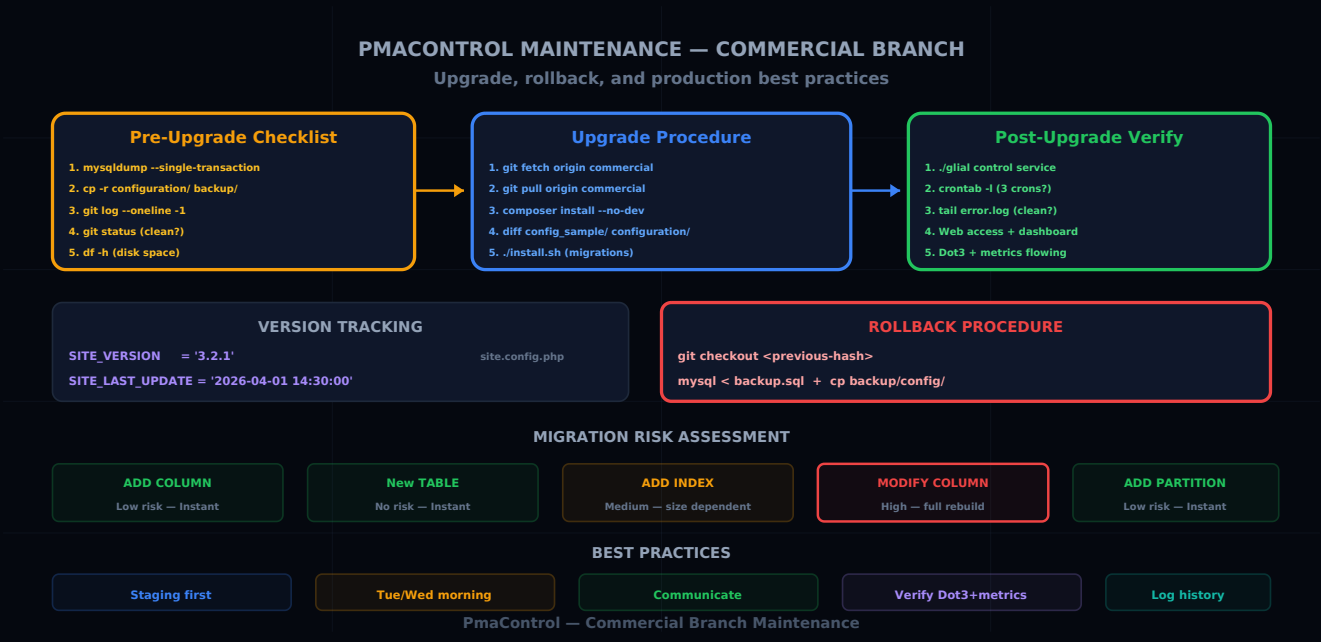
# Maintaining PmaControl Commercial Branch: Upgrade, Rollback and Best Practices

**Aurélien LEQUOY** · April 13, 2026

PMACONTROL UPGRADE MAINTENANCE GIT PRODUCTION




## PmaControl Is a Git-Based Deployment

PmaControl is not distributed as a .deb or .rpm package. It is a Git-based deployment: you clone the repository, install Composer dependencies, run the installation script, and it is in production.

```
git clone -b commercial https://github.com/pmacontrol/pmacontrol.git /srv/www/pmacontrol
cd /srv/www/pmacontrol
composer install --no-dev
./install.sh
```

This model has advantages (fast updates, easy rollback, no package manager) and drawbacks (no automatic management of system dependencies, no standardized post-install scripts). This guide covers day-to-day maintenance.

## Version Tracking

PmaControl stores its version in the site configuration file:

```
// configuration/site.config.php
define('SITE_VERSION', '3.2.1');
define('SITE_LAST_UPDATE', '2026-04-01 14:30:00');
```

These constants are updated automatically during installation ( `install.sh` ). You can check them:

- Via the web interface: "About" page or footer
- Via CLI: `grep SITE_VERSION configuration/site.config.php`
- Via API: `GET /api/v1/status` returns the version

Before any update, note the current version:

```
cd /srv/www/pmacontrol
grep -E 'SITE_VERSION|SITE_LAST_UPDATE' configuration/site.config.php
```

## Pre-Upgrade Checklist

Before launching the update, run this complete checklist:

### 1. Back Up the Database

```
mysqldump --single-transaction --routines --triggers \
  -u pmacontrol -p pmacontrol > /backup/pmacontrol_$(date +%Y%m%d_%H%M%S).sql
```

The `--single-transaction` flag is essential: it guarantees a consistent backup without locking tables (InnoDB/RocksDB).

**Verify the dump size**:

```
ls -lh /backup/pmacontrol_*.sql
```

An empty or abnormally small dump indicates a problem.

### 2. Back Up the Configuration

```
cp -r /srv/www/pmacontrol/configuration/ /backup/pmacontrol_config_$(date +%Y%m%d)/
```

Configuration files are the most critical: `db.config.ini.php` (credentials), `telegram.php`, `acl.config.ini`, `site.config.php`. An upgrade should not modify them, but human error happens fast.

### 3. Note the Current Version and Commit

```
cd /srv/www/pmacontrol
git log --oneline -1
# fe0911d (HEAD -> commercial) Fix: replication display for MySQL 8.4

grep SITE_VERSION configuration/site.config.php
# define('SITE_VERSION', '3.2.1');
```

Keep the commit hash (here `fe0911d`) -- this is your rollback point.

### 4. Check Git Status

```
git status
```

If there are uncommitted local modifications, decide now: commit them, stash them, or discard them. A `git pull` with local modifications can generate conflicts.

```
# If modifications should be kept
git stash save "pre-upgrade $(date +%Y%m%d)"

# If they should be discarded
git checkout -- .
```

### 5. Check Disk Space

```
df -h /srv/www/pmacontrol/
df -h /var/lib/mysql/
```

The upgrade and migrations may need temporary space. Make sure you have at least 20% free space on both partitions.

## Upgrade Procedure

### Step 1: Fetch Changes

```
cd /srv/www/pmacontrol
git fetch origin commercial
```

Before merging, examine what has changed:

```
git log --oneline HEAD..origin/commercial
```

This lists all commits between your version and the latest. Read the commit messages to identify:

- Database schema changes
- Configuration modifications
- Added or modified Composer dependencies
- Flagged breaking changes

### Step 2: Apply the Update

```
git pull origin commercial
```

If conflicts appear, they are almost always in configuration files. Never resolve a conflict by blindly accepting "theirs" -- verify manually.

### Step 3: Update Dependencies

```
composer install --no-dev
```

`composer install` (without `update`) uses the repository's `composer.lock`, which guarantees the same versions as the development team. **Never** use `composer update` in production -- it could pull untested versions.

Verify the installation succeeded:

```
# Check for errors
echo $?
# Should return 0

# Check vendor directory
```

```
ls -la vendor/autoload.php
```

### Step 4: Check Configuration Changes

Compare sample files with your current configuration:

```
diff -r config_sample/ configuration/ --brief
```

If new files appear in `config_sample/` that do not exist in `configuration/`, these are new configurations to integrate:

```
# List new files in config_sample
for f in config_sample/*; do
    base=$(basename "$f")
    if [ ! -f "configuration/$base" ]; then
        echo "NEW: $base — needs to be copied and configured"
    fi
done
```

For each new file:

```
cp config_sample/new_config.php configuration/new_config.php
# Edit and adapt values to your environment
```

### Step 5: Run Migrations

```
./install.sh
```

The `install.sh` script handles database schema migrations. It:

1. Detects the current schema version
2. Applies missing migrations in order
3. Updates `SITE_VERSION` and `SITE_LAST_UPDATE`

**Manual review recommended**: before running `install.sh`, examine the migrations:

```
# List migration files
ls -la data/migrations/ 2>/dev/null || ls -la install/migrations/ 2>/dev/null
```

If a migration contains `ALTER TABLE` on large tables (like `ts_value_general_int`), plan for a longer maintenance window.

## Post-Upgrade Checklist

### 1. Restart Services

```
./glial control service
```

This command restarts the collection and processing cycle. Verify it does not return errors.

### 2. Verify Cron Jobs

```
crontab -l -u www-data
```

Verify the three essential cron jobs are present:

```
* * * * * cd /srv/www/pmacontrol && ./glial agent check_daemon >> /tmp/pmacontrol_agent.log 2>&1
* * * * * cd /srv/www/pmacontrol && ./monitor_mysql.sh >> /tmp/pmacontrol_monitor.log 2>&1
0 */4 * * * cd /srv/www/pmacontrol && ./glial control service >> /tmp/pmacontrol_control.log 2>&1
```

### 3. Check Error Logs

```
# PHP logs
tail -20 /var/log/apache2/error.log

# PmaControl logs
tail -20 /tmp/pmacontrol_agent.log
tail -20 /tmp/pmacontrol_monitor.log
tail -20 /tmp/pmacontrol_control.log
```

Look for fatal errors, missing class warnings, database errors. A successful upgrade should generate no new errors.

### 4. Verify Web Access

Open PmaControl in the browser and verify:

- The login page works
- The main dashboard loads
- The server list displays
- An individual server is accessible
- The slave page works (if applicable)
- The Dot3 topology loads

### 5. Verify Metrics

Wait 5 minutes (a full collection cycle) then verify:

```
# Are agents collecting?
./glial agent check_daemon

# Is data arriving?
mysql -u pmacontrol -p pmacontrol -e "
SELECT server_id, MAX(timestamp) as last_data
FROM ts_value_general_int
GROUP BY server_id
HAVING last_data < NOW() - INTERVAL 5 MINUTE;
"
```

If this query returns results, some servers are no longer receiving data -- investigate.

### 6. Verify Dot3 and Topology

```
./glial dot3 generate
```

Verify that the topology regenerates without errors and that the graph in the web interface is consistent.

## Rollback Procedure

If something goes wrong, here is how to roll back.

### Code Rollback

```
cd /srv/www/pmacontrol
git checkout <previous-commit-hash>
composer install --no-dev
```

For example, if the pre-upgrade commit was `fe0911d`:

```
git checkout fe0911d
composer install --no-dev
```

### Database Rollback (If Schema Changed)

If `install.sh` modified the schema, you need to restore the backup:

```
mysql -u root -p pmacontrol < /backup/pmacontrol_20260413_143000.sql
```

**Warning**: this operation overwrites all data collected since the backup. If the upgrade happened 2 hours ago, you lose 2 hours of metrics. This is why the upgrade should be planned during a maintenance window.

### Configuration Rollback

```
cp /backup/pmacontrol_config_20260413/* /srv/www/pmacontrol/configuration/
```

### After Rollback

```
./glial control service
# Check logs
tail -20 /tmp/pmacontrol_agent.log
# Verify web access
curl -s -o /dev/null -w "%{http_code}" https://pmacontrol.example.com/
# Should return 200
```

## Composer Dependency Management

### Understanding the Lock File

The `composer.lock` file is versioned in the repository. It guarantees that everyone uses exactly the same dependency versions. When `composer.lock` changes in a pull:

```
# See dependency changes
git diff HEAD~1 composer.lock | grep '"name"'
```

### Check for Breaking Changes

If a major dependency changes (for example, Glial framework from 2.x to 3.x), this is a risky change. Check the dependency's CHANGELOG:

```
# List updated dependencies
composer show --latest --outdated
```

### Never composer update in Production

```
# NO — pulls the latest possible versions
composer update

# YES — installs exactly the lock file versions
composer install --no-dev
```

## Database Migrations

### How They Work

`install.sh` executes migrations sequentially. Each migration is idempotent -- it first checks whether the modification has already been applied:

```
-- Typical migration example
-- Check if column exists before adding it
SET @exist := (SELECT COUNT(*) FROM information_schema.COLUMNS
               WHERE TABLE_SCHEMA = 'pmacontrol'
               AND TABLE_NAME = 'mysql_server'
               AND COLUMN_NAME = 'new_column');

SET @sql = IF(@exist = 0,
    'ALTER TABLE mysql_server ADD COLUMN new_column VARCHAR(255) DEFAULT NULL',
    'SELECT "Column already exists"');
PREPARE stmt FROM @sql;
EXECUTE stmt;
```

### Risky Migrations

Some migrations are riskier than others:

| Type | Risk | Time |
|---|---|---|
| ADD COLUMN (nullable) | Low | Instant (MariaDB 10.0+) |
| ADD INDEX | Medium | Proportional to size |
| MODIFY COLUMN (type change) | High | Full table rebuild |
| DROP COLUMN | Low | Instant (MariaDB 10.4+) |
| ADD PARTITION | Low | Instant |
| New table | None | Instant |

For large tables (like `ts_value_general_int` which can be several GB), an `ADD INDEX` can take minutes or even hours. Plan accordingly.

### Manual Review Recommended

Before running `install.sh`, read the migration files to understand what will be modified. If a migration seems risky (ALTER TABLE on a multi-GB table), test it first on a staging environment.

## Best Practices

### 1. Staging Environment

Maintain a staging environment that replicates your production. The upgrade is tested there before being applied to production:

```
1. Staging: git pull -> composer install -> install.sh -> verification
2. Wait 24h — observe logs
3. Production: same procedure
```

Staging does not need to monitor as many servers as production. 5-10 MariaDB / MySQL servers are enough to validate proper functioning.

### 2. Planned Maintenance Window

Never upgrade on a Friday at 5 PM. Plan for:

- **Tuesday or Wednesday**: mid-week, the team is available
- **Morning**: to have the entire day to detect problems
- **Off-peak**: not during an application deployment or nightly batch

### 3. Communicate

Notify the team before the upgrade:

```
Subject: PmaControl Maintenance — Tue Apr 13 09:00-10:00

The PmaControl instance will be updated from version 3.2.1 to 3.3.0.
During maintenance (approximately 30 minutes):
- Dashboards may be temporarily unavailable
- Metric collection will be interrupted (automatic catch-up)
- Telegram alerts will be suspended then resumed

Contact: dba@company.com
```

### 4. Verify Dot3 + Metrics After Upgrade

This is the most important smoke test. If metrics are arriving and the topology is correct, the upgrade succeeded. If either does not work, there is a problem to investigate.

### 5. Keep an Upgrade History

Maintain a simple file listing performed upgrades:

```
2026-04-13 09:15 | 3.2.1 -> 3.3.0 | fe0911d -> a1b2c3d | OK
2026-03-15 10:00 | 3.1.0 -> 3.2.1 | 1234abc -> fe0911d | OK — slow ts_value migration
(45min)
2026-02-01 08:30 | 3.0.5 -> 3.1.0 | 9876def -> 1234abc | ROLLBACK — bug #342 in Listener
```

### 6. Automate When Mature

Once you have done 5-10 manual upgrades without incident, you can automate with a script:

```
#!/bin/bash
# upgrade_pmacontrol.sh
set -euo pipefail
```

```
BACKUP_DIR="/backup/pmacontrol/$(date +%Y%m%d_%H%M%S)"
mkdir -p "$BACKUP_DIR"

# Backup
mysqldump --single-transaction -u pmacontrol -p"$DB_PASS" pmacontrol > "$BACKUP_DIR/db.sql"
cp -r /srv/www/pmacontrol/configuration/ "$BACKUP_DIR/config/"
git -C /srv/www/pmacontrol log --oneline -1 > "$BACKUP_DIR/version.txt"

# Upgrade
cd /srv/www/pmacontrol
git pull origin commercial
composer install --no-dev
./install.sh

# Verify
./glial control service
curl -s -o /dev/null -w "%{http_code}" https://pmacontrol.example.com/ | grep -q 200

echo "Upgrade successful"
```

But always keep the ability to do a manual rollback.

## Common Errors

### "Class not found" After Upgrade

Symptom: PHP error `Class 'Xyz' not found` in logs.

Cause: `composer install` was not run after the pull, or the autoloader was not regenerated.

Solution:

```
composer install --no-dev
composer dump-autoload
```

### Migration Error "Table already exists"

Symptom: `install.sh` fails with `Table 'xyz' already exists`.

Cause: the migration is not idempotent (bug in the migration script).

Solution: manually check if the table/column exists and skip the migration if necessary. Report the bug to the PmaControl team.

### Git Conflicts in Configuration

Symptom: `git pull` fails with conflicts in `configuration/`.

Cause: you modified a configuration file that was also modified upstream.

Solution:

```
# Save your version
cp configuration/problematic_file.php /tmp/

# Accept the upstream version
git checkout --theirs configuration/problematic_file.php
git add configuration/problematic_file.php

# Reapply your modifications manually
# Compare /tmp/problematic_file.php with the upstream version
```

### Lost Stash

Symptom: you did `git stash` before the upgrade and cannot find your modifications.

Solution:

```
git stash list
# stash@{0}: On commercial: pre-upgrade 20260413

git stash pop stash@{0}
```

## Conclusion

Maintaining PmaControl in production is a predictable process if you follow the procedure: backup, pull, composer install, install.sh, verification. The Git model makes upgrades and rollbacks fast, but requires rigor in configuration management and backups.

The keys to success: a staging environment, a planned maintenance window, clear communication with the team, and systematic verification after each upgrade. By following these practices, PmaControl upgrades become a routine operation -- not a source of stress.