Abstract

This white paper discusses native 64-bit support that is made available for selected products in EMC® Documentum® version 6.5. This paper lists the Documentum products that can be hosted in native 64-bit environments. It introduces concepts related to 64-bit and answers questions pertaining to native 64-bit support available in Documentum 6.5.
Table of Contents

Executive summary ........................................................................................................... 4
Introduction ....................................................................................................................... 4
  Audience ......................................................................................................................... 4
Native 64-bit support ........................................................................................................ 4
  What is a 64-bit processor? ........................................................................................... 4
  What is a 64-bit operating system? ................................................................................ 4
  What are the modes in which the DFS-, DFC-, and WDK-based products and the Content
  Server will run? ................................................................................................................ 4
  What is a 64-bit application server? ............................................................................... 7
  What is native 64-bit support? ......................................................................................... 7
Breaking new ground in native 64-bit support ............................................................. 8
  What are the prerequisites to run the WDK-, DFC-, and DFS-based Documentum 6.5 products
  in the native 64-bit mode? ............................................................................................ 10
  When you run the WDK-, DFC-, and DFS-based Documentum 6.5 products in the native 64-bit
  mode, will they run as 64-bit by default? ..................................................................... 10
  How can 32-bit Documentum 6.5 products be ported to a 64-bit platform? ................. 10
  What are the configuration changes that must be made to run Documentum 6.5 products on a
  64-bit platform? ............................................................................................................. 10
  How is the 64-bit JVM tuned? ....................................................................................... 10
Conclusion ....................................................................................................................... 11
References ....................................................................................................................... 11
Executive summary

Users of the EMC® Documentum® product family are processing more and more data in their attempt to satisfy specialized needs in areas such as security, search, classification, and storage utilization or to automate high-volume transactional processes and complex collaborative processes. As the complexity of tasks increases, performance limitations of using 32-bit servers become apparent.

With version 6.5, EMC Documentum introduces native 64-bit support for all Web Development Kit (WDK), Documentum Foundation Classes (DFC), and Documentum Foundation Services (DFS) based products. As a result, when these products are hosted in the native 64-bit mode on 64-bit application servers that run using 64-bit JVM on 64-bit operating systems and 64-bit processors, performance of the applications will be better. The addition of 64-bit support provides larger memory address space and increased performance to support very large databases.

Introduction

This white paper answers commonly asked questions about native 64-bit support in Documentum 6.5.

In this white paper, 64-bit computing is defined as support for a 64-bit address space, which is support for concurrent use of more than 4 GB of memory by an executable program. A 64-bit executable is a process that can support a 64-bit address space. In a 64-bit world, pointers are 64 bits (8 bytes) and some integer types, initially 32 bits, are now 64 bits. Native 64-bit support is defined as the ability to run 64-bit applications on 64-bit operating systems. All WDK-, DFS-, and DFC-based products of Documentum 6.5 are native 64-bit applications that you can host in the 64-bit native mode on a 64-bit platform.

Audience

This white paper is intended for customers, partners, and EMC support personnel who are considering deploying Documentum applications on a 64-bit platform.

Native 64-bit support

What is a 64-bit processor?

A 64-bit processor is a microprocessor with 64-bit registers, address buses, or data buses of that size — useful for memory and data intensive applications such as computer-aided design (CAD) applications, database management systems, technical and scientific applications, and high-performance servers. The 64-bit computer architecture provides higher performance than the 32-bit architecture by handling twice as many bits of information in the same clock cycle.

The 64-bit processor is backwards compatible with older applications and operating systems. It detects whether an application or operating system is 16-bit, 32-bit, or 64-bit and computes accordingly.

What is a 64-bit operating system?

A 64-bit operating system is capable of storing information in memory that is at least 64 bits or 8 bytes wide. You need a 64-bit operating system to run applications in the 64-bit mode. While 64-bit CPUs have existed in supercomputers since the 1960s and machines and servers since the 1990s, 64-bit operating systems are relatively new concepts in the computer world.

What are the modes in which the DFS-, DFC-, and WDK-based products and the Content Server will run?

Table 1 identifies the modes in which the DFS-, DFC-, and WDK-based Documentum 6.5 products and the Content Server will run across operating systems. The information in Table 1 is based on the Documentum 6.5 System Certification Requirements Document (CRD).
<table>
<thead>
<tr>
<th>Operating system (OS)</th>
<th>Mode</th>
<th>DFC</th>
<th>DFS</th>
<th>WDK</th>
<th>Content Server</th>
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<tr>
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<td>Native 64-bit mode</td>
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<td>X</td>
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<td>Not supported</td>
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</tbody>
</table>
What is a 64-bit application server?
A 64-bit application server runs on a 64-bit operating system with 64-bit Java. The application server is
installed on a 64-bit platform using a 64-bit installable file.
Third-party 64-bit application servers that Documentum 6.5 products can run on are:
• Apache Tomcat 5.5.25
• Apache Tomcat 6.0.16
• BEA WebLogic Server 9.2 MP2
• BEA WebLogic Server 10 MP1
• IBM WebSphere Application Server V6.1 Fix Pack 13 (6.1.0.13)
• Oracle AS 10g R3 (10.1.3.3.0)
• Red Hat JBoss AS 4.2.2
• Sun Java System Application Server 8.2
• Sun Java System Application Server 9.1 UR1

Note: The 32-bit version of these application servers will continue to be supported in Documentum 6.5.

What is native 64-bit support?
Native 64-bit support refers to the ability to run 64-bit applications on 64-bit operating systems. All WDK-,
DFC-, and DFS-based products of Documentum 6.5 can be hosted in the 64-bit native mode on 64-bit
platforms.
Breaking new ground in native 64-bit support

EMC has tested the hosting of the WDK-, DFC-, and DFS-based Documentum 6.5 products to run in the native 64-bit mode in a 64-bit environment. The product installation guide or release notes document provides information about the relevant Documentum 6.5 product.

Documentum 6.5 offers partial native 64-bit support only, with Documentum Content Services for SAP. Content Services for SAP Server such as WebAdmin and Agent (HVP Worker) can run in the native 64-bit mode. However, Content Services for SAP Client such as View, Manage, and Capture can run only in the 32-bit compatibility mode on a 64-bit platform.

The following Documentum 6.5 products can run in the native 64-bit mode:

- Documentum Administrator (DA)
- Documentum API (DFC)
- Documentum Archive Services for SAP (AS SAP)
- Documentum Business Activity Monitor (BAM)
- Documentum Collaborative Services (DCS)
- Documentum Compliance Manager (DCM)
- Documentum Content Services for SAP (CS SAP)
- Documentum Digital Asset Manager (DAM)
- Documentum Document Image Services (DIS)
- Documentum ECI Services (ECIS)
- Documentum Forms Builder
- Documentum Foundation Services (DFS)
- Documentum Process Builder
- Documentum Process Integrator
- Documentum Process Services for SAP (PS SAP)
- Documentum Records Manager (DRM)
- Documentum Reporting Services (DRS)
- Documentum Retention Policy Services (RPS)
- Documentum Site Caching Services (SCS)
- Documentum TaskSpace (TSP)
- Documentum WebDAV Services (WDS)
- Documentum Web Development Kit (WDK)
- Documentum Web Publisher (WP)
- Documentum Web Publisher Page Builder (WPPAB)
- Documentum Web Publisher Portlet Builder (WPPOB)
- Documentum Webtop (WT)
- Documentum Webtop Extended Search (WTXS)
Figure 1 illustrates the 32- and 64-bit platforms on which Documentum 6.5 products can work.
What are the prerequisites to run the WDK-, DFC-, and DFS-based Documentum 6.5 products in the native 64-bit mode?

You must ensure that your 64-bit environment comprises the following prerequisite components before you run the Documentum 6.5 products as native 64-bit applications:

- 64-bit processor
- 64-bit operating system
- 64-bit JVM
- 64-bit application server (if needed). Ensure that the application server is bundled with 64-bit JVM.

When you run the WDK-, DFC-, and DFS-based Documentum 6.5 products in the native 64-bit mode, will they run as 64-bit by default?

Yes. By default, the specified Documentum 6.5 products will run as 64-bit applications in a 64-bit environment.

How can 32-bit Documentum 6.5 products be ported to a 64-bit platform?

All DFC-based Documentum 6.5 products must install a 64-bit compatible JVM before porting a 32-bit Documentum 6.5 application to a 64-bit platform.

What are the configuration changes that must be made to run Documentum 6.5 products on a 64-bit platform?

Check your application server documentation for information about configuration changes you need to make to run the relevant Documentum 6.5 products on a 64-bit platform. For example, the IBM WebSphere Application Server V6.1 Fix Pack 13 (6.1.0.13) ships with platform-specific 32-bit and 64-bit installers.

How is the 64-bit JVM tuned?

The JVM documents of the relevant vendor provide information about tuning a 64-bit JVM and garbage collection parameters.
Conclusion

All 32-bit Documentum 6.5 products can run in the 32-bit native mode on a 32-bit operating system and in
the 32-bit compatibility mode on a 64-bit operating system. Alternatively, the WDK-, DFC-, and DFS-
based Documentum 6.5 products can run on 32-bit platforms as 32-bit applications, and on 64-bit platforms
in the 32-bit compatibility mode, or in the native 64-bit mode.

If you are one of the pioneers who has migrated to a 64-bit environment (64-bit processor and a 64-bit
operating system), you can start running the WDK-, DFC-, and DFS-based products of the Documentum
6.5 product suite in your 64-bit environment. You can deploy these products on 64-bit application servers
that run using 64-bit JVM on 64-bit operating systems and 64-bit processors. Alternatively, these WDK-,
DFC-, and DFS-based applications of Documentum 6.5 will continue to be supported on 32-bit platforms.

This transition to 64-bit computing implies that Documentum users can continue to push the level of
sophistication of content management to a higher level than the level that applications could support with
32-bit computing.

References

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