Optimizing SQL Server Instance and Memory Configuration

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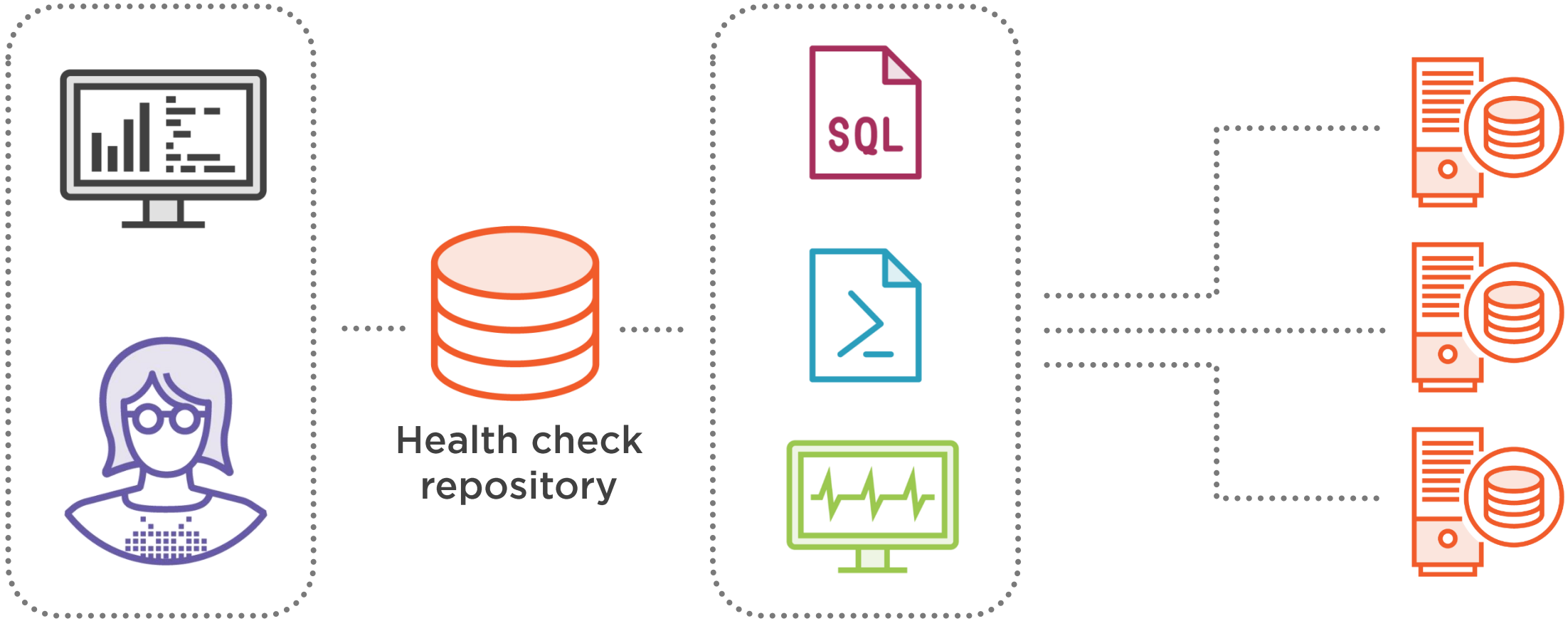
Let's Do a Server Health Check



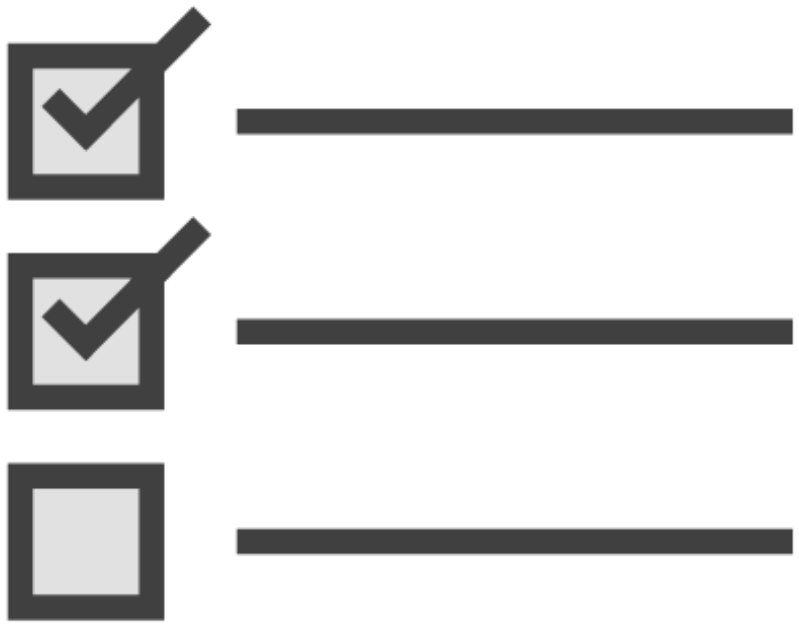
When Do You Need a Server Health Check?

After installing SQL Server

Before going into production

Regularly as part of operations and maintenance

What Do You Verify in a Server Health Check?



Host environment

- Hardware
- OS

SQL Server configuration

Database settings

SQL Server ERRORLOG files

Scheduled jobs

Custom

Demo

Configure SQL Server memory settings

- Max server memory
- Min server memory
- Lock pages in memory

Review other server configuration settings

- Optimize for ad hoc workloads
- Max degree of parallelism
- Cost threshold for parallelism

SQL Server ERRORLOG files

Demo

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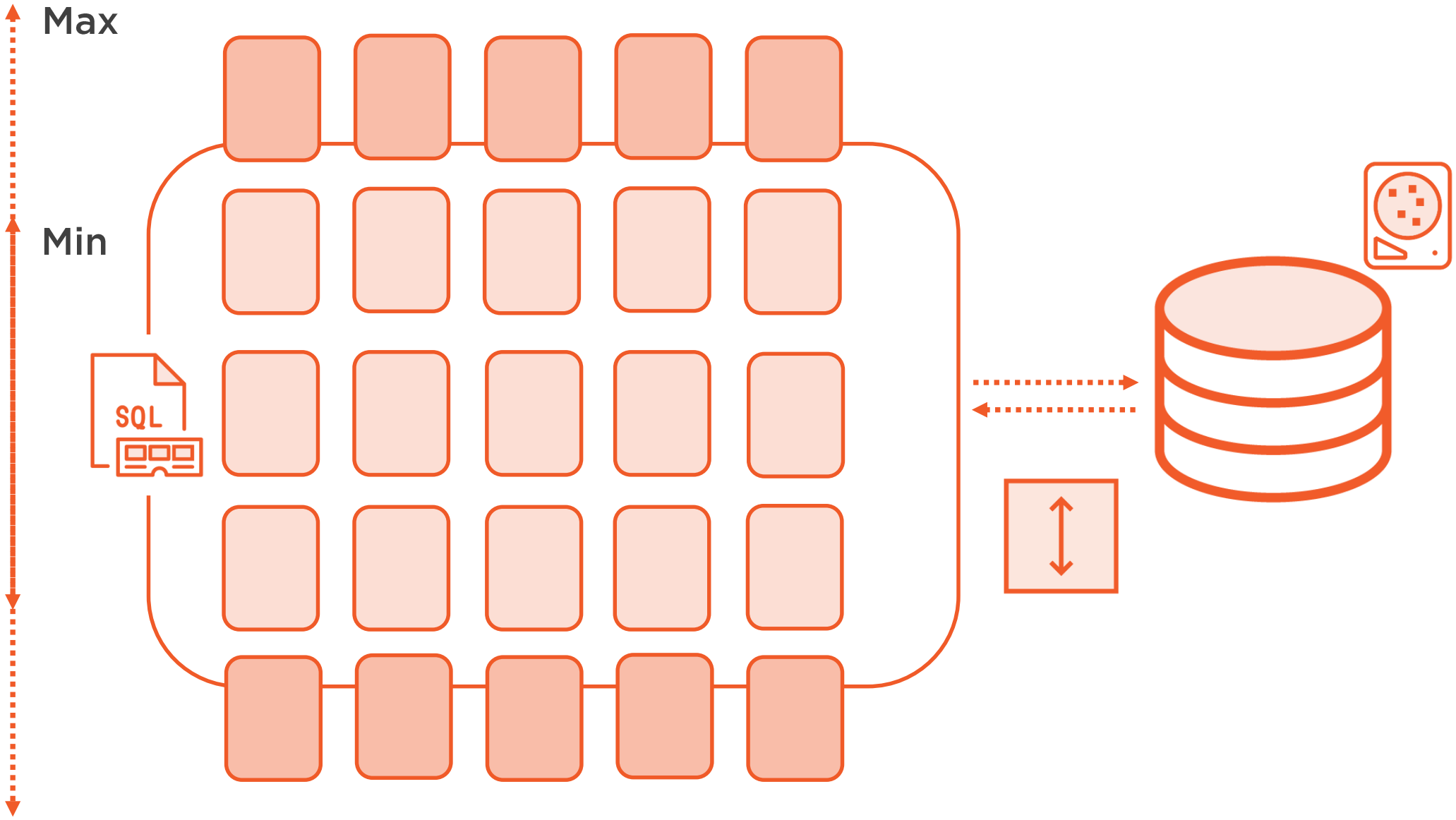
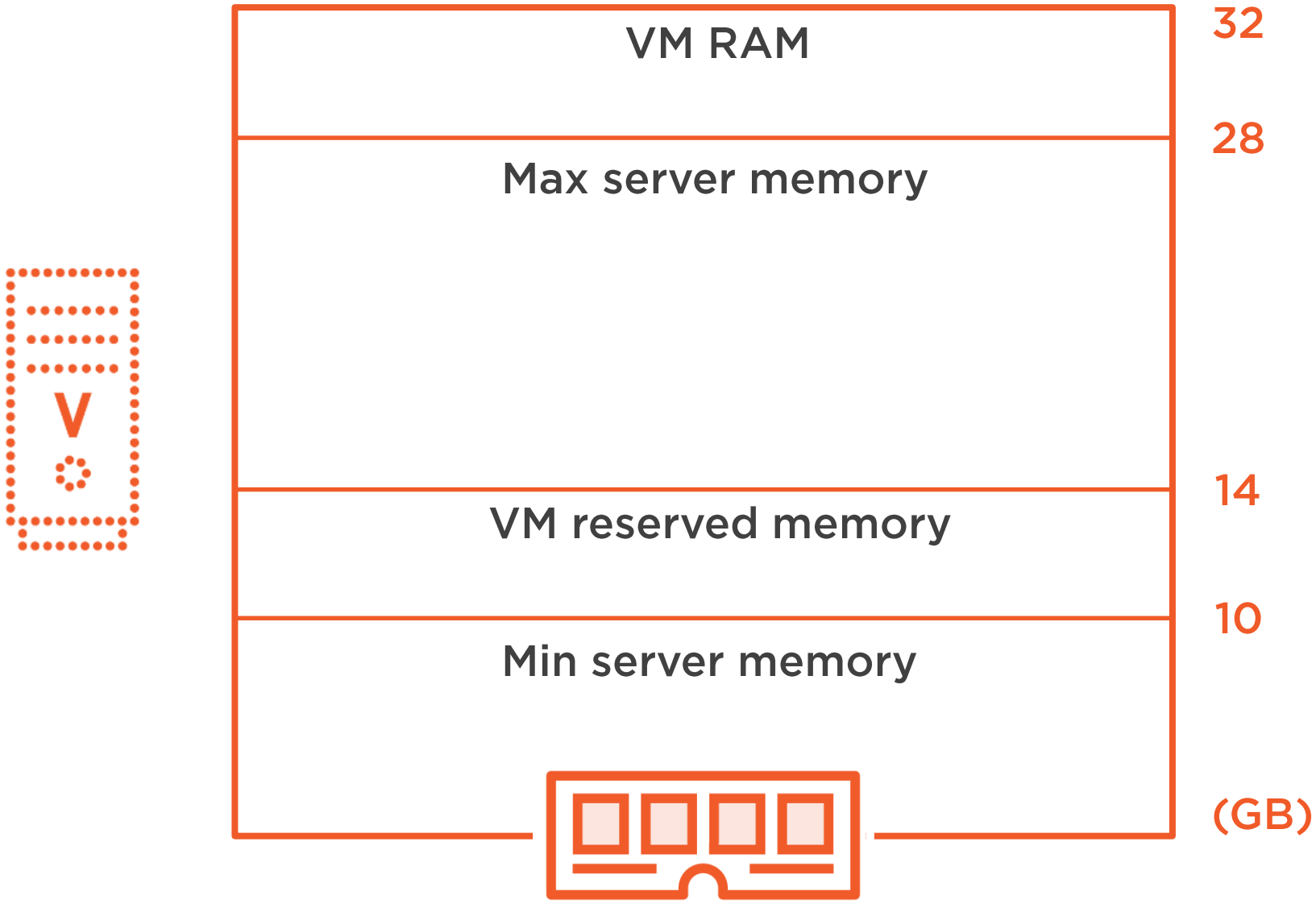
SQL Server ERRORLOG files

Buffer Pool Memory Sizing



SQL Server VM Memory Settings Example



System Data Collection Method Examples

Data to collect	Method
System information	ERRORLOG files and @@VERSION sys.dm_os_sys_info sys.dm_os_schedulers msinfo32 (Windows)
Errors and exceptions	ERRORLOG files Event Logs (Windows)
Memory dumps	sys.dm_server_memory_dumps ERRORLOG files
Database corruption	DBCC CHECKDB job failures msdb..sysjobhistory msdb..suspect_pages

Performance Data Collection Method Examples

Data to collect	Method
SQL Server performance counters	sys.dm_os_performance_counters
Wait statistics	sys.dm_os_wait_stats sys.dm_exec_session_wait_stats
Database file IO	sys.dm_io_virtual_file_stats
System level bottlenecks	ERRORLOG files
Missing indexes and index usage	sys.dm_db_missing_index_details sys.dm_db_missing_index_groups sys.dm_db_missing_index_group_stats sys.dm_db_index_usage_stats

Summary

- Server health check process
- SQL Server memory settings
- SQL Server configuration options
- SQL Server ERRORLOG files