assistant workbench. The Extensible Verbose Toolkit allows you to visualize garbage collection data from logs and traces, from any IBM SDK, version 1.4.2 or higher. The “Line plot” portion of the tool displays graphs of over forty different garbage collection data characteristics – including used heap, pause times, and the reason for garbage collection being triggered. You can read in multiple sets of garbage collection logs and display them together on a single set of axes, which allows you to easily compare garbage collection behavior across multiple test runs of an application. The “Report” section of the tool contains a summary of the line plot data, along with information on general garbage collection behavior and heap sizing recommendations based on overall heap occupancy.

Memory Dump Diagnostic for Java

- Memory Dump Diagnostic 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)

The Memory Dump Diagnostic for Java is a tool for inspecting Java memory dumps. 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. The Memory Dump Diagnostic 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 `OutOfMemoryError`. 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.

IBM Dump Analyzer for Java

- Dump Analyzer is a tool for analyzing system dumps
 - ▶ Based on the Diagnostic Tool Framework for Java
- Attempts to automatically diagnose some categories of problems
 - ▶ Crashes, OutOfMemory, deadlocks
 - ▶ Points to additional information and tools, if needed
- Provide the system dump + XML as input to the tool
 - ▶ Run the system dump through jextract to generate the XML metadata for the dump
 - ▶ Use the resulting zip archive as input to Dump Analyzer

IBM Dump Analyzer for Java is intended to perform automated analysis of system dump files produced by the IBM Java VM. The tool is written using the Diagnostic Tool Framework for Java APIs, which are available as a part of the IBM SDK for Java. In order to use the Dump Analyzer tool, you'll need to do some initial pre-processing of your system dump file, which is sometimes called a core file. Run your core file through the dump extractor; this is a command called `jextract` that's packaged with the IBM SDK. The extractor will produce an XML metadata file associated with your system dump and package the XML and the dump file into a zip archive. That resulting zip archive is what you will need to use as input to the Dump Analyzer. The tool will then use the information in the input file to perform some automatic diagnosis, trying to identify the underlying cause of your problem. The tool will offer you suggestions on how to overcome your issue, if possible, or it will point you additional resources and tools that can help you solve your problem.

IBM Guided Activity Assistant

- IBM Guided Activity Assistant brings together information, tools, and processes to help you solve problems yourself in a more consistent manner
 - ▶ **Information:** Technotes, Redbooks®, education videos, and more
 - ▶ **Tools:** Memory Dump Diagnostic for Java, IBM Pattern Modeling and Analysis Tool, ThreadAnalyzer, and more
 - ▶ **Processes:** IBM recommended problem determination process and best practices
- Provides problem determination support for common Java issues
 - ▶ Crash, hang, out of memory problems

The IBM Guided Activity Assistant guides you through the problem determination process. It helps you identify symptoms, collect diagnostic data, analyze the collected data, determine a root cause, and apply a solution to resolve the symptoms. If you are a new user and want to understand what step to take next, the IBM Guided Activity Assistant can explain to you in detail what step is appropriate to take along with the supporting information to give you a deep understanding of the problem and the recommended solutions. If you are an advanced user and want a quick reminder of the steps to take, the tool helps by only showing the information that is necessary for you to quickly move through the steps. At every point along the path, additional information is only a click away if you want to brush up on a specific section.

Section

Summary and reference

This section will summarize the information that has been covered.

Summary

- IBM Support Assistant enables you to investigate problems quickly and work more efficiently with IBM Support
 - ▶ Product plug-ins, federated search, access to PMRs
- Serviceability tools are available through the IBM Support Assistant workbench
 - ▶ Extensible Verbose Toolkit
 - ▶ Memory Dump Diagnostic for Java
 - ▶ IBM Dump Analyzer for Java
 - ▶ IBM Guided Activity Assistant

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 extensible verbose toolkit and the memory dump diagnostic for java.

References

- Download IBM Support Assistant
<http://www.ibm.com/software/support/isa>
- For more information about IBM Support Assistant, click the “Help” link in the IBM Support Assistant interface

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