

Structures: CAT A Native Roles, CAT C Power'By,

	Solve on 3DEXPERIENCE Cloud				
	E0 scenarios	E4 scenarios	E8 scenarios		
	SUN-1K-OC credits/hr				
Cloud IT configuration (cores)	Structures: CAT A Native Roles, CAT C Power'By, E0 scenarios	Structures: CAT A Native Roles E4 scenarios	Structures: CAT A Native Roles E8 scenarios		
Structural Mechanics & Durability solvers, including Generative Structural Design	4	19.11	0.00	0.00	
	8	27.09	6.50	0.00	
	18	37.17	22.74	16.24	
	36	47.11	47.11	45.47	
	144	77.07	77.07	77.07	
Configurations only support	48	51.87	51.87	51.87	
Structural Mechanics →	96	66.01	66.01	66.01	
	192	86.87	86.87	86.87	

SimUnit Credit usage rates for Structures roles deployed on the 3DEXPERIENCE Cloud and solving on customer Provided IT:
 When using roles that support 4 cores embedded compute for the 1st simultaneous structural simulation:
 No SimUnit tokens or credits are required for up to 4 cores,
 Add 1.48 SimUnit credits/hr for each core from 5 to 31 cores.
 Add 7.42 SimUnit credits/hr for each doubling of cores* starting above 31 cores
 When using roles that support 8 cores embedded compute for the 1st simultaneous structural simulation:
 No SimUnit tokens or credits are required for up to 8 cores,
 Add 1.48 SimUnit credits/hr for each core from 9 to 36 cores.
 Add 7.42 SimUnit credits/hr for each doubling of cores* starting above 36 cores.
 When using structural roles that don't include embedded compute or structural roles with embedded compute for the 2nd and higher simultaneous simulations:
 11.13 SimUnit credits/hr are required up to 2 cores,
 add 7.42 SimUnit credits/hr for each doubling of cores* starting from 2 cores
 Note: Add 3.71 SimUnit credits/hr for 1 GPU and 3.71 additional SimUnit SimUnit credits/hr for each doubling of GPUs*
 *A logarithmic function is used to determine credit usage rates between doublings of cores or GPUs

Structures: Embedded behavior:	E0 Scenarios	E4 Scenarios	E8 Scenarios
Specification	Roles that do not include embedded compute or the 2nd & subsequent simultaneous simulation using roles that include embedded compute	The first simultaneous simulation using roles that include 4 cores embedded compute	The first simultaneous simulation using roles that include 8 cores embedded compute
Cat A roles: Native 3DEXPERIENCE Examples:	SNE-OC, SYE-OC	SRD-OC, SLL-OC, GDE-OC, DRD-OC	SFO-OC, SSU-OC, FGM-OC, FGP-OC
Cat C: Power'By: Cat E: Standalone license	Abaqus	-	-
Details:	E0 scenarios require tokens or credits for compute	E4 scenarios support 1 simultaneous simulation on up to 4 cores	E8 scenarios support 1 simultaneous simulation on up to 8 cores
	2nd & subsequent simultaneous simulations for roles with embedded compute follow the tokens & credit usage for E0 roles		

	Solve on Customer provided IT		
	E0 scenarios	E4 scenarios	E8 scenarios
	SUN-1K-OC credits/hr		
Customer provided IT configuration (cores, no GPU)	Structures: CAT A Native Roles E0 scenarios	Structures: CAT A Native Roles E4 scenarios	Structures: CAT A Native Roles E8 scenarios
1	11.13	0.00	0.00
2	11.13	0.00	0.00
4	18.55	0.00	0.00
6	22.89	2.97	0.00
8	25.97	5.94	0.00
10	28.36	8.90	2.97
12	30.31	11.87	5.94
16	33.39	17.81	11.87
18	34.65	20.78	14.84
22	36.80	26.71	20.78
24	37.73	29.68	23.74
30	40.12	38.58	32.65
32	40.81	40.81	35.62
36	42.07	42.07	41.55
40	43.20	43.20	43.20
44	44.22	44.22	44.22
48	45.15	45.15	45.15
64	48.23	48.23	48.23
72	49.49	49.49	49.49
96	52.57	52.57	52.57
128	55.65	55.65	55.65
144	56.91	56.91	56.91
192	59.99	59.99	59.99
256	63.07	63.07	63.07
or more	see adjacent text for other configurations		

RANS CFD: CAT A Native 3DEXPERIENCE Roles

Solve on 3DEXPERIENCE Cloud

E0 scenarios	E16 scenarios
SUN-1K-OC credits/hr	

Reynolds Averaged Navier Stokes (RANS CFD)	Cloud IT configuration (cores)	RANS CFD: E0 scenarios	RANS CFD: E16 scenarios
	16	7.03	0.00
	36	24.22	17.18
	72	41.59	34.55
	144	64.00	56.96

Solve on Customer provided IT

E0 scenarios	E8 scenarios	E16 scenarios
SUN-1K-OC credits/hr		

Customer provided IT configuration (cores, no GPU)	RANS CFD: E0 scenarios	RANS CFD: E8 scenarios	RANS CFD: E16 scenarios
1	4.79	0.00	0.00
2	4.79	0.00	0.00
4	4.79	0.00	0.00
6	4.79	0.00	0.00
8	4.79	0.00	0.00
10	4.79	4.79	0.00
12	4.79	4.79	0.00
16	4.79	4.79	0.00
18	6.85	4.79	2.05
22	10.62	5.48	5.82
24	11.99	7.19	7.19
30	16.10	11.30	11.30
32	17.12	12.33	12.33
36	19.18	14.38	14.38
40	21.23	16.10	16.44
44	22.95	17.81	18.15
48	24.32	19.52	19.52
64	29.45	24.66	24.66
72	31.51	26.71	26.71
96	36.64	31.85	31.85
128	41.78	36.99	36.99
144	43.84	39.04	39.04
256	54.11	49.32	49.32
or more	see adjacent text for other configurations		

SimUnit Credit usage for RANS CFD roles deployed on the 3DEXPERIENCE Cloud and solving on customer Provided IT:
 When using the GDF-OC role for the 1st simultaneous RANS CFD simulation:
 No SimUnit tokens or credits are required for up to 8 cores,
 4.79 SimUnit Credits/hr from 9 to 21 cores,
 Add 12.33 SimUnit credits/hr for each doubling of cores* starting above 21 cores
 When using the FMK-OC, TME-OC or CTEAD-OC roles for the 1st simultaneous RANS CFD simulation:
 no SimUnit tokens or credits are required for up to 16 cores,
 Add 12.33 SimUnit credits/hr for each doubling of cores* starting above 36 cores.
 When using any of the above RANS CFD roles for the 2nd simultaneous simulation:
 4.79 SimUnit credits/hr are required up to 16 cores,
 Add 12.33 SimUnit credits/hr for each doubling of cores* starting above 16 cores.

 Note: Add 3.71 SimUnit credits/hr for 1 GPU and 3.71 additional SimUnit credits/hr for each doubling of GPUs*
 *A logarithmic function is used to determine credit usage rates between doublings of cores or GPUs

RANS CFD: Embedded behavior:	E0 Scenarios	E8 Scenarios	E16 Scenarios
Specification	2nd & subsequent simultaneous simulation using roles that include embedded compute	Includes 8 cores embedded compute	Includes 16 cores embedded compute
Cat A roles: Native 3DEXPERIENCE Examples:	FMK-OC, TME-OC, CTEAD-OC	GDF-OC - FD06 supports solver on customer provided IT. Cloud	FMK-OC, TME-OC, CTEAD-OC
Cat C: Power*By: Cat E: Standalone license	-	-	-
Details:	E0 scenarios require tokens or credits for compute for the 2nd or subsequent simultaneous simulation	E8 scenarios support 1 simultaneous simulation on up to 8 cores.	E16 scenarios support 1 simultaneous simulation on up to 16 cores.
	2nd & subsequent simultaneous simulations for roles with embedded compute follow the tokens & credit usage for E0 roles		

EMAG: CAT A Native Roles, CAT C Power'By,

Solve on 3DEXPERIENCE Cloud

Electromagnetics Engineer Role	Cloud IT configuration (cores/GPU)	SUN-1K-OC credits/hr		
		EMAG: CAT A Native Roles, CAT C Power'By, E0 scenarios :HF	EMAG: CAT A Native Roles, CAT C Power'By, E0 scenarios :HF	EMAG: CAT A EMC-OC Role E16 scenarios
		16	14.85	9.66
	36	18.28	13.09	7.14
	48	21.50	16.31	10.36
	96	31.93	26.74	20.79
	144	40.82	35.63	29.68
	192	49.08	43.89	37.94
	288	64.69	59.50	53.55
	(cores/GPUs)			
	24/4	32.94	27.75	20.26
	48/8	48.02	42.83	36.88

Credit usage for the Electromagnetics Engineer role deployed on the 3DEXPERIENCE Cloud and solving on customer Provided IT:
 When using the Electromagnetics Engineer role that support 16 cores embedded compute for the 1st simultaneous simulation:
 No SimUnit credits are required for up to 16 cores,
 add 3.71 SimUnit credits/hr per doubling of cores* starting above 16 cores
 When using the Electromagnetics Engineer role for the 2nd simultaneous simulation:
 High-Frequency solvers:
 12.61 SimUnit credits/hr are required up to 32 cores,
 add 3.71 SimUnit credits/hr per doubling of cores* starting above 16 cores
 Low-Frequency solvers:
 7.42 SimUnit credits/hr are required up to 32 cores,
 add 3.71 SimUnit credits/hr per doubling of cores* starting above 16 cores
 *A logarithmic function is used to determine credit usage rates between doublings of cores
 Note: Add 3.71 SimUnit credits/hr for 1 GPU and 3.71 additional SimUnit credits/hr per doubling of GPUs

Electromagnetics:	E0 Scenarios	E16 Scenarios
Embedded behavior:		
Specification	2nd & subsequent simultaneous simulation using roles that include embedded compute	Includes 16 cores embedded compute
Cat C: Power'By Examples: Cat E: Standalone license	EMC-OC	EMC-OC
Details:	E0 scenarios require tokens or credits for compute for the 2nd or subsequent simultaneous simulation	E16 scenarios support 1 simultaneous simulation on up to 16 cores.
2nd & subsequent simultaneous simulations for roles with embedded compute follow the tokens & credit usage for E0 roles		

Solve on Customer provided IT

Customer provided IT configuration (cores, no GPU)	SUN-1K-OC credits/hr		
	EMAG: CAT A Native Roles, CAT C Power'By, E0 scenarios :HF	EMAG: CAT A Native Roles, CAT C Power'By, E0 scenarios :LF	EMAG: CAT A EMC-OC Role E16 scenarios
	1	12.61	7.42
2	12.61	7.42	0.00
4	12.61	7.42	0.00
6	12.61	7.42	0.00
8	12.61	7.42	0.00
10	12.61	7.42	0.00
12	12.61	7.42	0.00
16	12.61	7.42	0.00
18	12.61	7.42	0.63
22	12.61	7.42	1.70
24	12.61	7.42	2.17
30	12.61	7.42	3.36
32	12.61	7.42	3.71
36	13.24	8.05	4.34
40	13.81	8.61	4.90
44	14.32	9.12	5.41
48	14.78	9.59	5.88
64	16.32	11.13	7.42
72	16.95	11.76	8.05
96	18.49	13.30	9.59
128	20.03	14.84	11.13
144	20.66	15.47	11.76
192	22.20	17.01	13.30
256	23.74	18.55	14.84
288	24.37	19.18	15.47
or more	see adjacent text for other configurations		

Plastic injection molding: CAT A Native Roles

		Solve on 3DEXPERIENCE Cloud	
		E0 scenarios	E8 scenarios
		SUN-1K-OC credits/hr	
Plastic injection molding simulation	Cloud IT configuration (cores)	Plastic injection molding: CAT A Native Roles E0 scenarios	Plastic injection molding: CAT A Native Roles, E8 scenarios
		8	not supported in R2022x

		Solve on Customer provided IT	
		E0 scenarios	E8 scenarios
		SUN-1K-OC credits/hr	
Customer provided IT configuration (cores, no GPU)	Plastic injection molding: CAT A Native Roles E0 scenarios	Plastic injection molding: CAT A Native Roles, E8 scenarios	
		1	0
		2	0
		4	0
		6	not supported in R2022x GA
		8	0
		10 or more	not supported in R2022x

The Plastic Injection Engineer IME role includes embedded solver support for 1 simultaneous simulation running on up to 8 cores. Token usage & credit based licensing is not yet supported for the Plastic Injection Engineer role IME

Design Exploration: CAT A Native Roles

Solve on 3DEXPERIENCE Cloud

SimUnit credits/hr usage for Design Exploration is based on:

1. Type of analysis
2. Number of cores used for the analysis
3. Number of design points
4. Level of parallelization

Design Exploration SimUnit credit/hr usage details are specified in the documentation.

Virbroacoustics: CAT C Power'By

Solve on 3DEXPERIENCE Cloud

		E0 scenarios
		SUN-1K-OC credits/hr
Virbroacoustics Cat C requires PXX-OC and W6S or W6P on premise	Cloud IT configuration (cores)	Virbroacoustics: CAT C Power'By E0 scenarios
		18
		90 (Minimum: 90 credits/job)

Process Automation & Optimization: CAT A Native roles SPF-OC or MDO-OC

Solve on 3DEXPERIENCE Cloud

SimUnit credit/hr usage for Simulation processes running on 3DEXPERIENCE cloud or on IT resources provided by the customer

Sequential, Loop and Design Exploration processes containing at least one 3DEXPERIENCE Native Solver adapter and no premium adapters	Sequential or Loop processes with: 1) no 3DEXPERIENCE Native solver adapters <u>or</u> 2) with 3DEXPERIENCE Native solver adapters and at least one premium adapter	Design Exploration processes with: 1) no 3DEXPERIENCE Native solver adapters <u>or</u> 2) with 3DEXPERIENCE Native solver adapters and at least one premium adapter
SimUnit credits/hr SUN-1K-OC		
0	2.23	4.45

Additional SimUnit tokens for simultaneous execution of design points (applies for execution on 3DEXPERIENCE cloud or on customer IT)	
Number of Simultaneous Design Points	SimUnit credits/hr SUN-1K-OC
0 to 4	0
5 to 8	1.48
9 to 16	2.97
17 to 32	5.94
33 to 64	11.87
65 to 128	23.74
129 to 256	47.49

Premium adapters	3DEXPERIENCE Native Solver adapters
OSCommand Script Excel MFT Any Custom Adapter Isight Matlab Loop if embedded role available	Physics Simulation Execution CST XFlow

Multibody Dynamics: Simpack - Cat C PowerBy or standalone Simpack

Solve on 3DEXPERIENCE Cloud

SimUnit credits/hr usage rates for Simpack is based on:

1. The content of the simulation.
2. The number of cores used to run the solver.

Simpack SimUnit credit/hr usage details are specified in the Simpack documentation.

CFD LBM: PowerFLOW - CAT C Power'By (Remote Visualization)

Solve on 3DEXPERIENCE Cloud

E0 scenarios
SUN-1K-OC
credits/hr

	Cloud IT configuration (cores)	Solver Processes (Compute Cores)	Control Process (Cores)*	CFD LBM: PowerFLOW - CAT C Power'By (Remote Visualization) E0
PowerFLOW LBM CFD	216	215	1	130.22
	504	503	1	206.51
	1008	1,007	1	307.09

PowerFlow:	E0 Scenarios
Specification	Roles that do not include embedded compute or the 2nd & subsequent simultaneous simulation using roles that include embedded compute
Cat A roles: Native 3DEXPERIENCE Examples:	-
Cat C: Power'By Examples:	PDT, PCA, PVZ, PIN
Details:	E0 scenarios require tokens or credits for compute
2nd & subsequent simultaneous simulations follow the tokens & credit usage for E0	
*Charge for Control Process core(s) subject to change in future releases	

CFD LBM: XFLOW - CAT C Power'By (Remote Visualization)

Solve on 3DEXPERIENCE Cloud

		E0 scenarios
		SUN-1K-OC
		credits/hr
XFlow LBM CFD	Cloud IT configuration (cores)	CFD LBM: XFLOW CAT C Power'By (Remote Visualization) E0 scenarios
	16	8.03
	24	17.83
	32	25.10
	48	44.21
	72	64.46
	144	103.48
	288	152.75
	396	181.34

		E0 scenarios
		SUN-1K-OC
		credits/hr
XFlow LBM CFD	Cloud IT configuration (GPU SMs)	CFD LBM: XFLOW CAT C Power'By (Remote Visualization) E0 scenarios
	16	7.53
	32	22.36
	40	31.64
	80	67.97
	160	96.93

XFlow:	E0 Scenarios
Specification	Roles that do not include embedded compute or the 2nd & subsequent simultaneous simulation using roles that include embedded compute
Cat A roles: Native 3DEXPERIENCE Examples:	-
Cat C: Power'By Examples:	XFG
Details:	E0 scenarios require tokens or credits for compute
2nd & subsequent simultaneous simulations follow the tokens & credit usage for E0	

Additional operations on 3DEXPERIENCE cloud

Datacheck or syntax Check running on 3DEXPERIENCE Cloud	SUN-1K-OC	
roles with embedded compute	Credits/hr	
roles without embedded compute	0	for the first simultaneous cloud execution
	2.52	
Postprocessing (results visualization) on 3DEXPERIENCE Cloud	SUN-1K-OC	
roles with embedded compute	Credits/hr	
roles without embedded compute	0	for the first simultaneous cloud execution
	1	

tokens or credits are not required for Data or syntax checks or postprocessing (results visualization) running on customer provided IT