



POST-ADM - PostgreSQL Database Administration

PostgreSQL - Postgre SQL - Sistemistica

Durata:

4 Giorni

Lingue:

Italiano

Certificazione:

-

Descrizione del corso

Questo corso completa le conoscenze per evadere i compiti quotidiani di un DBA, partendo dalle operazioni di base ad alcune tecniche intermedie.&Consigliato per amministratori di database e amministratori di sistema.

Programma

1. Introduzione a PostgreSQL
 - Caratteristiche principali
 - PostgreSQL Architecture Overview
 - Installazione di PostgreSQL
 - Installazione dei pacchetti
 - Inizializzazione database
 - Creazione di un database di prova
2. Amministrazione
 - File di configurazione
 - Creazione e rimozione di un database
 - Security fundamentals
3. Manutenzione
 - Critical parameters
 - Kernel shared memory settings
 - Database restart modes
 - Processes started by PostgreSQL
 - postmaster

ITCore Group

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- bgwriter
 - stats collector
 - autovacuum
 - statistics and `_ANALYSE_command`
 - clients processes (backends)
 - Data Integrità guarantees
 - WAL files
 - `_fsync_settings`
 - Write-through and write-back caches
 - Routine Maintenance
4. Backup e restore
- Quando fare backup e restore
 - `pg_dump`
 - `pg_dumpall`
 - Restore
 - Restore via a List File
 - Restoring data from a copy, including partial recover
5. Advanced backup techniques
- PostgreSQL operation log working
 - WAL logs archiving (log shipping)
 - `_pg_basebackup_program`
 - `_pg_receivexlog_program`
 - Parallel mode for `pg_dump_`
 - Point In Time Recovery
 - Backup at the file system's level
6. Performance tuning
- Key parameters influencing performance
 - Performance and reliability balancing
 - Performance problems diagnosing
7. Statistics
- The PostgreSQL Statistics Collector
 - Statistics Views
 - Statistics Functions
8. Replication
- Hot standby
 - Streaming replication
 - Monitoring replication stage

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- Replication parameters tuning
 - Cascading Replication
 - Synchronous replication
 - Inner workings
 - The balance of benefits and costs
 - External replication systems
9. High availability
- Replication setting for HA
 - Master-slave automated promotion
 - STONITH problem (Shoot The Other Node In The Head)
 - Security guarantees for HA systems
 - Estimating the risk of losing data in case of failure
 - External HA systems for PostgreSQL
 - Heartbeat Monitoring
 - Failing Over
 - Failing Back
10. Monitoring database work
- System tools
 - OS Process Monitoring
 - vmstat, top, iostat
 - strace, systemtap
 - System perspectives
 - Monitoring the bgwriter process
 - Troubleshooting deadlocks
 - Preventing transaction wraparound
 - Dedicated monitoring tools
 - `_check_postgres.pl_script`
 - Log parsers: `pgFouine`, `_pg_badger_`
 - Automatic errors notification: `_tail_n_mail_`
 - Avoiding auto freezing and page corruptions
 - Avoiding transaction wraparound
 - Removing old prepared transactions
 - Maintaining indexes
 - View locks
 - Monitoring, backup correctness verification
11. Upgrade Methods
- Minor Version Upgrades

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- pg_upgrade
- RPM Based Upgrade
- Source Based Upgrade
- SLONY Based Upgrade

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