

# MeetingPlace Web MSDE Performance and Scalability Limitations

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## Introduction

This document explains the performance and scalability limitations with Cisco MeetingPlace Web Microsoft Data Engine (MSDE).

## Prerequisites

## Requirements

There are no specific requirements for this document.

## Components Used

The information in this document is based on these software and hardware versions:

- Cisco MeetingPlace Web 4.2.7 and later
- MSDE 2000

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

## Conventions

For more information on document conventions, refer to the Cisco Technical Tips Conventions.

## Performance and Scalability Limitations

- Cisco MeetingPlace Web 4.3 uses a second 'slave' database named 'MPWEB-Slave-xxxxxxx', where 'xxxxxxx' is a sequence of digits that varies from one system to another.

Because of this 'by design' limitation introduced by Microsoft, Cisco MeetingPlace Web customers running against MSDE 2000 can encounter performance and scalability related problems when usage grows. This document provides information on how to anticipate or diagnose this specific issue.

- MSDE has a database size limitation of 2 GB.

Cisco MeetingPlace Web 4.2.7 and 4.3.0.x both use one MPWEB database.

Cisco MeetingPlace Web 4.3 uses a second 'slave' database named 'MPWEB-Slave-xxxxxxx', where 'xxxxxxx' is a sequence of digits that varies from one system to another.

If the MPWEB or the MPWEB slave database reaches 2 GB in size, the MeetingPlace Web application fails.

Customers must pay attention to the growth of the MPWEB database(s) and take appropriate action before it reaches 2 GB. Perform one of these options:

- ◆ Set a more aggressive value for the "Purge meetings" option ( for example, "Purge meetings held before *xx* number of days" in the MeetingPlace Web Administrator application / Replication Service configuration screen).

OR

- ◆ Upgrade to a full version of SQL Server (per processor license) that does not have this database size limitation.
- MSDE implements a 'concurrent workload throttle' mechanism to limit its scalability under heavy load. This mechanism, as currently implemented by Microsoft, takes effect when more than eight SQL queries execute at the same time. It is not related to the total number of end-users active on the application. There is no direct mapping between the number of active users and this limit being exceeded. Instead, the limit that is exceeded depends on a variety of factors such as:
    - ◆ The number of active users.
    - ◆ The features these users use at any given time (and how these features deal with the database).
    - ◆ The current size of the database.
    - ◆ The power of the server (CPU, disks), and so forth.

Microsoft does not provide information about the specific algorithm used to implement this 'concurrent workload throttle' mechanism. However, Cisco's own tests show that the slowdown seems exponential based on the number of SQL queries that exceed the eight-queries limit. For instance, if ten concurrent queries execute at the some point, the slowdown is minimal. If twenty concurrent queries execute , the slowdown is more noticeable. If forty or more concurrent queries execute , the slowdown can become so significant that Cisco MeetingPlace Web can appear to be unresponsive or non-functional from the end-users' standpoint.

- Customers who operate a Cisco MeetingPlace Web server against MSDE 2000 must pay greater attention to performance degradation introduced by the 'concurrent workload throttle' described above. The procedure to do this is explained in the next section

## Determine Whether the Cisco MeetingPlace Web Server Experiences Performance Degradation due to the MSDE Eight Concurrent Queries Limitation

Complete these steps:

1. On the Windows 2000 server that runs the MSDE 2000 database server, select **Control Panel > Administrative Tools > Event Viewer**.

**Note:** Most of the time, the MSDE 2000 database server is the MeetingPlace Web server itself unless the database engine has been moved to another server.

2. Choose the Application Log. Select **View > Find**. Enter this information:

For 'Event types,' select only **Information**, for Event source select **MSSQLSERVER**, and in the Description field, enter **concurrent queries**.

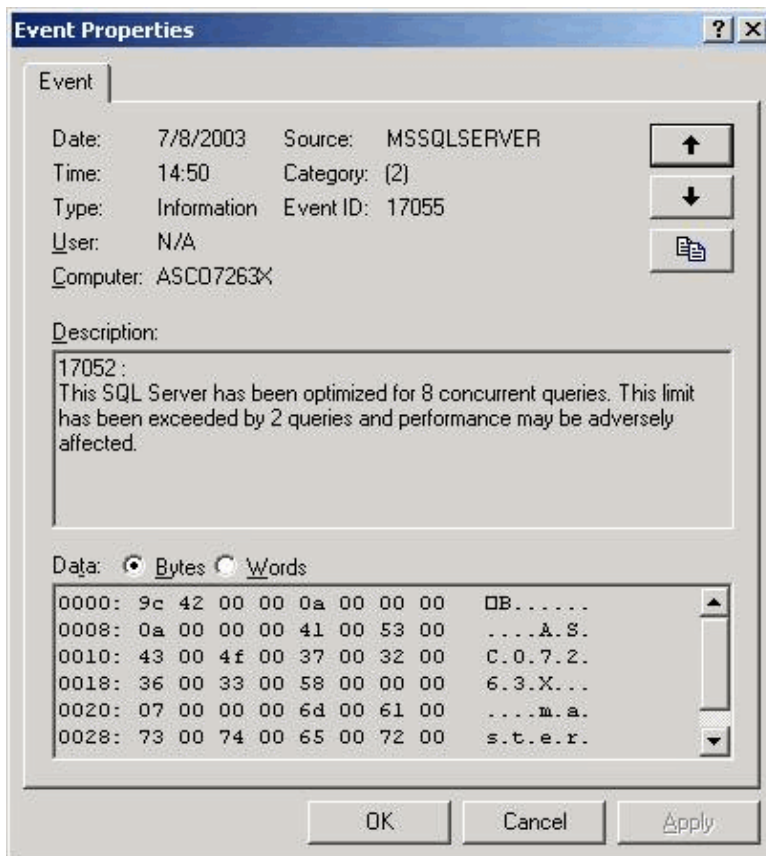
The image shows a Windows dialog box titled "Find in local Application Log". It contains the following fields and controls:

- Event types:** A group box containing five checkboxes:  Information,  Warning,  Error,  Success audit, and  Failure audit.
- Event source:** A dropdown menu with "MSSQLSERVER" selected.
- Category:** A dropdown menu with "(All)" selected.
- Event ID:** An empty text input field.
- User:** An empty text input field.
- Computer:** An empty text input field.
- Description:** A text input field containing "concurrent queries".
- Search direction:** Two radio buttons:  Up and  Down.
- Buttons:** "Find Next", "Restore Defaults", and "Close".

3. Click **Find Next**.

If the message "Search failed, end of log reached" appears, this means that the performance limit of the MSDE has never been reached (during the time span of this application event log).

4. If an event log entry is found in the Event Viewer, then open it by double-clicking on it:



5. The description indicates by how many queries the threshold (eight queries) has been exceeded.

In the example above, it is exceeded by two queries and the performance degradation has been minimal.

6. At this point, Cisco recommends to review all these messages by clicking **Find Next** in the Find in local Application Log window.

For each message, watch for the value of 'x' in the message "exceeded by x queries". If 'x' is greater than ten, performance is significantly affected. Also watch for recurrence (the number of messages per day). If this happens once a day (on average), the impact to end-users is limited. If this happens thirty times a day, the impact is widespread.

Based on this analysis, determine your best option based on the pros and cons of keeping MSDE 2000 or upgrading to full SQL Server 2000 (price versus scalability).

Although the MSDE eight-queries limit cannot be changed, if you try to execute a large number of concurrent queries (or one after another) on a server with very fast CPU and hard disk access, these queries are processed and completed within a much shorter time than on a lower-performance server (effectively raising the eight-queries limit). In other words, upgrading the server to a much faster hardware (especially CPU and disk) mechanically raises the limit threshold and improves the overall performance of the application.

According to the Microsoft documentation, MSDE can effectively use up to two processors on a symmetric multi-processor (SMP) server (such as dual CPU, quad CPU, and so forth). SQL Server 2000 can also take advantage of multiple processors. You need to acquire two licenses if you want to use it against two physical processors. However, according to Microsoft, you can use a one-processor license against two logical processors on a dual Xeon in hyperthreading mode, only if the two logical processors belong to the same physical Xeon processor.

You can also search for other weak performance and scalability related points in your installation. For example, end-users experience can be affected when network equipment between your server and these

end-users has limited bandwidth. This slowdown network traffic when you use the application. In these cases, investing into higher capacity network equipment can fetch better global improvements than investing into a full SQL Server license.

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## Related Information

- **Voice Technology Support**
  - **Voice and IP Communications Support**
  - **Recommended Reading: Troubleshooting Cisco IP Telephony Cisco Press, ISBN 1587050757**
  - **Technical Support – Cisco Systems**
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