

## IT Best Practices Audit™

**TCS offers a wide range of IT Best Practices Audit content covering 15 subjects and over 2200 topics, including:**

1. IT Cost Containment — 84 topics
2. Cloud Computing Readiness — 225 topics
3. Networks — 185 topics
4. Desktops and Printers — 208 topics
5. Storage — 130 topics
6. Microsoft Servers — 191 topics
7. iSeries Servers — 116 topics
8. Web Servers — 119 topics
9. Unix and Linux Servers — 134 topics
10. Database — 115 topics
11. Software Licensing — 24 topics
12. Telephony — 82 topics
13. Data Center — 253 topics
14. IT Leadership and Governance — 185 topics
15. Compliance and Security — 296 topics

## IT Best Practices Audit™

# Web Servers Audit Categories and Topics

Category	Audit Topic
General/Info	Name(s) of client resources providing data for this subject
General/Info	Title(s) of client resources providing data for this subject
General/Info	Server Configuration and Operational Documentation
General/Info	Change management process
General/Info	Change management logs
General/Info	Description of web based applications in use
Operations	Monitoring of Web Servers and application servers
General/Info	Tuning of web server components (see this section and Server section)
General/Info	Monitoring the count of simultaneous connections to all web based applications
General/Info	Use of external monitoring tools (like Livestats or Keynote, etc.) to monitor geographic availability, errors, and response times
General/Info	Use of multiple web servers and load balancers for high availability and/or capacity
General/Info	Separate Development, Test, and Production Environments
General/Info	Description of current and planned web applications
General/Info	Capacity Utilization and Planning Processes
General/Info	Web Server management/data collection tools
General/Info	Description of web components (web servers, application servers, load balancers, etc. ) in use
Staffing	Web Server Staffing
Staffing	Web Server Staff Training
Reliability	Overall Availability (% of planned uptime) - check system uptime counters
Reliability	Hardware Failures
Reliability	Software/application Failures
Reliability	Other failures (unknown)
Apache Performance Counters	Monitoring of CPUload counter
Apache Performance Counters	Monitoring of ReqPerSec counter
Apache Performance Counters	Monitoring of BytesPerSec counter
Apache Performance Counters	Monitoring of the BytesPerReq counter
Apache Performance Counters	Monitoring of the BusyWorkers counter

Category	Audit Topic
Apache Performance Counters	Monitoring of IdleWorkers counter
Apache Performance Tuning	HostNameLookups parameter
Apache Performance Tuning	Use/enablement of KeepAlive timers
Apache Performance Tuning	KeepAliveTimeout settings
Apache Performance Tuning	Use of AllowOverride
Apache Performance Tuning	Unused modules
Apache Performance Tuning	MaxKeepAliveRequests parameter
Apache Performance Tuning	MaxClients parameter
Apache Performance Tuning	ListenBacklog parameter
IIS Performance Counters	Bytes Sent/sec - The rate, in seconds, at which data bytes have been sent by the WWW service
IIS Performance Counters	Bytes Received/sec - The rate, in seconds, at which data bytes have been received by the WWW service
IIS Performance Counters	Current Connections
IIS Performance Counters	Not Found Errors/sec - The rate, in seconds, at which requests were not satisfied by the server because the requested document was not found
IIS Performance Counters	Locked Errors/sec The rate, in seconds, at which requests were not satisfied because the requested document was locked
IIS Performance Counters	Current ISAPI Extension Requests - The number of ISAPI extension requests that are being processed simultaneously via the WWW service
IIS Performance Counters	ISAPI Extension Requests/sec - The rate, in seconds, at which ISAPI extension requests are being processed by the WWW service
IIS Performance Counters - WWW service cache	Current File Cache Memory Usage - The number of bytes currently used for the usermode file cache
IIS Performance Counters - WWW service cache	Current Files Cached - The number of files whose content is currently in the user-mode cache
IIS Performance Counters - WWW service cache	Current URIs Cached - The number of URI currently stored in the user-mode cache
IIS Performance Counters - WWW service cache	Current Metadata Cached - The current number of metadata information blocks in the user-mode cache
IIS Performance Counters - WWW service cache	Kernel: URI Cache Hits/sec - The average number of kernel URI cache hits that are being made per second
MS ASP.NET counters	Requests Disconnected - The number of requests that were disconnected because a communication failure occurred.
MS ASP.NET counters	Requests Queued - The number of requests in the queue waiting to be serviced. If this number increases as the number of client requests increases, the Web server has reached the limit of concurrent requests that it can process.
MS ASP.NET counters	Requests Rejected - The total number of requests that were not executed because insufficient server resources

Category	Audit Topic
	existed to process them. This is a counter of requests that return a 503 HTTP status code, which indicates that the server is too busy.
MS ASP.NET counters	Errors Total/sec The average number of errors that occurred per second during the execution of HTTP requests, and includes any parser, compilation, or run-time errors.
MS ASP.NET counters	Output Cache Turnover Rate - The average number of additions to and removals from the output cache per second. If the turnover is great, the cache is not being used effectively - it may need more memory or less users to service.
MS ASP.NET counters	Sessions Active The number of sessions that are active (in memory).
MS ASP.NET counters	Transactions/sec The average number of transactions that were started per second.
MS ASP.NET counters	Transactions Pending The number of transactions that are in progress.
MS ASP.NET counters	Errors per second - The average number of errors that occurred per second.
MS ASP.NET counters	Requests/sec - The average number of requests that were executed per second.
MS ASP.NET counters	Requests Executing - The number of ASP requests currently executing (for example, the number of active worker threads).
MS ASP.NET counters	Requests Queued The number of queued ASP requests that are waiting to be processed. The maximum number for this counter is determined by the metabase parameter AspRequestQueueMax.
MS ASP.NET counters	Transactions/sec The average number of transactions that have been started, per second.
IIS Optimizations	HKLM\SYSTEM\CurrentControlSet\Services\ASP\Parameters EnableChangeNotificationForUNC REG_DWORD 1
IIS Optimizations	HKLM\SYSTEM\CurrentControlSet\Control\FileSystem NtfsDisable8dot3NameCreation REG_DWORD 0
IIS Optimizations	HKLM\SYSTEM\CurrentControlSet\Control\FileSystem Win31FileSystem REG_DWORD 0
IIS Optimizations	HKLM\SYSTEM\CurrentControlSet\Control\FileSystem Win95TruncatedExtensions REG_DWORD 1
IIS Optimizations	HKLM\SYSTEM\CurrentControlSet\Services\HTTP\Parameters MaxConnections REG_DWORD 40000
IIS Optimizations	HKLM\SYSTEM\CurrentControlSet\Services\inetinfo\Parameters ListenBackLog REG_DWORD 25
IIS Optimizations	HKLM\SYSTEM\CurrentControlSet\Services\inetinfo\Parameters MaxPoolThreads REG_DWORD 8
IIS Optimizations	HKLM\SYSTEM\CurrentControlSet\Services\inetinfo\Parameters DoDirMonitoringForUnc REG_DWORD 1
IIS Optimizations	HKLM\SYSTEM\CurrentControlSet\Services\lanmanserver\Parameters Size REG_DWORD 3
IIS Optimizations	HKLM\SYSTEM\CurrentControlSet\Services\lanmanworkstation\Parameters MaxCmds REG_DWORD 12000
IIS Optimizations	HKLM\SYSTEM\CurrentControlSet\Services\lanmanworkstation\Parameters MaxMpxCt REG_DWORD 12000
IIS Optimizations	HKLM\SYSTEM\CurrentControlSet\Services\lanmanworkstation\Parameters DisableByteRangeLockingOnReadOnlyFiles REG_DWORD 1
IIS Optimizations	HKLM\SYSTEM\CurrentControlSet\Services\lanmanworkstation\Parameters DormantFileLimit REG_DWORD 100
IIS Optimizations	HKLM\SYSTEM\CurrentControlSet\Services\lanmanworkstation\Parameters MaxThreads REG_DWORD 30
IIS Optimizations	HKLM\SYSTEM\CurrentControlSet\Services\lanmanworkstation\Parameters ScavengerTimeLimit REG_DWORD

Category	Audit Topic
	100
IIS Optimizations	HKLM\SYSTEM\CurrentControlSet\Services\TCPIP\Parameters Hostname REG_SZ [COMPUTERNAME]
IIS Optimizations	HKLM\SYSTEM\CurrentControlSet\Services\TCPIP\Parameters MaxFreeTcbs REG_DWORD 16000
IIS Optimizations	HKLM\SYSTEM\CurrentControlSet\Services\TCPIP\Parameters MaxHashTableSize REG_DWORD 65536
IIS Optimizations	HKLM\SYSTEM\CurrentControlSet\Services\TCPIP\Parameters MaxUserPort REG_DWORD 65534
IIS Optimizations	HKLM\SYSTEM\CurrentControlSet\Services\TCPIP\Parameters NV Hostname REG_SZ [COMPUTERNAME]
IIS Optimizations	HKLM\SYSTEM\CurrentControlSet\Services\TCPIP\Parameters TcpTimedWaitDelay REG_DWORD 30
IIS Optimizations	Metabase - maxWorkerThreads 100 Determined via Testing
IIS Optimizations	Metabase - maxIoThreads 100 Determined via Testing
IIS Optimizations	Metabase - minFreeThreads 704 88*#CPUs
IIS Optimizations	Metabase - minLocalRequestFreeThreads 608 76*#CPUs
IIS Optimizations	Metabase - appRequestQueueLimit 5000 Determined via Testing
IIS Optimizations	Metabase - maxconnection 96 12*#CPUs
IIS Optimizations	General - Turn off ASP debugging. Verify that both the server and client sides are turned off by setting AppAllowDebugging and AppAllowClientDebug to FALSE.
IIS Optimizations	General - Set AspBufferingOn to TRUE in order to collect the ASP output buffer before it is sent to the client.
IIS Optimizations	General - AspProcessorThreadMax Metabase - specifies the maximum number of worker threads per processor that IIS can create.
IIS Optimizations	General - AspRequestQueueMax Metabase - specifies the maximum number of ASP requests that are permitted in a queue.
IIS Optimizations	General - Verify that the keep-alive state for each TCP connection is enabled (connection = keep-alive). If keep-alive connections are turned off, every file requires a new TCP connection. For small files, enabling HTTP KeepAlives in IIS effectively reduces the number of "real" messages that can be sent by 50%.
IIS Optimizations	General - Enable HTTP compression
IIS Optimizations	General - Set HTTP expire headers for all images and for HTML so that appropriate content does immediately expire, resulting proxy servers and browsers making fewer calls to the Web server.
IIS Optimizations	General - Keep files as small as possible - remove unnecessary empty lines, tabs, characters, and so on. This speeds transmission and increases capacity.
IIS Optimizations	General - Use static files/content where possible to reduce system loads.
IIS Optimizations	General - Use Web Gardens to permit more simultaneous processes to run - be careful of the default recommendations of 8 threads per CPU - this may be too high. Start with 1 or 2 threads per CPU.
Weblogic	Adjust the defaults for maximum concurrent users - the defaults may be as low as 10, resulting in very low server utilization.
Weblogic	Tuning EJB, JDBC, and Thread related pools for their appropriate size increases the server's capacity and it performs better.

Category	Audit Topic
Weblogic	The prepared statement cache keeps compiled SQL statements in memory, thus avoiding a round-trip to the database when the same statement is used later.
Weblogic	Tune the JVM for optimal performance
Weblogic	Increase the Execute Queue Thread Count if the server is underutilized - this permits more simultaneous threads to run.
Weblogic	Explore the use of Weblogic clustering to improve availability and scalability.
Websphere	Websphere memory requirements (heap size)
Websphere	Object Request broker pass by reference
Websphere	Websphere - Number of users per Java Virtual Machine (JVM)
Websphere	Websphere - Garbage collection frequency
Websphere	Websphere - Default user time zone
Websphere	Websphere - Thread counts
Websphere	Websphere - Thread Keep Alive parameter
Websphere	Apache - HTTP Threads
Websphere	Apache - HTTP KeepAlive (persistence) parameter
Websphere	Apache - HTTP Cache - DynamicCache
Websphere	Apache HTTP Cache - LiveLocalcache
Websphere	Apache - HTTP Logging for each log - combined, cookie, agent, referrer, and common logs
Websphere	Apache - HTTP User Profile Swapping
Websphere	Large Page Support
Websphere	Performance Monitoring Infrastructure