

365 unique SQL Server Database Administration (DBA) Learnings:

Fundamentals → intermediate → advanced → real-world DBA scenarios → career & best practices.

Foundations (Days 1–30)

1. What does a SQL Server DBA do?
2. SQL Server Editions explained
3. SQL Server architecture overview
4. Understanding SQL Server instances
5. System databases and their purpose
6. User databases vs system databases
7. SQL Server service accounts best practices
8. SQL Server installation checklist
9. Default SQL Server ports and security
10. SQL Server authentication modes
11. Windows vs SQL authentication
12. Importance of patching SQL Server
13. SQL Server versioning explained
14. Cumulative Updates vs Service Packs
15. SQL Server compatibility levels
16. Collation in SQL Server
17. Case sensitivity in SQL Server
18. SQL Server file types explained
19. MDF, LDF, and NDF files
20. SQL Server startup parameters
21. TempDB overview
22. Why TempDB is critical
23. SQL Server memory architecture
24. SQL Server CPU usage basics
25. SQL Server disk I/O fundamentals
26. SQL Server network considerations
27. SQL Server ports and firewalls
28. SQL Server licensing basics
29. Common DBA myths
30. Daily responsibilities of a DBA

Security & Permissions (Days 31–70)

31. SQL Server security model
32. Logins vs users
33. Server-level roles explained
34. Database-level roles explained
35. Fixed vs custom roles
36. Principle of least privilege
37. GRANT, DENY, and REVOKE
38. How to audit SQL Server logins
39. Password policies in SQL Server
40. SQL Server encryption overview
41. Transparent Data Encryption (TDE)
42. Always Encrypted explained
43. SQL Server certificates
44. SQL Server asymmetric keys

- 45. Row-level security
- 46. Dynamic data masking
- 47. SQL Server auditing
- 48. SQL Server vulnerability assessment
- 49. Protecting system databases
- 50. SQL Server security best practices
- 51. Preventing SQL injection
- 52. Securing SQL Server Agent
- 53. Managing permissions efficiently
- 54. Contained databases
- 55. Cross-database ownership chaining
- 56. Security risks of public role
- 57. Monitoring failed login attempts
- 58. SQL Server endpoint security
- 59. Service Broker security
- 60. Encrypting backups
- 61. Backup encryption vs TDE
- 62. Securing linked servers
- 63. Managing credentials
- 64. SQL Server authentication troubleshooting
- 65. Security hardening checklist
- 66. Auditing schema changes
- 67. GDPR considerations in SQL Server
- 68. Data privacy best practices
- 69. Removing orphaned users
- 70. Security mistakes DBAs make

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Backup & Recovery (Days 71–110)

- 71. Importance of backups
- 72. Types of SQL Server backups
- 73. Full backup explained
- 74. Differential backup explained
- 75. Transaction log backup explained
- 76. Recovery models overview
- 77. Simple recovery model
- 78. Full recovery model
- 79. Bulk-logged recovery model
- 80. Choosing the right recovery model
- 81. Backup compression benefits
- 82. Backup encryption basics
- 83. Backup retention strategies
- 84. Designing a backup strategy
- 85. Automating backups
- 86. SQL Server Maintenance Plans
- 87. Native backups vs third-party tools
- 88. Verifying backups
- 89. Restore strategies
- 90. Point-in-time recovery
- 91. Tail-log backups
- 92. Disaster recovery planning

- 93. Backup to Azure Blob Storage
- 94. Common backup failures
- 95. Backup performance tuning
- 96. Monitoring backup jobs
- 97. Restoring system databases
- 98. Recovering a deleted database
- 99. Handling corrupted backups
- 100. Backup storage best practices
- 101. Testing restores regularly
- 102. Backup compliance requirements
- 103. Copy-only backups
- 104. Backup scheduling best practices
- 105. Managing large databases backups
- 106. Backup impact on performance
- 107. Offsite backups importance
- 108. Backup documentation
- 109. Backup troubleshooting tips
- 110. Lessons from backup failures

Performance Monitoring & Tuning (Days 111–160)

- 111. What is SQL Server performance tuning?
- 112. Identifying performance bottlenecks
- 113. SQL Server wait statistics
- 114. Common wait types explained
- 115. Blocking vs deadlocking
- 116. How deadlocks occur
- 117. Deadlock monitoring techniques
- 118. Index basics
- 119. Clustered vs nonclustered indexes
- 120. Index fragmentation
- 121. Rebuild vs reorganize indexes
- 122. Fill factor explained
- 123. Missing index warnings
- 124. Over-indexing issues
- 125. Query execution plans
- 126. Reading execution plans
- 127. Query Store overview
- 128. Parameter sniffing
- 129. Statistics importance
- 130. Updating statistics
- 131. TempDB performance issues
- 132. Memory pressure indicators
- 133. CPU pressure indicators
- 134. Disk I/O latency
- 135. Monitoring SQL Server memory
- 136. SQL Server DMVs overview
- 137. Top performance DMVs
- 138. Long-running queries
- 139. Blocking chain analysis
- 140. Index maintenance strategies

- 141. Auto vs manual tuning
- 142. Performance baseline creation
- 143. SQL Server monitoring tools
- 144. Using Extended Events
- 145. SQL Server Profiler risks
- 146. Resource Governor overview
- 147. Query tuning best practices
- 148. Avoiding RBAR
- 149. Scalar vs table-valued functions
- 150. Temp tables vs table variables
- 151. Indexing large tables
- 152. Partitioning overview
- 153. Performance impact of triggers
- 154. Performance tuning checklist
- 155. Common performance mistakes
- 156. Performance troubleshooting workflow
- 157. Real-world performance case study
- 158. Preventing performance regressions
- 159. Performance documentation
- 160. Performance tuning myths

High Availability & Disaster Recovery (Days 161–210)

- 161. HA vs DR explained
- 162. SQL Server failover concepts
- 163. Failover Cluster Instances
- 164. Always On Availability Groups
- 165. AG architecture overview
- 166. Synchronous vs asynchronous replicas
- 167. Automatic vs manual failover
- 168. AG listener explained
- 169. Read-only replicas
- 170. Backup preferences in AG
- 171. AG failover testing
- 172. Log shipping overview
- 173. Log shipping pros and cons
- 174. Database mirroring (legacy)
- 175. Replication overview
- 176. Snapshot replication
- 177. Transactional replication
- 178. Merge replication
- 179. Replication troubleshooting
- 180. Distributed AGs
- 181. Multi-subnet clusters
- 182. Quorum models explained
- 183. DR site planning
- 184. RTO and RPO concepts
- 185. DR testing importance
- 186. Failover documentation
- 187. HA monitoring strategies
- 188. Common HA failures

- 189. Split-brain scenarios
- 190. DR drills best practices
- 191. SQL Server on Azure HA
- 192. Azure SQL Managed Instance HA
- 193. Hybrid HA scenarios
- 194. Network latency considerations
- 195. Storage considerations for HA
- 196. Security in HA environments
- 197. Licensing for HA
- 198. HA vs scalability
- 199. Handling failover failures
- 200. Disaster recovery checklist
- 201. Automating failover alerts
- 202. Lessons learned from outages
- 203. HA architecture mistakes
- 204. DR communication plans
- 205. Data consistency checks
- 206. Monitoring replica health
- 207. DR documentation
- 208. HA upgrade strategies
- 209. HA patching strategies
- 210. HA/DR myths

Maintenance & Automation (Days 211–250)

- 211. Importance of maintenance plans
- 212. SQL Server Agent overview
- 213. Creating SQL Agent jobs
- 214. Job schedules best practices
- 215. Job failure notifications
- 216. SQL Server alerts
- 217. Database integrity checks
- 218. DBCC CHECKDB explained
- 219. Handling corruption
- 220. Index maintenance automation
- 221. Statistics maintenance automation
- 222. Cleanup jobs importance
- 223. Log file growth management
- 224. Auto-growth settings
- 225. Monitoring disk space
- 226. Maintenance windows planning
- 227. Server restart best practices
- 228. Patching strategies
- 229. Handling cumulative updates
- 230. Upgrade planning checklist
- 231. Side-by-side upgrades
- 232. In-place upgrades risks
- 233. Rolling upgrades
- 234. Automating DBA tasks
- 235. PowerShell for DBAs
- 236. Using SQLCMD

- 237. Central management servers
- 238. Multi-server job management
- 239. Configuration drift management
- 240. Policy-Based Management
- 241. Alert fatigue management
- 242. Capacity planning basics
- 243. Storage growth forecasting
- 244. Memory configuration best practices
- 245. CPU configuration best practices
- 246. TempDB configuration best practices
- 247. Automating health checks
- 248. Maintenance documentation
- 249. Maintenance failures troubleshooting
- 250. Maintenance best practices

Advanced Topics & Real-World DBA (Days 251–310)

- 251. SQL Server internals overview
- 252. Buffer pool architecture
- 253. Transaction log internals
- 254. Locking and latching
- 255. Isolation levels explained
- 256. Snapshot isolation
- 257. In-memory OLTP
- 258. Columnstore indexes
- 259. SQL Server compression
- 260. Data partitioning strategies
- 261. Managing very large databases
- 262. SQL Server on virtual machines
- 263. NUMA architecture
- 264. Hyper-V vs VMware considerations
- 265. SQL Server on Linux overview
- 266. Cross-platform considerations
- 267. SQL Server in containers
- 268. Azure SQL Database overview
- 269. Azure SQL Managed Instance
- 270. Migrating to Azure
- 271. SQL Server licensing optimization
- 272. Monitoring cloud SQL costs
- 273. Data migration strategies
- 274. Minimal downtime migrations
- 275. Linked servers performance
- 276. Cross-database queries
- 277. Handling legacy applications
- 278. Third-party monitoring tools
- 279. Troubleshooting production outages
- 280. Incident response process
- 281. Root cause analysis
- 282. Post-incident reviews
- 283. Change management for DBAs
- 284. Handling emergency changes

- 285. Documentation importance
- 286. Capacity bottlenecks
- 287. Scaling SQL Server workloads
- 288. Read vs write optimization
- 289. Handling high concurrency
- 290. SQL Server anti-patterns
- 291. Common DBA firefighting scenarios
- 292. Communicating with developers
- 293. Working with infrastructure teams
- 294. SLA management
- 295. Handling audit requests
- 296. Data retention policies
- 297. Archiving strategies
- 298. Compliance audits
- 299. Performance during peak loads
- 300. Lessons learned as a DBA
- 301. DBA war stories
- 302. Avoiding burnout as a DBA
- 303. Time management for DBAs
- 304. Prioritization techniques
- 305. Handling multiple environments
- 306. Production vs non-production
- 307. Change rollback strategies
- 308. Disaster recovery failures lessons
- 309. DBA soft skills
- 310. DBA decision-making

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Career Growth & Best Practices (Days 311–365)

- 311. Essential skills for SQL Server DBAs
- 312. Junior vs senior DBA responsibilities
- 313. Transitioning from developer to DBA
- 314. Building a DBA lab
- 315. Certifications for SQL Server DBAs
- 316. Interview questions for DBAs
- 317. Resume tips for DBAs
- 318. LinkedIn branding for DBAs
- 319. Blogging as a DBA
- 320. Sharing knowledge in the community
- 321. Learning roadmap for DBAs
- 322. Staying current with SQL Server
- 323. Reading SQL Server documentation
- 324. Following SQL Server experts
- 325. Attending SQL Server conferences
- 326. Importance of user groups
- 327. SQL Server MVP program
- 328. Mentorship in DBA career
- 329. Troubleshooting mindset
- 330. Developing problem-solving skills
- 331. Continuous learning strategies
- 332. Balancing automation and control

- 333. Avoiding overengineering
- 334. Knowing when not to tune
- 335. Communicating risks to management
- 336. Handling production pressure
- 337. Ethical responsibilities of DBAs
- 338. Data ownership principles
- 339. DBA accountability
- 340. Measuring DBA success
- 341. KPIs for DBAs
- 342. Documentation as a career asset
- 343. Building trust as a DBA
- 344. Working under SLAs
- 345. On-call DBA best practices
- 346. Career paths beyond DBA
- 347. DBA to architect transition
- 348. DBA to cloud engineer path
- 349. Freelancing as a DBA
- 350. Consulting vs in-house DBA
- 351. Teaching SQL Server
- 352. Writing technical content
- 353. Speaking at conferences
- 354. Giving internal training
- 355. Leadership skills for DBAs
- 356. Influencing technical decisions
- 357. Handling conflicts professionally
- 358. Long-term career planning
- 359. Avoiding stagnation
- 360. Building a personal brand
- 361. Giving back to the community
- 362. Lessons from senior DBAs
- 363. Mistakes every DBA makes
- 364. What I wish I knew as a DBA
- 365. Future of SQL Server DBA role