

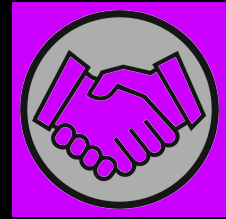
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ANSYS Academic 11.0 Summary For Customers & Prospects Revision 4.0 – October 2007

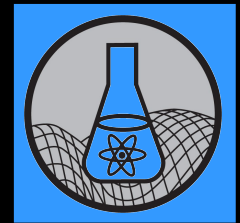
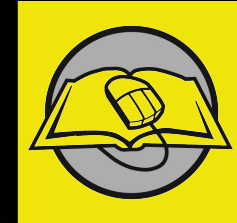


**Dr. Paul Lethbridge
Academic & Research
Program Manager**

ANSYS®



Product Strategy



Product Plan Fundamentals



- **A Streamlined Product Portfolio**
 - We have moved from 117 release 10.0 product variants down to 34.
 - Clarified product “legal use” categories: Associate, Research & Teaching
 - Revised nomenclature: “**Academic**” instead of “**Educational**”.
- **Enhanced Content & Competitiveness**
 - Bundles of products & technology from our entire portfolio.
 - Revised problem size limits.
 - Improved "number of task" options.
 - License borrowing.
 - Increased academic LAN radius.
- **Improved Legal Differentiation from Commercial Products**
 - Academic specific logo for screen, printouts & reports.
 - Different license feature names between academic & commercial products

Core Product Levels



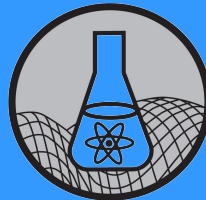
Increasing cost

Increased scope regarding legal terms of use

Increasing capability



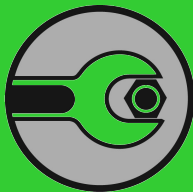
Teaching



Research

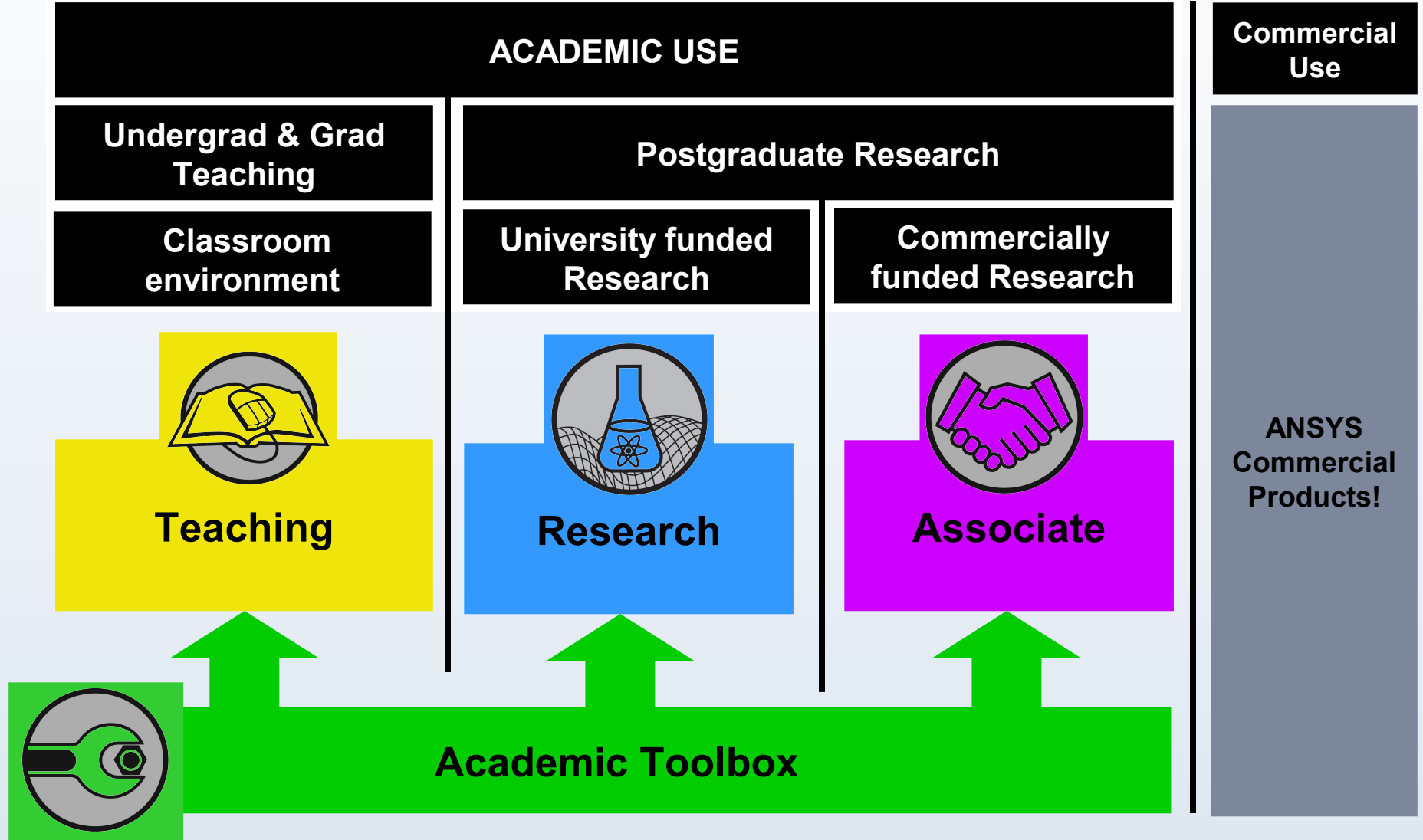


Associate



Academic Toolbox

Product Use Intent



Product Terms of Use



For all Academic products, the work must be non-proprietary. User(s) must be affiliated with an academic entity.



Academic Teaching:

- *Intended for undergraduate (or graduate) teaching. May NOT be used for Research.*



Academic Research:

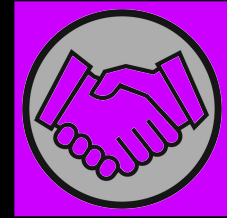
- *Intended use is academic research (either degree or non degree related) that is funded by an academic grant, scholarship, or directly by a University. May be used for Academic teaching.*



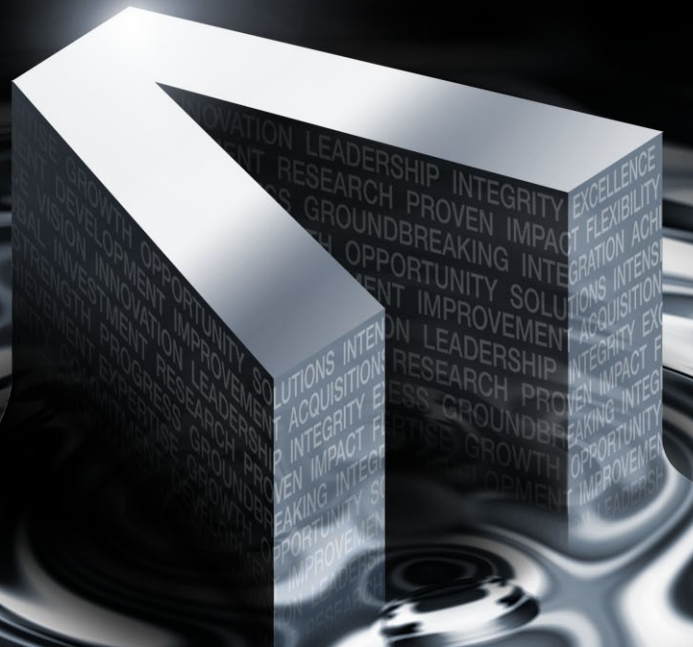
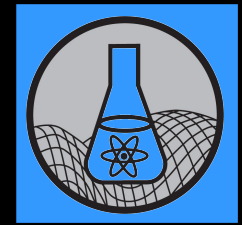
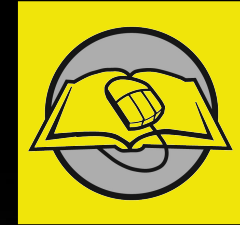
Academic Associate:

- *Intended use is academic research (either degree or non degree related) that is commercially funded. May be used for Academic Teaching.*

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The Academic Products



Product Portfolio - Summary



		Product Name
		ACADEMIC ASSOCIATE
		ANSYS Academic Associate
		ANSYS Academic Associate AUTODYN
		ACADEMIC RESEARCH
		ANSYS Academic Research
		ANSYS Academic Research CFD
		ANSYS Academic Research LS-DYNA
		ANSYS Academic Research AUTODYN
		ACADEMIC TEACHING
		ANSYS Academic Teaching Advanced
		ANSYS Academic Teaching Introductory
		ANSYS Academic Teaching Mechanical
		ANSYS Academic Teaching CFD
		ANSYS Academic Teaching AUTODYN
		ACADEMIC TOOLBOX
		ANSYS Academic Meshing Tools
		ANSYS Academic CFD Turbo Tools
		ANSYS Academic LS-DYNA Parallel
		ANSYS Academic Mechanical HPC
		ANSYS Academic AUTODYN HPC
		ANSYS Academic CFD HPC

Product Portfolio - Features



	Solver				Pre & Post Processing							WorkBench							HPC				Other																
	ANSYS DesignSpace (separate task)	ANSYS DesignSpace capability	ANSYS Mechanical capability	ANSYS Multiphysics capability	CFX Full Capability Solver	ANSYS TAS (FDTD Thermal)	AUTODYN (Explicit dynamics)	ANSYS LS-DYNA (Explicit dynamics)	CFX-Pr & CFX-Post	ICEM CFD Meshing (Quad, Hexa, Tetra, Prism)	ICEM output interfaces for ANSYS, CFX, Fluent	ICEM output interfaces for other FEA solvers	CFX-Mesh	Bladmodeler & TurboGrid	Trad ANSYS PrepPost (Prep7)	ANSYS LS-DYNA Drop Test Module	MCAD connections	WorkBench GUI	DesignModeler	Advanced Meshing	Simulation	DesignXplorer	Fatigue Module	FE Modeler	Rigid body dynamics	Remote Solver Manager	Mesh Morpher	NPROC=2 SMP & DANSYS	HPC > 2 processors available (at extra cost)	DANSYS & SMP >2 processors	Other SMP & DMP	Frequency Sweep VT	VT Accelerator	Problem size limits	Fluid Structural Interaction (MFX Solver)	Trad ANSYS User Prog Features	Academic screen watermark/logo	License borrowing	
Academic Associate	Y	Y	Y	Y	Y			Y	Y	Y		Y		Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y								Y	Y			
Academic Associate AUTODYN							Y			Y	Y	Y					Y	Y	Y	Y				Y		Y		Y											
Academic Research		Y	Y	Y	Y	Y			Y	Y	Y		Y		Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y								Y	Y	Y	
Academic Research CFD				Y					Y	Y	Y	Y					Y	Y	Y	Y		Y				Y		Y										Y	
Academic Research AUTODYN							Y			Y	Y	Y					Y	Y	Y	Y				Y		Y		Y									Y		
Academic Research LS-DYNA							Y								Y	Y	Y											Y										Y	
Academic Teaching Advanced	Y	Y	Y	Y	Y	Y			Y	Y	Y	Y		Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y						Y	Y	Y	Y	Y	
Academic Teaching Introductory	Y	Y	Y	Y	Y	Y			Y	Y	Y	Y		Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y						Y	Y	Y	Y	Y	
Academic Teaching CFD				Y					Y	Y	Y	Y					Y	Y	Y	Y		Y				Y									Y			Y	Y
Academic Teaching Mechanical	Y	Y	Y			Y				Y	Y				Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y						Y		Y	Y	Y	
Academic Teaching AUTODYN							Y			Y	Y	Y					Y	Y	Y	Y			Y		Y									Y			Y	Y	
Academic Meshing Tools										Y	Y	Y	Y				Y	Y	Y	Y																		Y	
Academic Turbo Tools													Y																									Y	
Academic Mechanical HPC		Y	Y	Y																								Y		Y	Y								
Academic CFD HPC				Y																								Y											
Academic AUTODYN HPC							Y																					Y											
Academic LS-DYNA Parallel							Y																					Y											

Academic MCAD Capability



The majority of the 11.0 academic products contain MCAD interfaces. The following are included:

- Geometry Interface for Parasolid
- Geometry Interface for SAT
- Geometry Interface for Solidworks
- Geometry Interface for CATIA V5
- Geometry Interface for SolidEdge
- Geometry Interface for One Space Designer
- Geometry Interface for Inventor/MDT
- Geometry Interface for NX
- Geometry Interface for Pro/ENGINEER
- Direct CAD Interface SDRC I-DEAS (ICEM only)

Note that CATIA V4 and CADNEXUS/CAPRI CAE Gateway for CATIA V5 are NOT included.

Academic Meshing Capability



The majority of the 11.0 academic products contain ICEM CFD & CFX-Mesh. The following meshing methods & features are included:

- Workbench Simulation meshing
- ICEM CFD Quad, Tetra, Prism, Hexa
- ICEM CFD Tgrid Delaunay, Hex dominant, Global (Staircase) and Body Fitted Cartesian meshing methods. *<Added at 11.0 SP1>*
- CFX-Mesh
- AI*Environment
- Traditional ANSYS Prep7 meshing

Problem Size - Node Limits



	Structural & Thermal	Direct Coupled Field	LF Emag	HF Emag	FLOTRAN	DesignSpace ²	CFX	AUTODYN ³	TAS ²
Academic Teaching Advanced	256K	256K	512K	1024K	1024K	∞	512K		∞
Academic Teaching Introductory	32K	32K	64K	512K	512K	∞	512K		∞
Academic Teaching CFD							512K		
Academic Teaching Mechanical	256K	256K ¹				∞			
Academic Teaching AUTODYN								50K	

- Notes:
1. Our standard "Mechanical" Direct coupled field elements available for thermal-structural etc.
 2. The DesignSpace & TAS capability have no problem size limits.
 3. AUTODYN limits are 10K nodes for 2D and 50K nodes for 3D
 4. Research & Associate level products have No problem size limits
 5. The h-type Element limits are equal to the node limits. Also p-type element limits where available (structural & electrostatics only) are ¼ of the node limits.

Problem Size Limits



Table showing when limits are tested for:

	Pre Processing - Geometry	Pre-Processing - Mesh	Solution	Post Processing
Traditional ANSYS GUI	No	Yes	Yes	Yes
ANSYS Workbench - Simulation	No	No	Yes	No
ANSYS CFX	No	No	Yes	No
ICEM CFD Meshing	N/A	No	N/A	N/A
ANSYS DesignSpace	No			
ANSYS TAS	No			
ANSYS AUTODYN	No	No	Yes	No

MFX Solver (FSI) Capability



Product Name	MFX Solver?
ACADEMIC ASSOCIATE	
ANSYS Academic Associate	Yes
ANSYS Academic Associate AUTODYN	No
ACADEMIC RESEARCH	
ANSYS Academic Research	Yes
ANSYS Academic Research CFD	No
ANSYS Academic Research LS-DYNA	No
ANSYS Academic Research AUTODYN	No
ACADEMIC TEACHING	
ANSYS Academic Teaching Advanced	Yes
ANSYS Academic Teaching Introductory	Yes
ANSYS Academic Teaching Mechanical	No
ANSYS Academic Teaching CFD	No
ANSYS Academic Teaching AUTODYN	No
ACADEMIC TOOLBOX	
ANSYS Academic Meshing Tools	Not Applicable
ANSYS Academic CFD Turbo Tools	
ANSYS Academic LS-DYNA Parallel	
ANSYS Academic Mechanical HPC	
ANSYS Academic AUTODYN HPC	
ANSYS Academic CFD HPC	

- **CFD Turbo Tools**

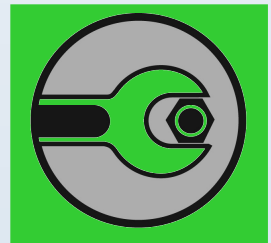
- *A separate turbo machinery specific preprocessing tool.*
- *Can bolt on to any academic product that contains CFX CFD capability.*
- *Contains BladeModeler & TurboGrid*

- **Meshing Tools**

- *A stand alone meshing product*
- *Contains ICEM CFD meshing & mesh export tools*
- *Contains DesignModeler & MCAD connection products*
- *Intended for use with 3rd party CFD solvers*

- **Parallel Processing Tools**

- *May only be used with Academic Research level products.*
- *All sold per processor/per core and are “physics” specific.*



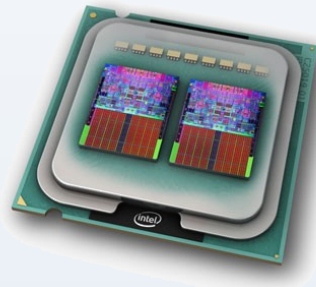
- Academic Parallel processing is referred to as:

High Performance Computing (HPC)

- Academic HPC licenses are sold on a per processor (or per core) basis.
- The following Academic HPC products are available:
 - ANSYS Academic Mechanical HPC
 - ANSYS Academic CFD HPC
 - ANSYS Academic AUTODYN HPC
 - ANSYS Academic LS-DYNA Parallel
- Academic HPC products “bolt on” to Academic Research products ONLY.



- Two processor HPC is included in all of the base Academic Products that support Mechanical, Thermal, & Emag physics (Teaching, Research & Associate).
- This addresses common dual core single processor requirements



- *Academic Research “Multiphysics” & “Mechanical” users will have access to 2 processors for SMP & DMP (i.e. NPROC=2). Beyond 2 processors they will need Academic Mechanical HPC licenses.*
- *Academic Research CFD users require N tasks of Academic CFD HPC to run on N processors (Assuming $N > 1$).*
- *Academic Research AUTODYN users require N tasks of Academic AUTODYN HPC to run on N processors (Assuming $N > 1$).*

HPC Capability



Product Name	Without HPC Product added		HPC add on available?	When HPC Product is added			
	SMP?	DANSYS?		SMP	DMP (MPP)	DANSYS	VT Accelerator
ACADEMIC ASSOCIATE							
ANSYS Academic Associate	2 proc. max	2 proc. max	Yes	Yes	Yes	Yes	Yes
ANSYS Academic Associate AUTODYN	No	No	Yes	Yes	Yes	No	No
ACADEMIC RESEARCH							
ANSYS Academic Research	2 proc. max	2 proc. max	Yes	Yes	Yes	Yes	Yes
ANSYS Academic Research CFD	No	No	Yes	Yes	Yes	No	No
ANSYS Academic Research LS-DYNA	No	No	Yes	Yes	Yes	No	No
ANSYS Academic Research AUTODYN	2 proc. Max	2 proc. Max	Yes	Yes	Yes	No	No
ACADEMIC TEACHING							
ANSYS Academic Teaching Advanced	2 proc. max	2 proc. max	No	N/A			
ANSYS Academic Teaching Introductory	2 proc. max	2 proc. max					
ANSYS Academic Teaching Mechanical	2 proc. max	2 proc. max					
ANSYS Academic Teaching CFD	No						
ANSYS Academic Teaching AUTODYN							

Multi Core – Mechanical HPC



PRODUCT	I have a dual core processor. Do I need additional HPC licenses to use both cores ?	I have two dual core processors (4 processors total). Do I need additional HPC licenses to use all cores?	I have a quad core processor. Do I need additional HPC licenses to use all cores?
ACADEMIC ASSOCIATE			
ANSYS Academic Associate	NO	Yes, 2 Mechanical HPC licenses are required	Yes, 2 Mechanical HPC licenses are required
ANSYS Academic Associate AUTODYN			
ACADEMIC RESEARCH			
ANSYS Academic Research	NO	Yes, 2 Mechanical HPC licenses are required	Yes, 2 Mechanical HPC licenses are required
ANSYS Academic Research CFD			
ANSYS Academic Research LS-DYNA			
ANSYS Academic Research AUTODYN			
ACADEMIC TEACHING			
ANSYS Academic Teaching Advanced	NO	YOU CAN ONLY USE 2 CORES/PROCESSORS. NO additional Mechanical HPC is available	
ANSYS Academic Teaching Introductory			
ANSYS Academic Teaching Mechanical			
ANSYS Academic Teaching CFD			
ANSYS Academic Teaching AUTODYN			
ANSYS Academic Teaching CFD			

Multi Core – CFD HPC



PRODUCT	I have a dual core processor. Do I need additional HPC licenses to use both cores ?	I have two dual core processors (4 processors total). Do I need additional HPC licenses to use all cores?	I have a quad core processor. Do I need additional HPC licenses to use all cores?
ACADEMIC ASSOCIATE			
ANSYS Academic Associate	Yes, 2 CFD HPC licenses are required	Yes, 4 CFD HPC licenses are required	Yes, 4 CFD HPC licenses are required
ANSYS Academic Associate AUTODYN			
ACADEMIC RESEARCH			
ANSYS Academic Research	Yes, 2 CFD HPC licenses are required	Yes, 4 CFD HPC licenses are required	Yes, 4 CFD HPC licenses are required
ANSYS Academic Research CFD			
ANSYS Academic Research LS-DYNA			
ANSYS Academic Research AUTODYN			
ACADEMIC TEACHING			
ANSYS Academic Teaching Advanced	YOU CAN ONLY USE 1 CORE/PROCESSOR. NO CFD HPC is available		
ANSYS Academic Teaching Introductory			
ANSYS Academic Teaching Mechanical			
ANSYS Academic Teaching CFD			
ANSYS Academic Teaching AUTODYN			
ANSYS Academic Teaching CFD			

Multi Core – AUTODYN HPC



PRODUCT	I have a dual core processor. Do I need additional HPC licenses to use both cores ?	I have two dual core processors (4 processors total). Do I need additional HPC licenses to use all cores?	I have a quad core processor. Do I need additional HPC licenses to use all cores?
ACADEMIC ASSOCIATE			
ANSYS Academic Associate	Yes, 2 AUTODYN HPC licenses are required	Yes, 2 AUTODYN HPC licenses are required	Yes, 2 AUTODYN HPC licenses are required
ANSYS Academic Associate AUTODYN			
ACADEMIC RESEARCH			
ANSYS Academic Research	Yes, 2 AUTODYN HPC licenses are required	Yes, 4 AUTODYN HPC licenses are required	Yes, 4 AUTODYN HPC licenses are required
ANSYS Academic Research CFD			
ANSYS Academic Research LS-DYNA			
ANSYS Academic Research AUTODYN			
ACADEMIC TEACHING			
ANSYS Academic Teaching Advanced	YOU CAN ONLY USE 1 CORE/PROCESSOR. NO AUTODYN HPC is available		
ANSYS Academic Teaching Introductory			
ANSYS Academic Teaching Mechanical			
ANSYS Academic Teaching CFD			
ANSYS Academic Teaching AUTODYN			
ANSYS Academic Teaching CFD			

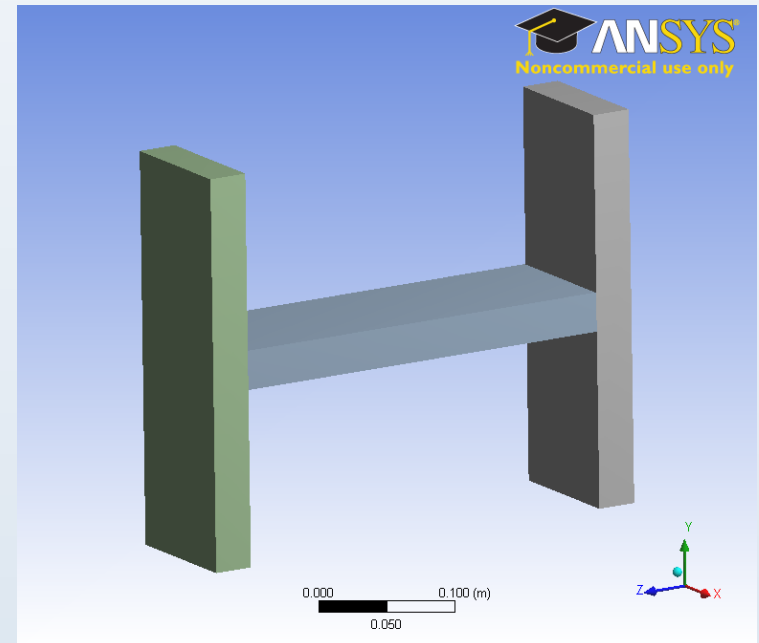
Noncommercial Use Only Logo



Academic specific logo stating “noncommercial use only” has been implemented for both Workbench & traditional ANSYS applications.

Reasons:

- Differentiate academic from commercial products
- Provide a strong visual legal to our terms of use.
- Present on all Teaching & Research variants.





Licensing in Detail



SERVER pgl001 001143eb1d03 1055

VENDOR ansyslmd

INCREMENT aa_a ansyslmd 9999.9999 31-oct-2006 25
CC0C1A225929 \

VENDOR_STRING=customer:00205492 SUPERSEDE
ISSUED=03-Aug-2006 \

START=28-Dec-2005

License feature names & increments:

- 11.0 academic license feature names are totally different from 10.0 & will not allow the 10.0 educational products to run. (*Note that database compatibility is retained of course!*)
- 11.0 academic licenses are partially configured task licenses. (*see next slide!*)
- The license feature names generally begin with “aa_” as in “ANSYS Academic”
- The MCAD connection products have a separate feature increment aa_mcad
- The Teaching level products generally additionally have a separate DesignSpace increment aa_ds.
- Each academic product license file has 2 or 3 “aa_*” feature increments, plus some additional increments that address licensing bugs/errors defects.

Configured Task Licensing



Current Situation 10.0

Multiphysics

Productivity Pack ED

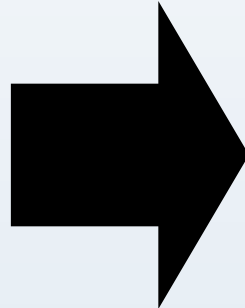
CFX Teaching Kit

ICEM CFD

HTI-TAS

Design Modeler

AI*Environment



Release 11.0

Primary Product License:

A license file with 2 or 3
feature increments
containing:

Multiphysics

Design Modeler

MCAD tools

CFX, ICEM CFD

HTI, DXVT etc...

Bug fixes:

Anywhere from 3 -13
additional feature
increments!

Optional Toolbox Product:

A license file with 1 or 3
feature increments.

Excerpt from Licensing Table



ACADEMIC ASSOCIATE	
ANSYS Academic Associate	aa_a, aa_mcad
ANSYS Academic Associate AUTODYN	aa_a_ad, aa_mcad
ACADEMIC RESEARCH	
ANSYS Academic Research	aa_r, aa_mcad
ANSYS Academic Research CFD	aa_r_cfd, aa_mcad
ANSYS Academic Research LS-DYNA	aa_r_dy, aa_mcad
ANSYS Academic Research AUTODYN	aa_r_ad, aa_mcad
ACADEMIC TEACHING	
ANSYS Academic Teaching Advanced	aa_t_a, aa_mcad, aa_ds
ANSYS Academic Teaching Introductory	aa_t_i, aa_mcad, aa_ds
ANSYS Academic Teaching Mechanical	aa_t_me, aa_mcad, aa_ds
ANSYS Academic Teaching CFD	aa_t_cfd, aa_mcad
ANSYS Academic Teaching AUTODYN	aa_t_ad, aa_mcad

Licensing Troubleshooting...



If you are experiencing a licensing issue here's your checklist:

- Make sure that you have installed the release 11.0 academic product & are not trying to use your new license file with an older installation!
- **Do not try & work out what product or features you should have by looking at the license file.**
- Identify what product you have by reviewing your license form. If in doubt contact your ANSYS sales contact.
- Once the 11.0 academic product has been identified, then use the academic product features table on the academic public website to check what features should be available.
- Common problems:
 - *TAS isn't working. TAS is only available on Win32 & Win64 platforms.*
 - *ICEM CFD export to third party solvers isn't available. This feature is only available for Academic Meshing Tools.*

Multiple Task Licenses



- The following task increments are available.
 - **Academic Associate - 1, 5**
 - **Academic Research - 1, 5, 25**
 - **Academic Teaching - 5, 25, 50**
- Eliminated our previous “base task plus incremental task” approach.
- Any combination of tasks is allowed. Examples:
 - 75 Teaching = 50 + 25
 - 11 Research = 5 + 5 + 1
 - Volume discount is built in. *So it is more economic to purchase a single 50 task than two 25 tasks.*

More task variants = More flexibility

Multiple Task Management



With multiple task licenses we to limit access to the contained products.

- *For a 25 task license, each task consists of ~ twelve “10.0 equivalent” products.*
- *The licensing will NOT allow $25 \times 12 = 300$ simultaneous products to be checked out & run!*
- *A 25 task license will limit the task check out up to 25 tasks of a “tangible stand alone product capability”.*

Example: ANSYS Academic Teaching Advanced 25 task license:

Use scenario #1

25 tasks of Multiphysics
25 task of DesignSpace
25 tasks of MCAD connections

Use scenario #2

11 tasks of Multiphysics
8 tasks CFX
6 tasks of ICEM CFD
25 tasks of DesignSpace
25 tasks of MCAD connections

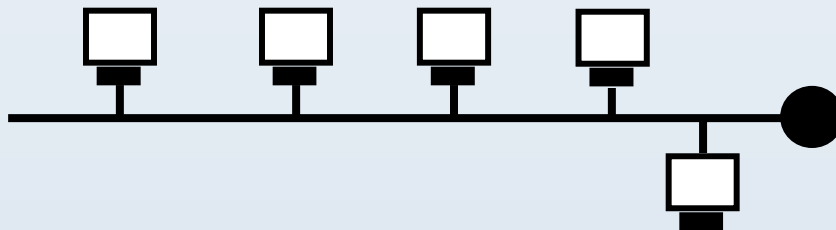
Academic Task Licensing



- For academic products that contain CFX capability, each task allows a user to access CFX-Pre OR CFX-Post while a solver is running.
- For Academic AUTODYN products, the 2 task license allows a user to run 4 simultaneous tasks of pre processing, post processing and solve for 2D or 3D in any combination, however a maximum of 2 solvers may be running simultaneously. (Thus 2 tasks = 2 solve tasks) . This provides the academic AUTODYN user with similar “task” capability as a commercial user.
- Generally a users experience will be superior when accessing features within Workbench, as opposed to working in the “Traditional” environment. The academic products allow the user to work in either GUI environment because both are included.

Academic Teaching Level products will have a license “borrow” capability.

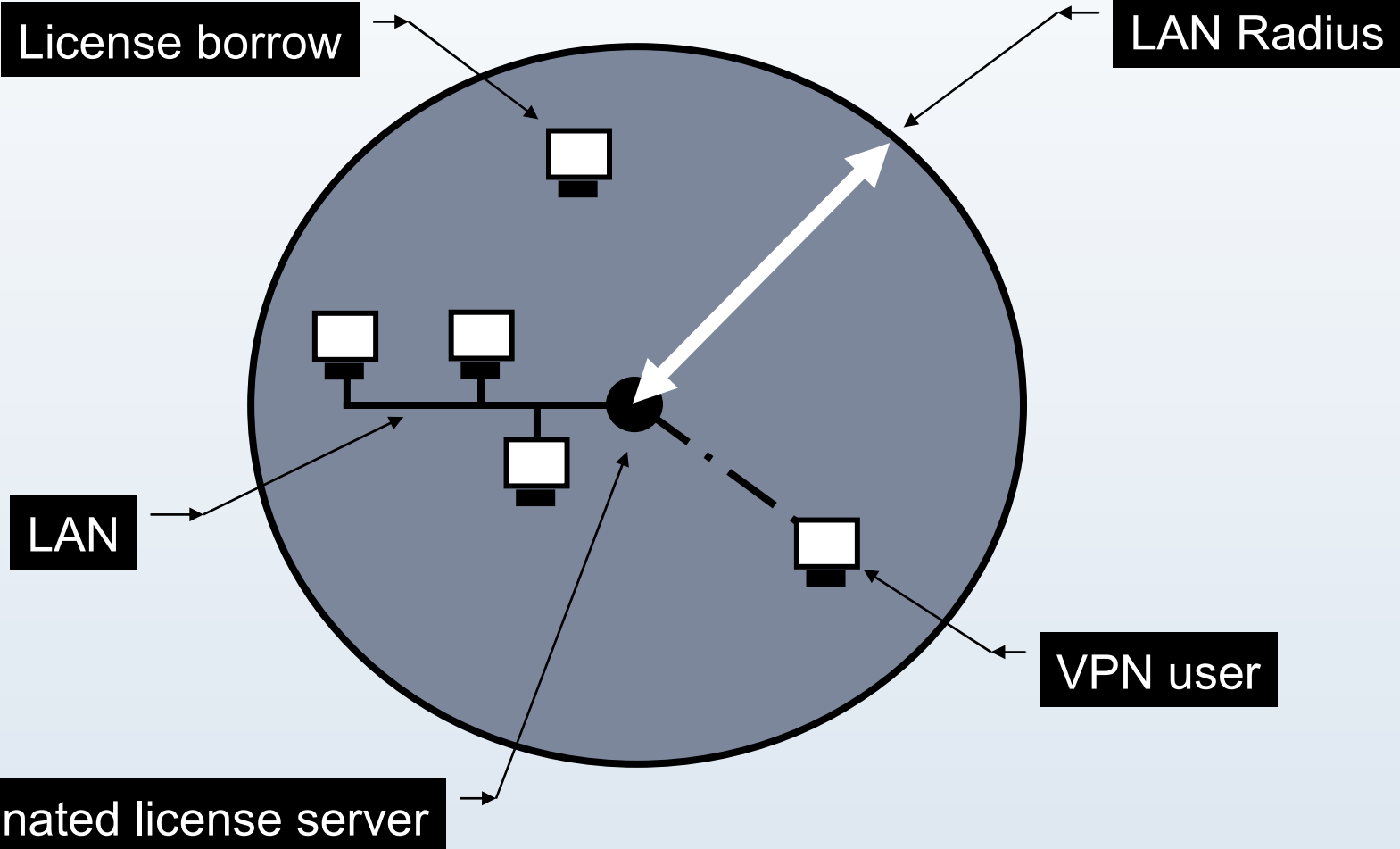
- Allow one or more tasks from a multiple task license to be borrowed.
- n-1 tasks may be borrowed from an n task license
- Maximum borrow duration is 1 week.
- MCAD connections have the borrow capability.
- The “unlimited” DesignSpace Teaching capability does NOT have the borrow capability.
- Borrow is turned OFF by default. It is turned on by request when you purchase or renew your license. Please discuss with your ANSYS sales person.



Increased LAN Radius

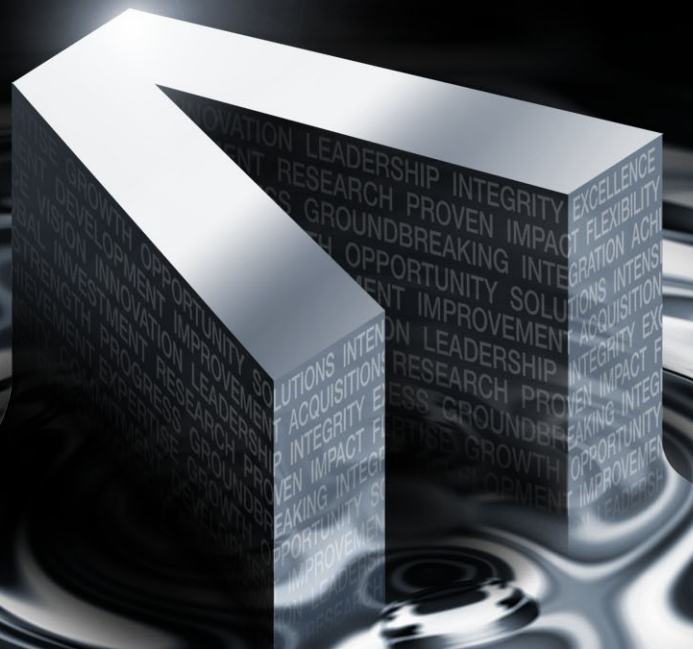


Our Academic LAN Radius is 50 miles.





Legacy Product Migration



10.0



11.0



Migrating to Release 11.0



If you have an earlier Academic product release, the migration policies are:

- All customers with current TECS or lease, including multiple year TECS or multiple year lease are eligible for migration.
- The migration is optional for eligible customers that are mid term Lease/TECS.
- Upon your renewal date in 2007 Lease customers must renew using a release 11.0 product.
- We will renew release 10.0 academic product paid up TECS for 1 year after the First Customer Ship Date (FCS) of 11.0. After this date all paid up customers on TECS must migrate to the current release.
- The migration is mandatory for customers who participated in our academic emulator promotion from 2006.
- The following events trigger the 11.0 migration:
 - *Mid TECS/Lease customer request (Free of charge migration)*
 - *Renewal*
 - *Participation in the "11.0 emulator promotion". (Free of charge migration)*
 - *New customer (obviously, not really a migration!)*

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Release 11.0 Service Pack 1



Release 11.0 Service Pack 1.



The Release 11.0 Service Pack 1 cleaned up several licensing bugs, creating a greatly simplifying the license file. These are related to the following areas:

- Rigid body dynamics
- MCAD connections
- Additional ICEM CFD meshing features
- CFX pre & post multiple task access
- AUTODYN multiple task access
- Teaching level DesignSpace capability problem size limits
- LS-DYNA
- Service Pack 1 was released on October 1st 2007.

ANSYS[®]

END!



My contact information:

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