



**Software  
Productivity  
Research, LLC**

# **SPR KnowledgePLAN®**

**Release Notes**

**Version 4.1**

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# SPR KnowledgePLAN®

## Version 4.1

### Release Notes

SPR KnowledgePLAN® version 4.1 is an incremental release in the KnowledgePLAN 4 estimation product line. This release contains a number of defect repairs and adjustments to features and model behavior. In addition, version 4.1 includes a number of new “content” artifacts:

- Knowledge Base
- Product Table
- Source Code Language Table
- Template and associated Domain

Version 4.1 has also been enhanced to support Microsoft Project 2003, the latest version of that product.

For a detailed discussion of all 3.x enhancements, which include Knowledge Base customization and the Task Category Hierarchy, and information about database upgrades from versions earlier than 3.1, please refer to the KnowledgePLAN Release Notes for Version 3.1, 3.2, and 3.3. For a detailed discussion of all 4.0 enhancements, which include a new knowledge base and a Japanese translation, please refer to the KnowledgePLAN Release Notes for version 4.0. These documents are available on request from SPR ([support@spr.com](mailto:support@spr.com)).

Please refer to the README.HTML file (included on the 4.1 CD-ROM media) for specific information on installing 4.1 or upgrading to 4.1 from previous versions.

## 4.1 Changes

### **Knowledge Base**

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The new default Knowledge Base supplied with KnowledgePLAN version 4.1 (Knowledge Base 2004c) contains the calibrated results of real project data collected by SPR LLC and its clients during the past year. These adjustments will in many cases change the results of estimates previously made using Knowledge Base 2002a (or earlier data sets.) Changes are intended to reflect current industry trends and benchmarks. Note that the most dramatic changes that we've observed with this data pertain to projects using Web technology.

### **Product Table**

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The Table of Analogies (sample software applications) supplied with KnowledgePLAN version 4.1 has been expanded with over 40 new categories of business and Web applications. Each entry in the Product table consists of an application type, a function point size for small, medium, and large examples of real applications, and typical complexity factors associated with the application. Product analogies are used as an approximation alternative to functional sizing of software for estimation.

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## Source Code Language Table

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In the 1970s, Allan Albrecht and his colleagues at IBM measured a number of projects using both logical source code statements and function point metrics. These pioneering studies found some interesting but not perfect correlations between logical source code size and function points for many programming languages. In 1984, SPR began publishing a table of these empirically-derived relationships, termed "backfiring ratios." The table now incorporates over six hundred source code languages and dialects.

Use of this data is subject to a number of caveats driven by its derivation and nature. Backfired function point counts are of lower accuracy than normal function point counts. Backfiring is ambiguous if the starting point is physical lines of code, and its accuracy is further compromised in sizing of mixed-language applications. Backfiring ratios vary based on individual programming styles and numerous other factors. The accuracy of this approach is significantly below that of formal Function Point Analysis counts done by certified personnel, but the speed and ease of generating results continue to make this approach popular, particularly with legacy applications.

Version 4.1 includes an extract of over 240 of the languages from the latest version (March 2005) of the SPR Programming Languages Table, representing an increase of about 100 entries from Version 4.0. Of these, approximately 25% are new to the Table, and have been added based on SPR research.

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## Template

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KnowledgePLAN version 4.1 includes a newly created Work Breakdown Structure template (SPR UPM) that emulates the IBM Rational Unified Process® (RUP®). This is a general framework for iterative development, pioneered by Grady Booch, Ivar Jacobson and James Rumbaugh, that can be used to describe specific iterative development processes.

Like the RUP, the SPR Unified Process Model adapts the KnowledgePLAN standard life cycle methodology to one that is built upon four phases: *Inception*, *Elaboration*, *Construction* and *Transition*. Task categories linked to the knowledge base in KnowledgePLAN are mapped to a generic RUP software development life cycle.

Please note that the SPR UPM template contains a *single iteration* example and should be adapted to the appropriate number of iterations for any project that it is used to estimate. Without adaptation, the work breakdown structure presents a *summary* of each task within each phase. To build a project plan with *n* iterations, the appropriate task groups should be duplicated and renamed (e.g., “Inception-1, Inception-2, Elaboration-1, Elaboration-2, etc.)

The SPR UPM template is defined with a high degree of task granularity, in order to accommodate the full range of typical RUP implementations. Typically, the full set of RUP-described tasks is *not* included in each iteration; rather, the work breakdown structure is customized by the project team to appropriate levels of granularity. As such, users of the SPR UPM template should be prepared to remove unnecessary tasks that appear in the WBS. Alternatively, task detail reports can be reported at the Activity level (instead of the task level), since there is a one-to-many mapping between WBS tasks and the estimation model task categories. For example, the following 17 tasks are identified in the Project Management activity within Inception:

- Develop Business case
- Acquire Staff
- Initiate Iteration
- Develop Risk Management Plan
- Develop Product Acceptance Plan
- Develop Problem Resolution Plan
- Define Project Organization and Staffing
- Define Monitoring & Control Processes
- Compile Software Development Plan
- Iteration Acceptance Review
- Schedule and Assign Work
- Monitor Project Status
- Report Status
- Identify and Assess Risks
- Develop Iteration Plan
- Iteration Plan Review
- Project Planning Review

The estimation model uses a simpler (less granular) approach to computing tasks. All of the above tasks are mapped to a corresponding set of five categories. This may prove to be a more manageable way of viewing the results:

- Proposal
- Personnel Management
- Management
- Development Plan
- Progress Reporting

## Summary of Changes

Data Entity	Location	Type	Description
Knowledge Base	Database	Added to database	A knowledge base named SPR 2004c has been added to the database as the default for new estimates.
Template	Database	Added to database	A new template named SPR UPM has been added to the database.
Domain	Database	Added to database	A new domain named SPR 2004 has been added to the database
Project	MS Project	New	KnowledgePLAN now supports Microsoft Project 2003.
Domain	Database	Added to database	Two new currencies have been added to the <i>CurrUnit</i> table in SPR provided domains.
Domain	Database	Added to database	98 new coding languages have been added to the <i>CodingLang</i> table in SPR provided domains.
Domain	Database	Added to database	42 new products have been added to the Product table in SPR provided domains.
Template	Creation	Fixed behavior	When creating a template, the reliability setting was incorrectly set to high. It is now set to moderate.
Project	Domain table dialog	Fixed behavior	Although database independent table data cannot be viewed in tables, the table creation feature allows this type of table to be created. This will now result in an error message being generated.
Project	MS Project	Fixed behavior	A defect in MS Project 2002 results in KnowledgePLAN not being able to perform a resource schedule. This occurs when lead/lag time is entered in percent form. MS Project 2002 is not able to process this form when the transport mechanism is an MPD file. This defect has been fixed in MS Project 2003.
Domain	Database	Added to database	Added the Hong Kong Dollar (HKD) and the Thai Baht THB to the currency table.
Domain	Resource table view	Fixed behavior	The resource name and code previously could not be modified in the resource table view. This has been corrected.
All	All table views	Fixed behavior	When typing in a character into a table cell, the character is displayed duplicated some number of times. This behavior has been corrected.

Presently, no version of the Microsoft Project Gateway product from Artemis International Solutions will work with versions 4.0.0 and 4.1.0 of KnowledgePLAN®.

Please feel free to contact SPR Support if you have any questions or concerns. SPR Support can be contacted at [support@spr.com](mailto:support@spr.com) or +1 (781) 273-0140.