

MCP Server Setup Guide for REST APIs

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Overview

Model Context Protocol (MCP) servers provide domain-specific access to PPM product data. Each MCP server exposes a focused set of tools relevant to its product domain.

The MCP Server is installed together with the REST API as part of the standard installation package. While the REST API provides secure HTTP endpoints for product data access, the MCP Server enables MCP-compatible AI assistants to interact with PPM product data using natural language.

Attention: For more information about configuring and using the REST API in your product environment, see the *REST APIs and MCP Server for Deltek PPM Products Installation Guide*. Both the Installation Guide and the MCP Server Setup Guide are included with the **Deltek PPM REST API and MCP Server** installer available in Deltek Software Manager (DSM) under **PPM Administrator » PPM Administrator 1.0 » Sub-Release**.

These documents are also available in the [Deltek Learning Hub](#).

Once installed and connected, MCP servers require minimal ongoing configuration beyond authentication session management. Multiple MCP servers can be connected simultaneously, allowing AI assistants to access data across multiple PPM product domains from a single interface.

This guide describes how to configure and use the MCP Server in your product environment. It also includes example procedures for connecting MCP servers to AI assistants, using Claude Code and Claude Desktop for illustration.

MCP Server Installation Behavior

Each MCP server:

- Represents a single product or data domain
- Exposes only the tools and data relevant to that domain
- Can be connected independently to an AI assistant

Multiple MCP servers can coexist on the same system.

MCP Server Requirements

The following IIS components must be installed on the server hosting the MCP servers:

- IIS Application Request Routing (ARR) extension
- IIS URL Rewrite module

These components are required to correctly route and rewrite MCP requests.

MCP Server Connection Workflow

Connecting an MCP server to an AI assistant is a one-time configuration. Although the exact steps vary by AI tool, the general process is the same.

To connect an MCP server to an AI assistant:

1. Obtain the MCP server URL (for a server hosted deployment) or the path to the local MCP server file (for a desktop deployment).
2. Add the MCP server to the AI assistant's MCP configuration and assign it a recognizable name.
3. Restart or refresh the AI assistant so it can register the MCP server.

The AI assistant must be restarted or refreshed before the MCP server becomes available.

MCP Server Usage

After the MCP server connection is established:

- The AI assistant automatically discovers the tools exposed by the MCP server.
- The AI assistant invokes those tools when responding to relevant prompts.
- No manual tool configuration is required after discovery.

Multiple MCP Servers

An AI assistant can connect to multiple MCP servers simultaneously, allowing access to multiple PPM product data domains at the same time.

Each MCP server operates independently and does not affect other connected MCP servers.

Known Limitations and Considerations

There are known limitations and considerations related to MCP server configuration, authentication, and usage. These limitations are enforced by the AI assistant, not by the MCP server itself.

- MCP server availability depends on valid authentication sessions.
- Session expiration requires manual refresh, depending on the AI tool.
- Tool name length limits or configuration constraints may apply in some desktop-based AI assistants.

Example: Configuring MCP Servers for Claude

This section illustrates how MCP servers can be configured, using Claude as an example.

Prerequisites

The following prerequisite applies when configuring MCP servers for use with Claude Desktop and Claude Code:

- **Node.js:** This is required to run **npm mcp-remote**. You can download it from <https://nodejs.org/>.

To verify whether **Node.js** is installed, run the following command:

```
node --version
```

If the command does not return a version number, install **Node.js** before proceeding.

Authenticate and Retrieve a Session ID

Before configuring an MCP server, you must authenticate the REST API of your product and obtain a session ID.

Note: The sample lines in each step are provided for illustration purposes and are specific to Cobra. They demonstrate how MCP servers can be configured and may not reflect your specific environment. Modify these values as needed to match your system setup or AI assistant.

To authenticate and retrieve a session ID:

1. Send a POST request to the authentication endpoint, passing your credentials in the JSON request body.

```
POST http://{server}/PPMRESTAPI/<ppm product>/auth/credentials
```

curl example:

```
curl -X POST "http://{server}/PPMRESTAPI/cobra/auth/credentials" \
-H "Content-Type: application/json" \
-H "Accept: application/json" \
-d '{
  "username": "{username}",
  "password": "{password}",
  "datasource": "{datasource}",
  "productid": "{productid}"
}
```

```
}'
```

The service returns a **ServiceStack AuthenticateResponse**, similar to the following:

```
{
  "Session Id": "abc123xyz...",
  "Session Uid": "OJ_:U+...",
  "Success": "true"
}
```

2. Copy the value of **Session Id**.

This value is passed as the ppm-session-id header in all subsequent MCP server requests.

Configuring MCP Server in Claude Code (Option A)

Follow the procedures in this section to configure MCP servers for use with Claude Code.

Register the MCP Server

Register the PPM product MCP server using the Claude CLI.

```
claude mcp add --transport http <ppm product >_gateway
https://<server>/PPMMCP/<ppm product>/gateway/mcp --header "ppm-session-id=<your-
session-id>"
```

Important: Deltek recommends using a valid SSL certificate from a trusted Certificate Authority for MCP Server deployments. Self-signed certificates may not be accepted by some MCP clients and can result in connection failures or require users to bypass certificate validation

To add the MCP Server and bypass certificate validation, run the following command:

```
claude mcp add <ppm product>_gateway --env NODE_TLS_REJECT_UNAUTHORIZED=0 -- npx mcp-
remote https://<server>/PPMMCP/<ppm product>/gateway/mcp --header 'ppm-session-id:
<your_session_id>'
```

For example, for Cobra:

```
claude mcp add cobra_gateway --env NODE_TLS_REJECT_UNAUTHORIZED=0 -- npx mcp-remote
https://<server>/PPMMCP/cobra/gateway/mcp --header 'ppm-session-id: <your_session_id>'
```

Verify the Connection

Follow this procedure to verify the connection.

To verify the connection:

1. Confirm that the MCP server is registered.

```
claude mcp list
```

2. Open a Claude Code session and enter the following prompt:

List the available <PPM product> projects:

A successful response returns project data.

Manage Sessions

Sessions expire after a period of inactivity. Follow this procedure if a "401 Unauthorized" error occurs.

To refresh the session:

1. Remove the existing MCP server.
2. Re-authenticate and obtain a new session ID.
3. Re-add the MCP server using the new session ID.

```
claude mcp remove <ppm product>_gateway

claude mcp add --transport http <ppm product>_gateway
https://<server>/PPMMCP/<ppm product>/gateway/mcp \

--header "ppm-session-id:<your-new-session-id>"
```

For example, for Cobra:

```
claude mcp remove cobra_gateway

claude mcp add --transport http cobra_gateway
https://<server>/PPMMCP/cobra/gateway/mcp \

--header "ppm-session-id:<your-new-session-id>"
```

Configuring MCP Server in Claude Desktop (Option B)

Claude Desktop uses a JSON configuration file to define the MCP servers. Follow the procedures in this section to configure MCP servers for use with Claude Desktop.

Configure the MCP Server

Follow this procedure to configure the MCP server.

To configure the MCP server:

1. Locate the configuration file.
`%APPDATA%\Claude\claude_desktop_config.json`
2. Add the following entry under "mcpServers":

```
{
  "mcpServers": {
    "<ppm product>_gateway": {
      "command": "C:\\\\PROGRA~1\\\\nodejs\\\\npx.cmd",
      "args": [
```

```

        "mcp-remote",
        "http://<server>/PPMMCP/<ppm product>/gateway/mcp",
        "--allow-http",
        "--header",
        "ppm-session-id: <your-session-id>"
    ]
}
}
}

```

For example, for Cobra:

```

{
  "mcpServers": {
    "cobra_gateway": {
      "command": "C:\\\\PROGRA~1\\\\nodejs\\\\npm.cmd",
      "args": [
        "mcp-remote",
        "http://<server>/PPMMCP/cobra/gateway/mcp",
        "--allow-http",
        "--header",
        "ppm-session-id: <your-session-id>"
      ]
    }
  }
}

```

3. Save the file and restart Claude Desktop for the changes to take effect.

Manage Sessions

Sessions expire in the same manner as in Claude Code. A 401 Unauthorized response indicates that the session ID is no longer valid.

To refresh the session:

1. Edit the **claude_desktop_config.json** file.
2. Replace the **ppm-session-id** value.
3. Restart Claude Desktop.

No CLI commands are required. This differs from the Claude Code workflow, which requires removing and re-adding the MCP server.

Known Issues and Considerations

This section describes known issues encountered when using Claude Desktop and their resolutions.

npx Path Resolution Error

Claude Desktop resolves **npx** to **C:\Program Files\nodejs\npx.cmd** and passes the path unquoted to **cmd.exe /C**. Because the path contains space, Windows splits the command, resulting in the following error:

'C:\Program' is not recognized as an internal or external command

Resolution

Specify the **8.3** short path in the configuration file:

```
"command": "C:\\\\PROGRA~1\\nodejs\\npx.cmd"
```

Appendix A: Product Data Domains

The MCP implementation includes domain-specific servers for each supported PPM product. This appendix describes these domains for all supported products.

Cobra Data Domains

This table provides an overview of the Cobra data domains and the entities exposed by each domain.

Domain	Description	Entities Exposed
Projects	In Cobra, a project provides the framework for managing budgets, actual costs, earned value, forecasts, and performance data.	- Project Master Records - Subprojects - Control Accounts - Work Packages - Milestones - Accounts - Audit Logs - Audit Log Time Phases - Audit Log Histories - Audit Log Accounts - Control Accounts Work Packages Resources - Control Accounts Work Packages Time Phases - Work Package Milestones - Variance Narratives
Resources	Resources are used to define the labor, materials, equipment, and other cost elements assigned to project work.	- Resources - Resource Files - Cost Calculations - Calculated Expressions - Calculated Results - Resource File Cost Results

Domain	Description	Entities Exposed
		Spread Curves
Rates	Rates are used to define the cost values applied to resources for project cost calculations.	- Rates - Rate Files - Rate Sets
Calendars	Calendars are used to define the working and non-working time periods used for project scheduling and cost calculations.	- Fiscal Calendars - Fiscal Calendar Sets - Fiscal Calendar Holidays
Apportionment	Apportionment is used to define work whose budget and earned value are derived from the performance of related work packages.	- Apportionment Resources - Apportionment Resources Sources - Apportionment Mapping Sources - Apportionment Mapping Targets
Classes	Classes are used to categorize and segregate project costs for budgeting, tracking, and reporting.	- Project Cost Classes - Project Cost Class Links - Project Cost Class Ranges - Project Cost Sets - Project Cost Set Classes
Codes	Codes are used to classify project data for filtering, grouping, aggregation, and reporting.	- Codes - Code Files
Configuration	Configuration is used to manage application settings,	- Product Configurations

Domain	Description	Entities Exposed
	database connections, and system configuration entries.	Product Preference
Integration	Integration data is used to support integration and data exchange with external systems.	- Change Requests - Change Request Projects
Notes	Notes are used to store narrative text and variance explanations linked to control accounts and work packages.	- Note Categories - Note Values

Open Plan Data Domains

This table provides an overview of the Open Plan data domains and the entities exposed by each domain.

Domain	Description	Entities Exposed
Calendars	Calendars define the working days and hours for the scheduling of activities and resources.	- Calendar Files - Calendar File Access Control - Working Days - Non-Working Days - Extra Days - Holidays
Codes	Codes allow you to collect and report project and resource information in a variety of formats ranging from high-level summaries to activity- or resource-level detail.	- Code Files - Codes - Code File Access Control - User Field Definitions for Codes
Resources	Resources are people, facilities, or other assets needed to perform the activities in a schedule.	- Resource Files - Resource File Access Control Skills

Domain	Description	Entities Exposed
		- Resources - Resource Availability - Resource Cost Escalations - Resource Codes - User Field Definitions for Resource Files, Resources, Resource Availability
Projects	In Open Plan, a project defines a schedule—a comprehensive timeline consisting of activities, dependencies, and resources required to complete the project. The schedule includes planned start and finish dates and provides a means of capturing progress and costs as the schedule is executed.	- Projects - Project Access Control - Activities - Relationships - Activity Resources - Activity Resource Usage - Activity Resource Costs - Activity Steps - Activity Risk Details - Codes for Projects and Activities - User Field Definitions for Projects, Activities, Relationships, Activity Resources, Activity Steps
Reporting Calendars	Reporting calendars allow you to display time-phased data in a Barchart or Histogram view using a non-linear date scale. Reporting Calendars can also be used in CrossTable Exports.	- Reporting Calendar Files - Reporting Calendar File Access Control - Reporting Calendar Periods
Spread Curves	Spread curves allow you to define how an activity resource	Spread Curves

Domain	Description	Entities Exposed
	is distributed over the duration of an activity.	Spread Curve Access Control
Configuration	Configuration supports both System Preferences and User Preferences.	- System Preferences - User Preferences - Preference Defaults
Calculated Fields	Calculated fields allow you to define fields whose values are calculated from data stored in the standard versions of the domain data model.	- Calculated Field Definitions - Calculated Field Access Control
Filters	Filters are used to limit the display of data based on a user-defined filter criterion.	- Filter Definitions - Filter Access Control
Sorts	Sorts are used to order the display of data in views based on a user-defined sort criterion.	- Sort Definitions - Sort Access Control
Global Edits	Global Edits are used to modify multiple records with a single operation using calculated fields and filters.	- Global Edit Definitions - Global Edit Access Control - Batch Global Edits - Batch Global Edit Access Control
Cross Table Exports	Cross table exports are used to export time-phased Activity Resource or Earned Value data summarized by Activities or Resources.	- Cross Table Export Definitions - Cross Table Export Access Control
Rollups	Rollups allow selected numeric and date fields for activities, resources, and codes to be rolled up.	- Rollup Definitions - Rollup Access Control

Domain	Description	Entities Exposed
Views	Views are used to add, update, and display project information in Open Plan.	- View Definitions - View Access Control - Title Block Definitions - Title Block Access Control - Bar Set Definitions - Bar Set Access Control

PM Compass Data Domains

This table provides an overview of the PM Compass data domains and the types of data exposed by each domain.

Domain	Description	Entities Exposed
Change Management Workflow	Change Management workflows are used to create, review, approve, and track project change requests and their impact on scope, schedule, and cost.	- Workflows - Histories - Related Workflows
Cost Progress Workflow	Cost Progress Workflows are used to collect, review, and approve progress updates related to project costs and earned value.	- Progress Entries - Progress Updates - Work Package Milestone Progress Updates - Control Accounts Work Package Resource Progress Updates
Explain Variance Workflow	Explain Variance workflows are used to document, review, and approve explanations for cost and schedule performance variances.	- Workflows - Histories - Related Workflows
Projects	Projects contain the project information used for planning,	Projects

Domain	Description	Entities Exposed
	tracking, workflow processing, and performance management.	▪ Linked schedule activities
Schedule Progress Workflow	Schedule Progress workflows are used to collect, review, and approve updates to project schedule progress and status.	▪ Progress Entries ▪ Progress Updates ▪ Activity Resource Progress Updates ▪ Activity Step Progress Updates
User Fields	User fields are used to define and manage custom fields that extend standard PM Compass data.	▪ User-Defined Source Fields ▪ User Field Mappings
Work Authorization Workflow	Work Authorization workflows are used to request, review, approve, and track authorization to begin project work.	▪ Workflows ▪ Histories ▪ Related Workflows
Workflow	Workflow provides access to workflow instances, assignments, statuses, and processing information.	▪ Workflow Statuses
Workflow Type	Workflow types define the available workflow configurations and processes used throughout PM Compass.	▪ Workflow Types ▪ Workflow Cost Detail Cost Sets ▪ Workflow Cost Detail Details ▪ Workflow Cost Detail Results ▪ Workflow Steps ▪ Workflow Step Actions