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™

Unix and Linux Audit Categories and Topics

Category	Audit Topic
General	Name(s) of client resources providing data for this subject
General	Title(s) of client resources providing data for this subject
General	Server Configuration and Operational Documentation
General	Change management process
General	Change management logs
General	Virus checking software used: Sophos, Clam, avast, Cybersoft, BitDefender, etc.
General	Separate Development, Test, and Production Environments
General	Capacity Utilization and Planning Processes
General	Server management/data collection tools
General	Proactive meetings/communication with vendor representatives
Cost Metrics	IT Cost Metrics - Total Annual Cost Per Unix Server (instances)
Cost Metrics	IT Cost Metrics - Number of Unix Servers (instances) supported per Server Support Staff FTE
Staffing	Server Staffing
Staffing	Staff Certifications
Staffing	Staff Selection practices
Staffing	Staff Training
Staffing	Support hours
Hardware	% of servers less than 24 months old
Hardware	% of servers 25 - 48 months old
Hardware	% of servers more than 48 months old
Hardware	Number of Physical CPUs
Hardware	CPU Speed in GHz
Hardware	CPU Cache Size (Level 2 and Level 3)
Hardware	Total CPU Cores in server
Hardware	CPU utilization of all cores
Hardware	% of CPU time spent in kernel or privileged mode
Hardware	% of CPU time spent handling interrupts from system devices
Hardware	CPU Queue length - total number of processes waiting for CPU resources. Divide this number by the available processors

Category	Audit Topic
	to obtain the metric for analysis
Hardware	Server RAM provisioned/installed
Hardware	Physical memory - available bytes to processes after the OS and all other startup programs are loaded.
Hardware	Virtual memory - totals the page file reads and writes per second -
Hardware	Is firmware on hardware (like BIOS and raid controllers) current?
Hardware	Use of Redundant power supplies
Hardware	Use of UPS (uninterruptible Power Supply)
Hardware	Use of Power Conditioning and Surge Protectors
Hardware	2 separate power feeds to key components
Hardware	Dedicated power circuits for key components
Hardware	I/O bus/cards in use - PCI, PCI-E, etc
Hardware	Use of Out of Band Server management tools (like dedicated service processors, etc.)
Hardware	Use of multiple cards per bus
Operating System	Use of an Unix Operating System that is 1 or more major versions behind the latest available version
Operating System	Max memory supported by installed OS
Operating System	OS Patch levels
Operating System	Patch Application/Management processes
Operating System	Are device and print drivers current?
Operating System	Unused OS Services
Operating System	Swap/Page file size and management
Operating System	Location of Page Files
Operating System	Location of OS files
Operating System	Server tuning
Operating System	Maintenance Activities
Operating System	Server change monitoring
Operating System	Use of common time service for all devices -
Operating System	Software - All servers in a farm are identically configured and patched
Operating System	Hardware - For multiple servers in a farm, are they configured the same? Same horsepower, ram, etc?
Operating System	Creation of server farms
Operating System	Appropriate use of specific base versions of software (OS, DB, tools, etc.)
Operating System	Size and configuration of error logs
Operating System	Use of a single server instance for multiple, major applications

Category	Audit Topic
Operating System	Server Power settings
Reliability	Overall Availability (% of planned uptime) - check system uptime counters
Reliability	Hardware Failures
Reliability	Software Failures
Reliability	Other failures (unknown)
Anti Virus Protection	Status of Virus checking software
Anti Virus Protection	Status of AV software subscriptions
Anti Virus Protection	Frequency of AV software/pattern updates
Anti Virus Protection	Frequency of scans
Anti Virus Protection	Timing of scans
Anti Virus Protection	AV configuration - are scans of certain directories selectively enabled or disabled
Anti Virus Protection	Scanning of databases and email Databases
Anti Virus Protection	Real-time scanning of databases and email Databases
External Dependencies	Use/reference to external/3rd party products or web sites by the applications – for example, calling the cXML template from a site each transaction, advertising services, site analytics, payment services, etc.
Error Logging	Application error logging and review
Networking	NIC speed
Networking	NIC utilization during "normal" production use/hours (not during backups, etc.)
Networking	TCP/IP connections counters
Networking	Use of teamed NICS (MPIO for networks or iSCSI)
Networking	LACP capable Ethernet switches
Networking	TCP/IP Tuned (Selective acknowledgement, max packet sizes, receive window size, etc.)
Networking	Separate NIC's/networks for front end and backend/storage
Networking	Separate NIC's for any teamed traffic
Networking	DNS servers/services
Storage	System partition - Free disk space as percent of drive size
Storage	Size of System Volume
Storage	Data drives - Free disk space as percent of drive size
Storage	# of logical volumes that share the same physical disks
Storage	# of physical drives per logical volume
Storage	Disk Drive type
Storage	Individual drive capacity

Category	Audit Topic
Storage	Drive form factor
Storage	Drive rotation speed in RPM
Storage	Direct attached storage (DAS) controller RAID capabilities
Storage	Primary Data Storage Interconnect
Storage	Fiber Channel Speed
Storage	Infiniband speed
Storage	Hot spare drive available and configured
Storage	Format (sector) size of data drives
Storage	Stripe Size of disks
Storage	RAID level of system volumes and Page files
Storage	RAID level of data volumes
Storage	Average Response time in MS for System volume
Storage	Average Response time in MS for paging volumes
Storage	Average Response time in MS for Data volumes
Storage	Average disk busy % for System volume
Storage	Average disk busy % for Paging volume
Storage	Average disk busy % for Data volume
Storage	Average queue depth on data volumes
Storage	Split I/O's
Storage	Aligning the start of disk volumes on physical RAID stripe boundaries
Storage	Use of Multipath I/O
Storage	Use of snapshots - are they enabled, how frequently used, and how much disk space is allocated for them?
Storage	Write caching of volumes
Storage	Number of files on a server or in a single directory
Storage	Is any type of file replication being used in a large server or web farm for caching?
Storage	Clean up unnecessary files
Storage	Defragmenting Storage
Storage	Use of disk cleanup tools
Storage	Indexing of files by the OS (using SWISH++ or similar)
Storage	Use of date/time of last file access by "automatic cleanup" programs
Storage	Data Backup Policy
Storage	Backup frequency

Category	Audit Topic
Storage	Defined Business Recovery window
Storage	Defined Data Recovery window
Storage	Physical location of backup files
Storage	Testing of backup media, restore procedures, and restore speeds
Operations	Review server error logs on a daily basis.
Operations	Log all print activity to log load on the networks.
Operations	Scan the list of server processes to identify and terminate “run-away” jobs
Operations	Capture of server utilization data
Operations	Display outputs of monitoring tools in data center and in IT staff areas to show real-time utilization and status.
Operations	Automatic alerts to IT staff and management when utilization is consistently higher than defined standards.
Operations	Monitor the proper execution of all business critical applications – the data transfers from one system to another, proper operation of EDI, fax, etc gateway, backups, etc.
Operations	Monitor and minimize system startup tasks
Key Kernel Parameters	Tuning of Kernel Parameters