



# IBM Tivoli Application Dependency Discovery Manager V7.2.1 delivers improved capabilities in discovery, reporting, and in the user interface

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## At a glance

### IBM® Tivoli® Application Dependency Discovery Manager V7.2.1:

- Delivers enhanced discovery capabilities, new storage reporting, improved architecture, and simplified user interface for managing business applications and custom queries
- Helps improve the usability, performance, and time to value of the solution making it even more suitable for the enterprise

For ordering, contact Your IBM representative or an IBM Business Partner.  
For more information contact the Americas Call Centers at  
800-IBM-CALL (426-2255).

Reference: YE001

## Overview

**IBM Tivoli Application Dependency Discovery Manager V7.2.1** delivers enhancements in discovery, reporting, and in the user interface as well as a new architecture designed to enhance performance.

### Highlights

- Asynchronous Discovery brings credential-free scripted discovery for systems where normal access is not available for normal Level 3 sensors. helping to minimize the time required for synchronization.
- A new streaming architecture makes data available when it is discovered, no longer requiring synchronization time.
- Concurrent targeted discovery enables multiple discovery jobs supported on a single discovery server for targeted, small scope refreshes in parallel to scheduled long running discoveries, helping improve discovery efficiency and scalability.
- Enhanced storage topologies and reports show the computer systems, storage arrays, and Fiber-Channel Switch connections.
- Users can create, edit, and delete logical groupings of configuration items (CIs) and dependency mappings into Business Applications, Business Services, and Access Collections from single point on the user interface.
- Enhanced IBM Tivoli Business Service Manager integration and interoperable change history; proactive discovery.

These new capabilities, along with IBM Tivoli Application Dependency Discovery Manager existing technology, continue to offer one of the most robust discovery and application dependency mapping solutions available.

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## Key prerequisites

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Refer to the [Hardware requirements](#) and [Software requirements](#) sections.

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## Planned availability date

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- April 15, 2011 - eGA
- May 6, 2011 - pGA

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## Description

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Enhancements of IBM Tivoli Application Dependency Discovery Manager V7.2.1 help improve the usability, performance, and time to value with enhanced discovery capabilities, improved architecture, and simplified user interface.

Enhancements of IBM Tivoli Application Dependency Discovery Manager V7.2.1:

- Contains extended storage reports for Tivoli Productivity Center discovered data that allows you to see storage components, connections, and dependencies to help improve the availability of the services they deliver and help identify expensive pieces of hardware not being used.
  - Host Bus Adaptor Inventory Report - Lists all computer systems with a host bus adaptor, and whether or not each adaptor is being used.
  - Storage Arrays by Host Report -Lists all storage arrays used by a given computer system.
  - Storage Array Consumers Report - Lists all computer systems, application servers, and business applications that have a dependency upon a given storage array.
  - Fibre Channel Network Report - Lists connections from a fibre channel switch to other computer systems.
- Includes Proactive Discovery capabilities enabling IBM Tivoli Application Dependency Discovery Manager to receive messages from various sources, in real time, about configuration changes to the IT environment that impact relationships or attribute values of discovered resources.
- Uses Asynchronous Discovery that allows for credential free manual script discovery for systems where access is not allowed or where credentials are extremely difficult to obtain. Users can also use Asynchronous Discovery to help improve IBM Tivoli Application Dependency Discovery Manager discovery via IBM Tivoli Monitoring, Secure Shell, by discovering Level 3 data through automatic script deployment and execution. This leverages existing monitoring solutions to keep discovered data accurate and business service views current.
- Enables multiple, concurrent discovery jobs to be supported on a single discovery server. This allows for targeted small scope refreshes in parallel to scheduled long running discoveries, helping improve discovery efficiency and scalability.
- Offers integration with Tivoli Business Service Manager that features new APIs and out-of-the-box configurations that help improve performance, scalability, and reduce latency. Change History for relationships enables support for proactive and multiple concurrent discovery to flow through to Tivoli Business Service Manager. The API cuts roundtrips to get source tokens and the naming reconciliation service API enables alias retrieval.
- Offers an additional type of deployment for TADDM called Streaming Mode. Discovered data flows in parallel from multiple Discovery Servers to the Enterprise Database, sometimes referred to as "eTADDM". In streaming mode, the Enterprise Manager is used to view discovered data, topologies, reporting,

and analytical information. Data is available as soon as it is discovered. It typically requires less hardware and resources, and helps eliminate merging problems when consolidating discovery data.

- Offers a robust and extendable way to create, edit, and delete business applications, business service, and collections from a single point in the user interface. Users will also have an easy way to view custom queries and their results in the discovery browser.
- Uses Grouping Composer that brings more flexibility, ease of use, and less maintenance when creating application descriptors. Users have the ability to manage Business Applications in the TADDM Web Console and will no longer be required to deploy descriptor files to the target servers. All rules will instead exist on the TADDM server.

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### Accessibility by people with disabilities

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A U.S. Section 508 Voluntary Product Accessibility Template (VPAT) containing details on accessibility compliance can be requested at

[http://www.ibm.com/able/product\\_accessibility/index.html](http://www.ibm.com/able/product_accessibility/index.html)

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### Section 508 of the U.S. Rehabilitation Act

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IBM Tivoli Application Dependency Discovery Manager is capable as of May 6, 2011, when used in accordance with IBM's associated documentation, of satisfying the applicable requirements of Section 508 of the Rehabilitation Act, provided that any assistive technology used with the product properly interoperates with it. A US Section 508 Voluntary Product Accessibility Template (VPAT) can be requested on the following website

<http://w3-03.ibm.com/able/index.html>

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### Program number

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Program number	VRM	Program name
5724-N55	7.2.1	IBM Tivoli Application Dependency Discovery Manager

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### Publications

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No publications are shipped with this program.

Documentation for all Tivoli products Tivoli Documentation Central includes links to the information centers for all Tivoli products.

<http://www.ibm.com/developerworks/wikis/display/tivolidoccentral/Home>

IBM Tivoli Application Dependency Discovery Manager documentation at Tivoli Documentation Central includes links to the information centers for all versions of the Tivoli Application Dependency Discovery Manager product.

<http://www.ibm.com/developerworks/wikis/display/tivolidoccentral/Tivoli+Application+Dependency+Discovery+Manager>

**Specified operating environment**

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**Hardware requirements**

Use this information to estimate the processor, memory, and disk space requirements for the required IBM Tivoli Application Dependency Discovery Manager Domain Manager, and Enterprise Domain Manager servers, anchors, and Windows® gateways.

In general, you should use a fast, multiprocessor system for the Tivoli Application Dependency Discovery Manager server. Tivoli Application Dependency Discovery Manager Domain Manager is designed to take advantage of multiple processors and parallel operations. These guidelines provide general recommendations, but remember that other factors (such as the number of users) can affect server utilization.

Note: Running the IBM Tivoli Application Dependency Discovery Manager server on virtualized hardware can cause performance problems.

These recommendations assume that the IBM Tivoli Application Dependency Discovery Manager database is installed on a separate system. You can install IBM Tivoli Application Dependency Discovery Manager with a local database, but this is not recommended for production environments.

Use this table to determine the server hardware requirements for your environment. The deployment type is based upon the number of server equivalents to be discovered.

**Table 1: IBM Tivoli Application Dependency Discovery Manager server hardware requirements**

Server type	Processors	Processor speed	Memory
Discovery server or storage server with <2000 SEs	2	2 GHz minimum, 3 Ghz recommended	4 GB
Domain server with <2000 SEs	2	2 GHz minimum, 3 Ghz recommended	4 GB
Discovery server or storage server with >2000 SEs	4	2 GHz minimum, 3 Ghz recommended	8 GB
Domain server with 2000-10,000 SEs	4	2 GHz minimum, 3 Ghz recommended	8 GB
Synchronization server with >10,000 SEs	4	2 GHz minimum, 3 GHZ recommended	8 GB
Anchor	2	1 GHZ	2 GB
windows gateway	2	2 GHz	2 GB

**Notes:**

- The discovery, domain and synchronization server deployment disk space requirements are:
  - 5 GB for product installation

- 50 GB additional space (for DLA books, log and trace files, and other data)
- The anchor disk space requirement is:
  - 5 GB
- The Windows gateway disk space requirement is:
  - 2 GB
- For a synchronization server deployment, 64-bit hardware is required; 32-bit systems have significant scalability limitations.
- For a streaming server deployment, 64-bit hardware is required for all storage servers and discovery servers that use more than 24 concurrent discover worker threads. A discover worker thread is a thread that runs sensors.
- For a domain server deployment, 64-bit hardware is required for any domain server that manages more than 2000 servers or 2 million configuration items (CIs). On 32-bit Windows servers, the 4-Gigabyte Tuning feature must be enabled. For more information, refer to [http://msdn.microsoft.com/en-us/library/bb613473\(VS.85\).aspx](http://msdn.microsoft.com/en-us/library/bb613473(VS.85).aspx)
- For an anchor server, when exchanging data, you must use Secure Shell (SSH) version 2 protocol.

### **Windows gateways**

If your network contains Windows systems, you must specify a Windows system to serve as a gateway server to discover information about the Windows systems that are running in your environment. This gateway server should be in the same firewall zone as the discovered Windows hosts, and must have SSH access from the server. All Windows gateways must be running a supported version of either Bitvise WinSSHD or the Cygwin SSH daemon. (For more information, refer to the *Tivoli Application Dependency Discovery Manager Administrator's Guide*).

You do not need to configure Windows gateways during the installation process, but you must include gateways in your installation plan and verify the system requirements for candidate systems. After the installation, you can use the Product Console to configure hosts to serve as Windows gateways on your network.

An anchor and a gateway running on the same Windows system is supported.

### **Database server hardware requirements**

The processor, memory, and disk space requirements for Tivoli Application Dependency Discovery Manager database servers are based on the size of your deployment (small, medium, or large).

Use this table to determine the database server hardware requirements for your environment.

**Note:** These recommendations assume that the IBM Tivoli Application Dependency Discovery Manager database is installed on a separate system. You can install IBM Tivoli Application Dependency Discovery Manager with a local database, but this is not recommended for production environments. Keep in mind that database performance is also affected by the speed of input/output operations.

Deployment type	Processors	Processor speed	Memory
Small (<2,000 SEs)	1	2 GHz minimum, 3 GHz recommended	1 GB
Medium (2,000-5,000 SEs)	2	2 GHz minimum, 3 GHz recommended	2 GB
Large (5,000-10,000 SEs)	2	2 GHz minimum, 3 GHz recommended	3 GB

Enterprise (>10,000 SES) 4	2 GHZ minimum, 4 GB
	3 GHZ
	recommended

**Note:**

Database server hardware requirements disk space requirements:

- Minimum of two physical drives (three or more are recommended).
- Initial disk space of 160 MB (required for creating the TADDM schema).
- Disk space for discovery data, use either of these formulas to estimate disk space requirement (assuming Level 3 discovery):
  - Configuration items x 7,000 bytes **or**
  - Server equivalents x 1,400,000 bytes
- Additional disk space for ongoing growth is 10 percent weekly.

**Software requirements**

Each Tivoli Application Dependency Discovery Manager Domain Manager server must be running a supported operating system and Java™ virtual machine (JVM).

Important: Be sure to read the following important information before installing the Tivoli Application Dependency Discovery Manager server:

- You must install the latest patches and updates from the operating system vendor before installing the Tivoli Application Dependency Discovery Manager server.
- The server host's file must include the IP address and host name of the local system. The host's file is in one of the following locations:
  - Windows systems: c:\Windows\system32\drivers\etc\hosts
  - Linux and UNIX systems: /etc/hosts
- Specify both the fully qualified host name and the short name of the server. The format of a host's file entry is as follows:
 

```
ip_address hostname (hostname_2 ... hostname_n) (#comment)
```

The fully qualified host name must occur before the short name in the host's file. Alternatively, you can configure the host name resolution order for your system to use DNS resolution before checking the host's file. For more information about how to configure the host name resolution order, refer to the documentation for your operating system.

- The Tivoli Application Dependency Discovery Manager server supports only the IBM Java Runtime Environment (JRE).
- The user ID, under which the Tivoli Application Dependency Discovery Manager server runs, must have read, write, and execute permissions for its installation directory and contents, and for the temporary directory of the system. By default, on Windows systems, the installation directory is
 

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/opt/IBM/taddm on Linux® and UNIX® systems or c:\ibm\taddm
```

Typically, the temp directory is %TEMP% on a Windows system and /tmp on Linux and UNIX systems.

- On UNIX systems, the user ID under which the TADDM server runs must have an open file limit of at least 8,192 files. You can set the open file limit using the ulimit command.
- On Linux and UNIX systems, the Tivoli Application Dependency Discovery Manager server user ID must also have root execution permission for the nmap command. For detailed information about nmap and the Stack Scan sensor, refer to the stack-scan-sensor topic in the Tivoli Application Dependency Discovery Manager Sensor Reference.
- On supported AIX® operating systems, you must have an extraction utility available in the /usr/bin or /usr/local/bin directory. If you did not install the

extraction utility with the operating system, you must install an extraction utility into one of those directories before beginning the Tivoli Application Dependency Discovery Manager server installation.

- The Tivoli Application Dependency Discovery Manager server uses a 64-bit JVM automatically on a 64-bit system. A 64-bit JVM is supported on AIX, Solaris, Windows, Linux, and Linux on System z® operating systems. The installation process uses Java 1.5 JRE 32 bit. To run a 32-bit Java GUI on 64-bit hardware with a Linux operating system, you need the following 32-bit shared library files:
  - libdl.so.2
  - libpthread.so.0
  - libstdc++.so.5
  - libXmu.so.6
  - libXt.so.6
  - libX11.so.6
  - libm.so.6
  - libXtst.so.6
  - libXp.so.6
  - libc.so.6
  - lib/ld.so.1
  - libXext.so.6
  - libSM.so.6
  - libICE.so.6
  - libXau.so.6
  - libXdmcp.so.6
- Discovered systems might be running operating systems and applications that are no longer supported by their vendors. While every effort is made to fix issues encountered on these targets of a discovery, you might have to reproduce the problem on a vendor-supported operating system or application, and use the vendor's support.

The following table provides details about operating systems that are supported for Tivoli Application Dependency Discovery Manager servers.

Note: For the most current information about supported operating systems, refer to the support matrix at

[http://www.ibm.com/software/sysmgmt/products/support/Tivoli\\_Supported\\_Platforms.html](http://www.ibm.com/software/sysmgmt/products/support/Tivoli_Supported_Platforms.html)

#### Supported operating systems for TADDM Domain Manager server and TADDM Enterprise Manager server

Operating system	Comments
AIX V6.1 AIX V7.1	Only 64-bit AIX is supported.
Red Hat Enterprise Linux 4.0 x86	Some problems might occur on updates earlier than Red Hat Enterprise Linux, Update 6 (for example, out of memory conditions and ClassNotFouindexceptions). If you encounter these problems, upgrade to update 6.
Red Hat Enterprise Linux 4.0 x86_64	
Red Hat Enterprise Linux 4.0 for System z with update 3	
	The Security-Enhanced Linux (SELinux) security system must be disabled. You can disable SELinux by specifying SELINUX=disabled in the /etc/sysconfig/selinux configuration file. (Restart your system after

	modifying the file.)
	On 64-bit Linux systems, the libstdc++.so.5 library is required.
Red Hat Enterprise Linux 5.0 x86	The libxp-1.0.0-8.i386.rpm package must also be installed. (This package is available from the Server directory on disk 2 of the Red Hat Enterprise Linux 5.0 distribution media.)
Red Hat Enterprise Linux 5.0 x86_64	
Red Hat Enterprise Linux 5.0 for System z	The Security-Enhanced Linux (SELinux) security system must be disabled. You can disable SELinux by specifying SELINUX=disabled in the /etc/sysconfig/selinux configuration file. (Restart your system after modifying the file.)
	On 64-bit Linux systems, the libstdc++.so.5 library is required.
Red Hat Enterprise Linux 6.0 x86	
Red Hat Enterprise Linux 6.0 x86_64	
Red Hat Enterprise Linux 6.0 for System z	The Security-Enhanced Linux (SELinux) security system must be disabled. You can disable SELinux by specifying SELINUX=disabled in the /etc/sysconfig/selinux configuration file. (Restart your system after modifying the file.)
	On 64-bit Linux systems, the libstdc++.so.5 library is required.
Solaris 10 SPARC	
SUSE Linux Enterprise Server 10.0 x86	SUSE Fix Pack 1 is also required.
	On 64-bit Linux systems, the libstdc++.so.5 library is required.
SUSE Linux Enterprise Server 10.0 x86_64	
SUSE Linux Enterprise Server 10.0 for System z	
	On 64-bit Linux systems, the libstdc++.so.5 library is required.
SUSE Linux Enterprise Server 11.0 x86	
SUSE Linux Enterprise Server 11.0 x86_64	
SUSE Linux Enterprise Server 11.0 for System z	
Microsoft Windows Server 2008 Standard x86 Edition, Enterprise x86 Edition	Requires Microsoft® Service Pack 2.
Microsoft Windows Server 2008 Standard x86-64 Edition, Enterprise x86-64 Edition	windows gateways are supported only.



HP-UX 11i v23 and v31 are also supported on the endpoint.

## IBM Tivoli Application Dependency Discovery Manager Database Server

Each Tivoli Application Dependency Discovery Manager domain database server must be running a supported relational database.

For testing or demonstration purposes, you can install the Tivoli Application Dependency Discovery Manager domain database on the same system as the Tivoli Application Dependency Discovery Manager Domain Manager or Enterprise Domain Manager server. The installer can optionally install a local DB2® database as part of the Tivoli Application Dependency Discovery Manager installation process, or create the required tables using an existing local DB2 installation. (To use a local Oracle database, you must install the database before installing the Tivoli Application Dependency Discovery Manager server.)

In a production environment, you must install a supported database on a separate system before installing the Tivoli Application Dependency Discovery Manager server. Any of the following databases can support a Tivoli Application Dependency Discovery Manager domain database:

TADDM domain database server	Support details
IBM DB2 V9.5	Fix Pack 7, or later required.
IBM DB2 V9.7	Fix Pack 3, or later required.
IBM DB2 for z/OS® V9.1	
IBM DB2 V9.5	Latest fix pack required.
Oracle 10g	Oracle odbc14.jar JDBC driver file required.
Oracle 11g	Oracle Real Application Clusters option not supported.

For optimal performance, install the following database components on separate physical devices or disk arms:

- Database tables and indexes (use four or more physical devices or disk arms)
- Database logs
- Database temporary space

If you are using DB2 on a Linux system, and you plan to create the TADDM database and tables during the installation process, make sure the SHMMAX and SHMALL shared memory kernel parameters meet the required minimum values before you install TADDM. For more information, refer to the DB2 documentation at

<http://publib.boulder.ibm.com/infocenter/db2luw/v9r5/index.jsp>

For information on configuring, monitoring, and tuning your database, refer to the Relational Database Design and Performance Tuning for DB2 Database Servers white paper at

<http://www.ibm.com/software/brandcatalog/ismlibrary/>

Many of the concepts in the white paper are applicable to the Oracle database manager.

The program's specifications and specified operating environment information may be found in documentation accompanying the program, if available, such as a readme file, or other information published by IBM, such as an announcement letter. Documentation and other program content may be supplied only in the English language.

## Planning information

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### **Direct customer support**

For technical support or assistance, contact your IBM representative or visit

<http://www.ibm.com/support>

### **Packaging**

IBM Tivoli Application Dependency Discovery Manager V7.2.1 is distributed with:

- International Program License Agreement (Z125-3301)
- License Information document (L-JEGN-8CVQEA)
- CD ROM
- Publications (refer to the [Publications](#) section)

This program, when downloaded from a Web site, contains the applicable IBM license agreement and License Information, if appropriate, and will be presented for acceptance at the time of installation of the program. For future reference, the license and License Information will be stored in a directory such as LICENSE.TXT.

### **Security, auditability, and control**

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IBM Tivoli Application Dependency Discovery Manager uses the security and auditability features of the operating system software and the Tivoli process automation engine. The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communication facilities.

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## Software Services

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IBM Software Services has the breadth, depth, and reach to manage your services needs. You can leverage the deep technical skills of our lab-based, software services team and the business consulting, project management, and infrastructure expertise of our IBM Global Services team. Also, we extend our IBM Software Services reach through IBM Business Partners to provide an extensive portfolio of capabilities. Together, we provide the global reach, intellectual capital, industry insight, and technology leadership to support a wide range of critical business needs.

To learn more about IBM Software Services or to contact a Software Services sales specialist, visit

<http://www.ibm.com/software/sw-services/>

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## Licensing metric definitions and pricing examples

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Refer to:

- Software Announcement [209-445](#), dated November 17, 2009

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## Ordering information

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This product is only available via Passport Advantage®. It is not available as shrinkwrap.

IBM Tivoli Application Dependency Discovery Manager  
Product group: Tivoli IT Service Management  
Product identifier description: 5724-N55

Product category: Tivoli Change and Config Mgt Database

### **Passport Advantage customer: Media pack entitlement details**

Customers with active maintenance or subscription for the products listed are entitled to receive the corresponding media pack.

IBM Tivoli Application Dependency Discovery Manager V7.2.1 Media pack description	Part number
IBM Tivoli Application Dependency Discovery Manager V7.2.1 Media Pack MP ML	BJ0WXML

### **Current licensees**

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#### ***New licensees***

Orders for new licenses will be accepted now.

Shipment will begin on the planned availability date.

### **Basic license**

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Passport Advantage allows you to have a common anniversary date for Software Maintenance renewals, which can simplify management and budgeting for eligible new versions and releases (and related technical support) for your covered products. The anniversary date, established at the start of your Passport Advantage Agreement, will remain unchanged while your Passport Advantage Agreement remains in effect. New software purchases will initially include twelve full months of Software Maintenance. Software Maintenance in the second year (the first year of renewal) can be prorated to be coterminous with your common anniversary date. Thereafter, all Software Maintenance will renew at the common anniversary date for twelve full months of maintenance.

Refer to the IBM International Passport Advantage Agreement and to the *IBM Software Support Handbook* for specific terms relating to, and a more complete description of, technical support provided through Software Maintenance.

To order a media pack for Passport Advantage, specify the part number in the desired quantity from the following table:

IBM Tivoli Application Dependency Discovery Manager V7.2.1 Media pack description	Part number
IBM Tivoli Application Dependency Discovery Manager V7.2.1 Media Pack MP ML	BJ0WXML

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## **Terms and conditions**

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The information provided in this announcement letter is for reference and convenience purposes only. The terms and conditions that govern any transaction with IBM are contained in the applicable contract documents such as the IBM International Program License Agreement, IBM International Passport Advantage Agreement, and the IBM Agreement for Acquisition of Software Maintenance.

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#### ***Licensing***

IBM International Program License Agreement including the License Information document and Proof of Entitlement (PoE) govern your use of the program. PoEs are required for all authorized use. Part number products only, offered outside of

Passport Advantage, where applicable, are license only and do not include Software Maintenance.

These programs are licensed under the IBM Program License Agreement (IPLA) and the associated Agreement for Acquisition of Software Maintenance, which provide for support with ongoing access to releases and versions of the program. IBM includes one year of Software Subscription and Support (also referred to as Software Maintenance) with the initial license acquisition of each program acquired. The initial period of Software Subscription and Support (also referred to as Software Maintenance) can be extended by the purchase of a renewal option, if available. These programs have a one-time license charge for use of the program and an annual renewable charge for the enhanced support that includes telephone assistance (voice support for defects during normal business hours), as well as access to updates, releases, and versions of the program as long as support is in effect.

#### ***License Information form number***

- L-JEGN-8CVQEA

The program's License Information will be available for review on the IBM Software License Agreement website

<http://www.ibm.com/software/sla/sladb.nsf>

#### ***Limited warranty applies***

Yes

#### ***Limited warranty***

IBM warrants that when the program is used in the specified operating environment, it will conform to its specifications. The warranty applies only to the unmodified portion of the program. IBM does not warrant uninterrupted or error-free operation of the program or that IBM will correct all program defects. You are responsible for the results obtained from the use of the program.

IBM provides you with access to IBM databases containing information on known program defects, defect corrections, restrictions, and bypasses at no additional charge. For further information, consult the IBM Software Support Handbook found at

<http://www.ibm.com/support/handbook>

IBM will maintain this information for at least one year after the original licensee acquires the program (warranty period).

#### ***Program technical support***

Technical support of a program product version or release will be available for a minimum of five years from the general availability date, as long as your Software Subscription and Support (also referred to as Software Maintenance) is in effect. This technical support allows you to obtain assistance (via telephone or electronic means) from IBM for product-specific, task-oriented questions regarding the installation and operation of the program product. Software Subscription and Support (Software Maintenance) also provides you with access to updates (modifications or fixes), releases, and versions of the program. You will be notified, via announcement letter, of discontinuance of support with 12 months' notice. If you require additional technical support from IBM, including an extension of support beyond the discontinuance date, contact your IBM representative or IBM Business Partner. This extension may be available for a fee.

#### ***Money-back guarantee***

If for any reason you are dissatisfied with the program and you are the original licensee, you may obtain a refund of the amount you paid for it, if within 30 days of

your invoice date you return the program and its PoE to the party from whom you obtained it. If you downloaded the program, you may contact the party from whom you acquired it for instructions on how to obtain the refund.

For clarification, note that (1) for programs acquired under the IBM International Passport Advantage offering, this term applies only to your first acquisition of the program and (2) for programs acquired under any of IBM's On/Off Capacity on Demand (On/Off CoD) software offerings, this term does not apply since these offerings apply to programs already acquired and in use by you.

### **Other terms**

#### **Volume orders (IVO)**

No

#### **IBM International Passport Advantage Agreement**

##### **Passport Advantage applies**

Yes, and through the Passport Advantage website at

<http://www.ibm.com/software/passportadvantage>

##### **Software Subscription and Support (Software Maintenance) applies**

Yes. Software Subscription and Support (also referred to as Software Maintenance) is included with licenses purchased through Passport Advantage and Passport Advantage Express®. Product upgrades and Technical Support are provided by the Software Subscription and Support (Software Maintenance) offering as described in the Agreements. Product upgrades provide the latest versions and releases to entitled software and Technical Support provides voice and electronic access to IBM support organizations, worldwide.

IBM includes one year of Software Subscription and Support (Software Maintenance) with each program license acquired. The initial period of Software Subscription and Support (Software Maintenance) can be extended by the purchase of a renewal option, if available.

While your Software Subscription and Support (Software Maintenance) is in effect, IBM provides you assistance for your routine, short duration installation and usage (how-to) questions, and code-related questions. IBM provides assistance via telephone and, if available, electronic access, only to your information systems (IS) technical support personnel during the normal business hours (published prime shift hours) of your IBM support center. (This assistance is not available to your end users.) IBM provides Severity 1 assistance 24 hours a day, 7 days a week. For additional details, consult your IBM Software Support Handbook at

<http://www.ibm.com/support/handbook>

Software Subscription and Support (Software Maintenance) does not include assistance for the design and development of applications, your use of programs in other than their specified operating environment, or failures caused by products for which IBM is not responsible under the applicable agreements.

For additional information about the International Passport Advantage Agreement and the IBM International Passport Advantage Express Agreement, visit the Passport Advantage website at

<http://www.ibm.com/software/passportadvantage>

##### **IBM Operational Support Services - SoftwareXcel**

No

**System i Software Maintenance applies**

No

**Variable charges apply**

No

**Educational allowance available**

Not applicable.

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**IBM Electronic Services**

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IBM has transformed its delivery of hardware and software support services to help you achieve higher system availability. Electronic Services is a web-enabled solution that offers an exclusive, no-additional-charge enhancement to the service and support available for IBM servers. These services are designed to provide the opportunity for greater system availability with faster problem resolution and preemptive monitoring. Electronic Services comprises two separate, but complementary, elements: Electronic Services news page and Electronic Services Agent.

The Electronic Services news page is a single Internet entry point that replaces the multiple entry points traditionally used to access IBM Internet services and support. The news page enables you to gain easier access to IBM resources for assistance in resolving technical problems.

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