Topic Sheet

The PTC Creo Granite® Interoperability Kernel

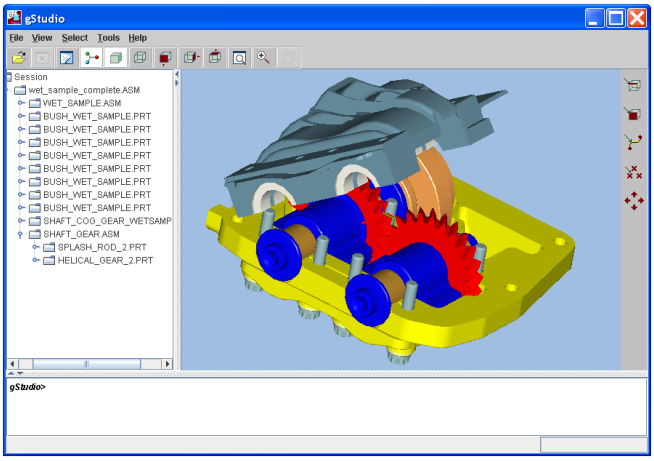
Exchange Model Data while Maintaining Assembly, Associativity, and Feature History Information

PTC Creo GRANITE is a 3D modeling and interoperability kernel that allows multiple software applications to seamlessly exchange information without losing any data pertaining to a model's assembly, associativity, or feature history.

PTC Creo Granite is feature-based and architected with unique technology that allows CAD/CAM/CAE applications to become associatively interoperable. Derived from PTC's best-in-class suite of products, PTC Creo Granite contains technology that enables any number of similarly built applications to read each other's files natively, so that engineers can easily evaluate, analyze, and create geometry. PTC Creo Granite also delivers true 'concurrent engineering' by enabling engineers and designers to work side-by-side in associative, heterogeneous design processes. It includes associative modeling libraries and a development environment that enables rapid prototyping and debugging of CAD applications.

Key benefits

- Simplified development of design applications via feature-based geometric 3D surface and solid modeling kernel
- Complete R&D solution including toolset for rapid debugging and prototyping and built-in translators
- Read native PTC Creo® part and assembly files directly into your commercial or in-house application without requiring a license of PTC Creo
- Drive associative updates to and from other applications built on PTC Creo Granite
- Reduce expenses by sharing native data from CAD programs between applications within diverse environments
- Access architecture and bindings with interfaces available on C++, Java, and COM



The PTC Creo Granite gStudio development environment allows quick prototyping and debugging of new code, and easy visualization and interrogation of CAD models.

Capabilities and specifications

- Full feature-based 3D surface and solid modeling operations
- Feature operations for extrusion, offsetting, thickening, tapering, rounding, lofting, sweeping, and skinning, revolving, removing faces, and creating/extracting shells
- Undo, redo and rollback
- Boolean operations for adding, subtracting, or intersecting bodies
- Metadata support including colors, layers, names, materials, and attributes
- Analysis tools for mass properties, clearance check, and interference detection
- Partial support for annotations retrieval from PTC Creo Parametric™ part and assembly files
- Intent objects to allow for built-in design intentions
- Meshing and hidden line rendering (HLR)
- Direct-read of PTC Creo Parametric part and assembly files, as well as models from other PTC Creo Granite based applications, with consistent IDs to enable associative updates for downstream applications
- Support for saving PTC Creo files (.prf) keeping orginal features intact
- Built-in translators to read and write commonly used file formats including IGES, STEP, VDA-FS, Parasolid, and ACIS SAT
- Unique gPlug architecture enables interoperability between all PTC GRANITE based applications
- Supports encapsulation of PTC GRANITE model data in the application's own file format, yet easily makes the data available to other PTC GRANITE applications

File Formats Supported by PTC Creo Granite		Read	Write
PTC Creo Parametric	.prt	All versions	"Yes" (Only valid for GRANITE loaded Creo files)
	.asm	Release 14 or later	No
PTC GRANITE (.g)		All versions	All versions
PTC Creo View™ (.ol, .ed, .pvs, .pvz, .edz)		Yes	Yes
Neutral (.neu)		Yes	Yes
IGES (.igs)		Yes	Yes
STEP (.stp)		AP 203 & 214	AP 203 & 214
VDA-FS (.vda)		Yes	Yes
ACIS (.sat)		Yes	Yes
ACIS (.sab)		Yes	Yes
Parasolid (.x_t)		Yes	Yes
Rhino (.3dm)		Yes	No
Inventor (.ipt, .iam) (Needs to have Inventor installed)		Yes	No
STL (.stl)		Yes	Yes
Through gPlugs	Alias files (.wire)	Up to Alias 2014	No
	Geomagic (.wrap)	Studio and Qualify version 5 and later	No

PTC Creo Granite applications are growing

PTC Creo Granite is now used in many different types of applications, from CAD/CAM/CAE to robotic simulation, visualization, analysis, and data translations.

> Among the benefits of PTC Creo Granite is that we can import different file formats. Also, the analysis functions in PTC Creo Granite work effectively because they allow easy accessibility to the interfaces of the kernel. You don't have to do a lot of programming to access the functions. Through analysis of the surfaces, we are able to create the points to plot the paths for the robots."

Patryk lischka,
Product Manager of FAMOS robotic®, carat robotic

> Incorporating PTC Creo Granite into our Geomagic Studio® and Geomagic® Qualify® products provides us a seamless way to accurately bring in PTC Creo Parametric models and other 3D CAD files into our system. The PTC Creo Granite GPI module makes it easy to convert Geomagic NURBS surface model to a CAD model to enable downstream CAD operations inside Geomagic Studio. With its wide range of supported file formats and modeling capability, PTC Creo Granite is a solution that is simple, affordable, and connected to many of the other CAD vendors and file formats we have to work with."

Karl Matthews,
Vice President of Product Management, Geomagic Inc.

Platform support and system requirements

- Windows 7

PTC Creo Granite is a software development toolkit with the following features that make integrating additional applications quick and easy:

- Access architecture and bindings with interfaces available on C++, Java, and COM
- Online user guide and API Wizard with listings of all APIs
- A Java-based test harness – gStudio – features a Java command-line interpreter for Java and PTC Creo GRANITE commands. Using gStudio, you can prototype new code quickly and use journal files from the applications to investigate software performance
- Backed up by a dedicated PTC technical support team comprised of experienced CAD software developers committed to customer satisfaction

Please visit the PTC support page for the most up-to-date platform support and system requirements.

For more information, visit:
PTC.com/products/creo/granite-interoperability-kernel
Or contact a PTC representative for more information.

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