

# Creating a P4DTG Plugin: Integrating Perforce and Defect Trackers

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# Agenda

- Perforce Defect Tracking Gateway
  - Goals
  - Architecture
  - Behavior
- Anatomy of a P4DTG Plugin
  - Structure
  - Design Decisions
- What is the P4DTG SDK
  - Examples
  - MyDTS

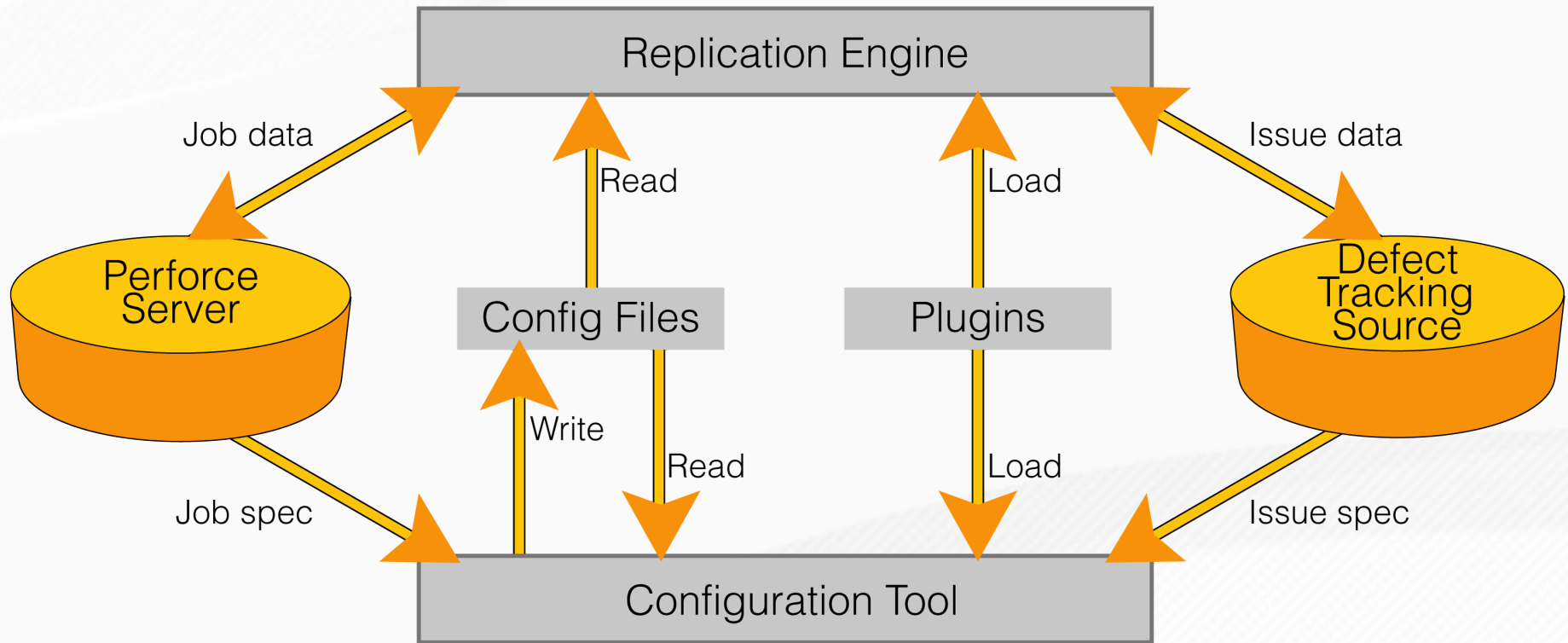


# Goals

- Primary
  - Automatic linking of fix information
  - Third party defect tracker integration
  - Robust and scalable
- Secondary
  - Customizable replication
  - Easy to adopt and maintain



# Perforce Defect Tracking Gateway



# Configuration File: Data Sources

Perforce Defect Tracking Gateway Configuration Editor

Defect Tracking Sources | **Perforce Server Sources** | Gateway Mappings

Defect tracking sources:

QualityCenter : win-ateague:8080 - DEFAULT:QualityCenter\_Demo (Quality C

Edit...

New...

Delete

Name: QualityCenter Type: Quality Center 9.0

Server connection details

Server: win-ateague:8080

User name: sa

Password: \*\*\*\*\*

Server status: Valid connection to server. Using time offset of -30 seconds

For Project: DEFAULT:QualityCenter\_Demo

Reference fields

Modified Date field: Modified

Modified By field: \*Not Supported\*

Help OK Cancel Apply

```
<DTGConfiguration>
  <DataSource
    type="DTS"
    plugin="Quality Center 9.0"
    nickname="QualityCenter"
    server="win-ateague:8080"
    user="sa"
    password="*****"
    module=
      "DEFAULT:QualityCenter_Demo"
    moddate_field="Modified"
    moduser_field="*Not Supported*" />
</DTGConfiguration>
```



# Configuration File: Data Mappings

```
<DTGConfiguration>
<DataMapping
  id="SampleMapping"
  scm_id="PerforceDepot"
  dts_id="QualityCenter"
  mirror_conflicts="ERROR">
  <FixRule
    dts_field="Comments"
    copy_type="APPEND"
    file_list="1"
    change_number="1"
    description="1"
    fixed_by="1"
    fixed_date="1" />
  <MirrorRules>
    <CopyRule
      scm_field="Description"
      dts_field="Description"
      copy_type="TEXT"
      truncate="0" />
```

...



# Configuration File: Replication Settings

**Perforce Defect Tracking Gateway Configuration Editor**

Defect Tracking Sources | Perforce Server Sources | Gateway Mappings

Defect Tracker/Perforce mappings:

SampleMapping: QualityCenter <--> PerforceDepot

Edit...

New...

Delete

Name: SampleMapping

Defect tracking source: QualityCenter

Perforce server source: PerforceDepot

Using Last Modified Date

Replication server status: Server has stopped

Start replication from: 2005/10/15 12:00:00 am ☒ Sync from start date

Last SCM replication was: 2007/05/03 05:35:12 am

```
<DTGGateway>
  <DTGSettings
    id="SampleMapping"
    force="1">
    <LastUpdateSCM>
      <Date
        year="2007"
        month="5"
        day="3"
        hour="5"
        minute="35"
        second="12" />
    </LastUpdateSCM>
    <LastUpdateDTS>
      ...
    </LastUpdateDTS>
    <StartingDate>
      ...
    </StartingDate>
  </DTGSettings>
</DTGGateway>
```





# Structure of a Plugin

- Shared Library
- C Functional Interfaces
  - Library
  - Server
  - Project
  - Defect
- Opaque Types: Connection, Project, Defect





# Design Decisions

- Level of Integration
  - DTS vs Database API
  - C/C++ Level vs Interpreted vs Webservices
- Workflow Impacts
  - Defect state vs Development process
- Data Field Mapping
  - 5 types: DATE, WORD, LINE, TEXT, SELECT
  - Read/Write vs Read Only
- Authentication
- Platform

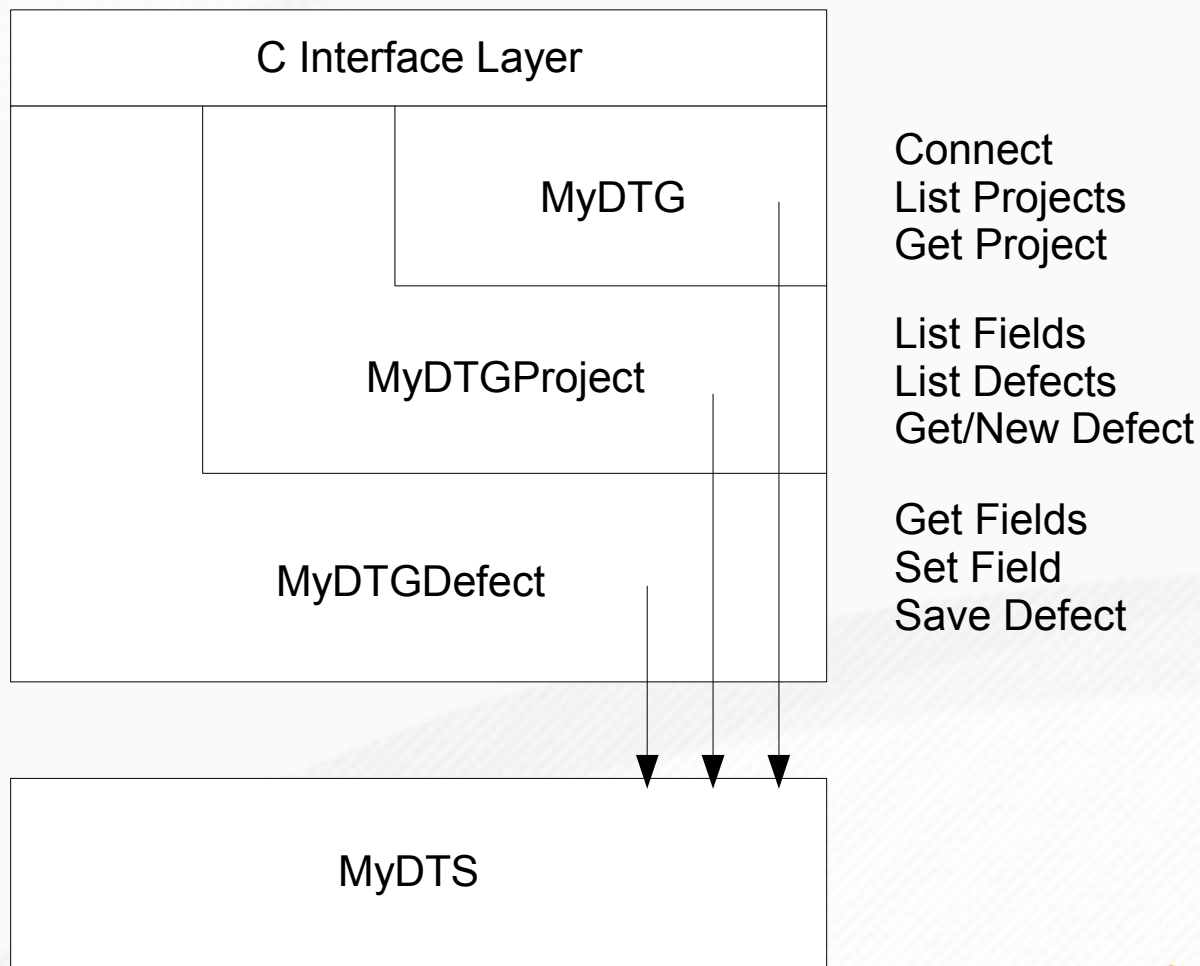


# P4DTG SDK

- Example Plugins
  - Perforce
  - Bugzilla
- MyDTS Framework
  - Exported C Functions
  - MyDTG, MyDTGProject, MyDTGDefect Classes
  - MyDTS Class
- Command-line test tool
- Supports Windows XP, Visual Studio 2003/2005



# MyDTS Framework Architecture



## Step by Step

- Compile framework and test tool
- Code incrementally
- Test at each stage
- Key areas
  - Connection
  - Data type mapping
  - Listing changed defects



## Wrap up and Questions

- P4DTG links defects with fix information
- P4DTG uses plugins to connect to DTS
- Plugins are dynamic shared libraries
- P4DTG SDK provides a complete framework
- SDK is in limited beta
- Contact: [partners@perforce.com](mailto:partners@perforce.com)
- Questions...

