

ConsoleMCP Reference

10.1.5 additions to ConsoleMCP — compile feedback on `create_solution_file` and `update_solution_file`, and the new `verify_solution_file` tool.

[AI Integration](#) ConsoleMCP Reference

10.1.5 surfaces the compile output that already lives inside a produced `.dbsln`. Both `create_solution_file` and `update_solution_file` now include the shared build block in their response, drawn directly from the error columns of the four `*Contents` tables inside the solution file. A new tool, `verify_solution_file`, lets an agent inspect a `.dbsln` after the fact and confirm that every expected object is present and compiled cleanly.

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The JSON shape returned by both paths is defined once on [MCP SDK Reference](#) — the "build Block" section there is the authoritative shape. This page covers only the ConsoleMCP-specific entry points.

create_solution_file / update_solution_file — build block

Both tools already return per-file import attribution and the headless `SolutionCreator.exe` log. In 10.1.5 they additionally carry the shared build block, so the agent sees compile status for every `Script` and `Display` in the produced solution without a second call.

```
{
  "solution": "C:\\Solutions\\Foo.dbsln",
  "exitCode": 0,
  "imported": { "created": 12, "modified": 0, "skipped": 0, "errors": 0 },
  "build": {
    "objects": [
      { "type": "Script", "name": "Line1_Cycle", "status": "ok", "diagnostics": [], "elapsedMs": 42 },
      { "type": "Display", "name": "MainPage", "status": "error",
        "diagnostics": [ { "line": 18, "msg": "Cannot implicitly convert type 'string' to 'int'" } ],
        "elapsedMs": 91 }
    ],
    "summary": { "built": 11, "failed": 1, "skipped": 0, "timestamp": "2026-04-21T16:02:11Z" }
  }
}
```

Source of the data

A `.dbsln` is a SQLite database. Each of the four affected tables — `ScriptsTasks`, `ScriptsClasses`, `ScriptsExpressions`, `DisplaysList` — has a companion `*Contents` table (`ScriptsTasksContents`, `ScriptsClassesContents`, `ScriptsExpressionsContents`, `DisplaysListContents`) whose error columns hold the compile result written at build time by `SolutionCreator`.

ConsoleMCP queries those columns after the build completes and assembles the build block from the result. This is NOT stdout parsing of the `SolutionCreator` log — it is a direct read of the compiled result persisted inside the produced `.dbsln`. The same data the Designer displays when it opens the solution is the data ConsoleMCP reports back to the agent.

A non-zero `summary.failed` does not by itself fail the tool call. The `.dbsln` is still produced and the agent can inspect `build.objects[]` to decide whether to correct the workspace and re-run.

verify_solution_file

Reads an existing `.dbsln` and returns two things: a per-table Name inventory of every object in the solution, and the shared build block drawn from the `*Contents` tables. Optionally diffs the inventory against a caller-supplied list of expected object names.

This is a verification tool, not a read tool. It returns Names only — no row contents, no field values. Use `get_objects` to read row contents.

```
verify_solution_file(
  solution_name:  string,                                // .dbsln base name or absolute path
  expected_names: { <TableType>: [<Name>, ...], ... }    // optional diff input
) -> {
  solution:      "<path>",
  inventory:     { <TableType>: [<Name>, ...], ... },
  build:         <shared build block>,
  missing:       { <TableType>: [<Name>, ...], ... },    // present only when expected_names supplied
  unexpected:    { <TableType>: [<Name>, ...], ... }    // present only when expected_names supplied
}
```

Parameter	Required	Notes
solution_name	Yes	The .dbsln to open. Either a base name resolved against the standard Solutions folder or an absolute path ending in .dbsln.
expected_names	No	Object shaped as { table_type: ["Name1", "Name2", ...], ... }. When supplied, the response includes missing[] (expected but not found) and unexpected[] (found but not expected) per table type.

What it opens

verify_solution_file opens only current-version .dbsln files. It performs a direct SQLite read — it does not go through the DbslnExplorer pipeline and does not handle legacy formats, password-protected files, or pre-migration schema versions. A .dbsln that does not match the current schema version returns SOLUTION_VERSION_MISMATCH; the caller is expected to upgrade the solution through Designer first.

Example

```
verify_solution_file(
  solution_name = "Foo",
  expected_names = {
    "ScriptsTasks":  ["Line1_Cycle", "Line2_Cycle"],
    "DisplaysList":  ["MainPage", "AlarmsPage"],
    "Unstags":       ["Plant1/Temperature", "Plant1/Pressure"]
  }
)

# Response (abbreviated)
{
  "solution": "C:\\Solutions\\Foo.dbsln",
  "inventory": {
    "ScriptsTasks":  ["Line1_Cycle", "Line2_Cycle"],
    "DisplaysList":  ["MainPage"],
    "Unstags":       ["Plant1/Temperature", "Plant1/Pressure", "Plant1/Flow"]
  },
  "build": { "objects": [...], "summary": { "built": 2, "failed": 0, "skipped": 0, "timestamp": "..."} },
  "missing": {
    "DisplaysList": ["AlarmsPage"]
  },
  "unexpected": {
    "Unstags": ["Plant1/Flow"]
  }
}
```

An agent that writes a workspace to a specification typically pairs create_solution_file or update_solution_file with verify_solution_file using the spec's expected-names list. The pair catches both build breaks (via build.summary.failed) and inventory drift (via missing[] and unexpected[]).

Workspace JSON Mirror — Round-Trip-Behind by Design

A ConsoleMCP workspace folder is a **projection** of the canonical .dbsln, not a live mirror. The relationship is one-way and explicitly round-trip-behind:

- Canonical state lives in the `.dbsln`. A `write_objects` call — or any other authoring path through DesignerMCP / ConsoleMCP — mutates the `.dbsln` directly.
- The workspace JSON files do *not* auto-refresh. The mirror is re-exported only when a Designer save or an explicit export operation runs against the workspace.
- Between an authoring write and the next save/export, the JSON files lag the `.dbsln`. Field-level checks (counts, presence, value asserts) against the JSON files during that window can read stale data.

For any gating check — verifying that an object was written, asserting a row count, confirming a value — read the `.dbsln` through DesignerMCP `get_objects` or `verify_solution_file` instead of grepping the workspace JSON. The `.dbsln` is the source of truth; the JSON mirror is a snapshot for Git, code review, and external tooling that runs offline against the workspace folder.

Error Codes (new in 10.1.5)

Code	Where	Meaning
SOLUTION_VERSION_MISMATCH	verify_solution_file	The target <code>.dbsln</code> is not a current-version file. Upgrade through Designer first; <code>verify_solution_file</code> does not migrate.
SOLUTION_ENCRYPTED	verify_solution_file	The target <code>.dbsln</code> is password-protected. <code>verify_solution_file</code> does not accept credentials — use the Designer session for protected files.
INVALID_EXPECTED_NAMES	verify_solution_file	<code>expected_names</code> is not shaped as { <code>table_type</code> : [names], ... }. Response includes an <code>examples</code> array with the correct shape.

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