**Solución de problemas de interbloqueo**

Algunos operadores de *back-office* observan una excepción no controlada mediante la aplicación *backend* cada día y aleatoriamente a lo largo del día. Descubres, a través de los desarrolladores, que se trata de un problema de interbloqueo que ocurre cuando hay mucha carga en el servidor. Debes averiguar:

* Dónde se produce el interbloqueo
* Con qué recursos debes trabajar para evitarlo.

Preguntas:

1. Tienes que usar una herramienta para entender la información del interbloqueo. ¿Qué herramientas emplearías?

*La herramienta adecuada con la que trabajar es el Analizador de SQL Server (SQL Server Profiler), al menos para trazar el evento* ***Locks:Deadlock Graph.*** *Cuando ocurre un interbloqueo, recibirás un gráfico con recursos, procesos y clases de bloqueos y solicitudes de bloqueo.*

1. Cuando localices el interbloqueo (imagina que solo hay uno), ¿qué tipo de operaciones deberías aplicar?

*Tienes que estar seguro de:*

* *Acceder a los objetos en el mismo orden*
* *Evitar usar interacciones durante las ejecuciones de transacciones*
* *Mantén las transacciones lo más cortas posibles y en un lote.*
* *Usa el nivel de aislamiento más bajo posible.*
* *Usa el nivel de aislamiento row versioning.*

**Troubleshooting processes**

Some website end users are experiencing some timeout in loading the "My Orders" page. You are managing a very large number of records and the query that returns the orders by user is taking more than 3 seconds of execution time, too much for that query. You open the Activity Monitor on your instance and you discover that there is a blocked process that is taking too much and that slows the concurrent processes. You have to remove this wait. You discover some missing index.

Questions:

1. How can you discover the missing index?

*Using the dynamic management object sys.dm\_db\_missing\_index\_details with the sys.dm\_db\_missing\_index\_columns()*

1. After you discover the index, how can you create the indexes avoiding downs?

*Using the ONLINE processing (building index online)*

**Troubleshooting execution times**

After the creation of the indexes the query takes some millisecond to execute and the pages response time is greatly improved. Now you want to inspect if the memory of your server is ok for your SQL Server instance. You open the System Monitor and you have to choose the right counters.

Questions:

1. What counter do you need?

* *Process: Working Set, that shows the amount of memory that is used by a process.*
* *SQL Server: Buffer Manager: Buffer Cache Hit Ratio, that is the hit ratio against the in memory buffer cache.*
* *SQL Server: Memory Manager: Total Server Memory (KB), indicates the memory needed by SQL Server.*

1. What values do you expect?

* *If this number is consistently below the amount of memory that is set by the min server memory and max server memory server options, SQL Server is configured to use too much memory.*
* *A percentage of 90% is suggested. If the value decreases you may need to add more memory in order to reach at least the 90%. The higher is the access on the cache, the better are the performances.*
* *If the value is high compared to the amount of physical memory in the computer, it may indicate that more memory is required.*