

Nyt inden for Kunstig intelligens fra Juni 2025 til September 2026

8. September 2026
Jakob Dannesboe
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Hent Slideshow

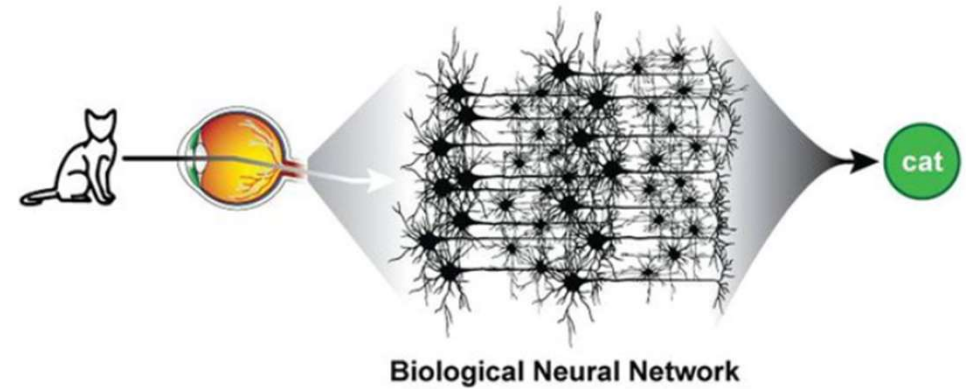


vcpt.eucl.dk/ai/smed2026/



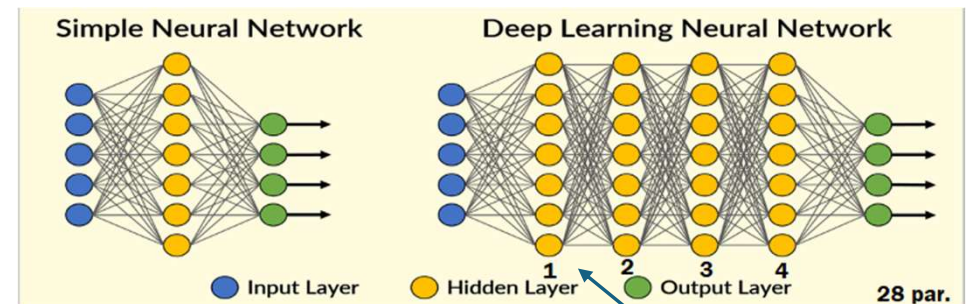
Genopfriskning på Kunstig intelligens

Intelligens - Biologiske neuroner



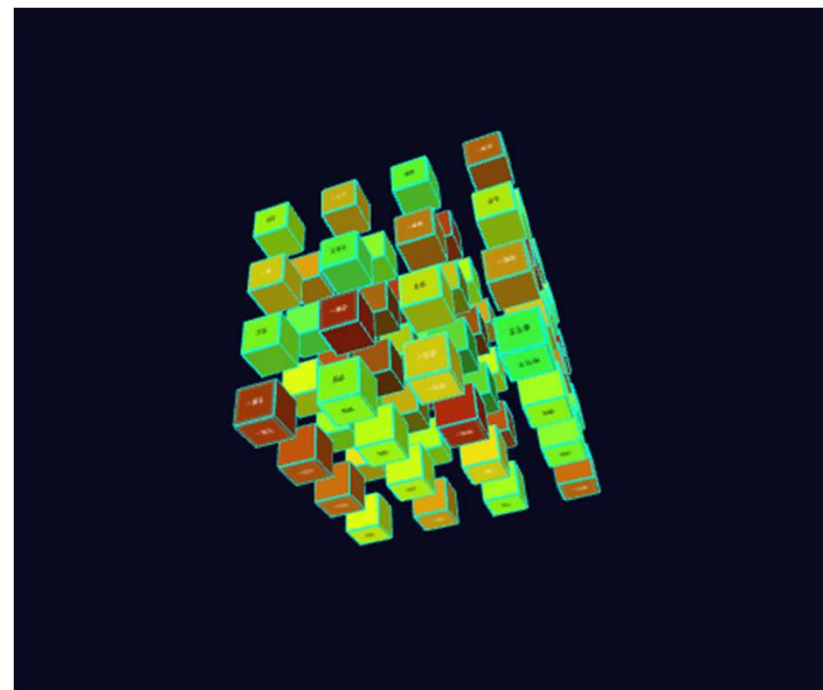
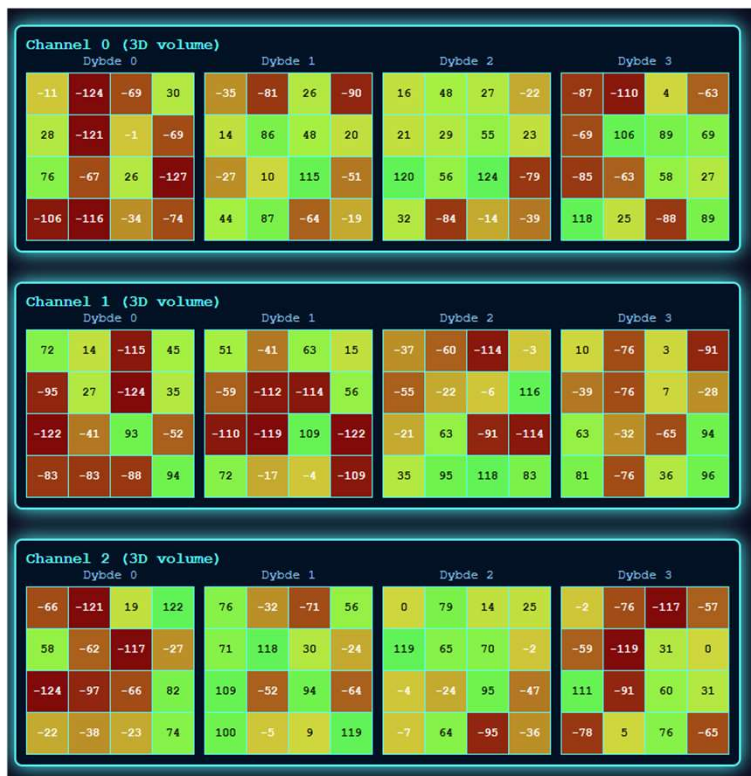
Kunstig intelligens – Tensor beregninger (simulerede neuroner)

- Input - lag 1 - lag 2 - lag 3 - lag 4 – Output



Tensor

Dette er en Tensor (simuleret neuron)



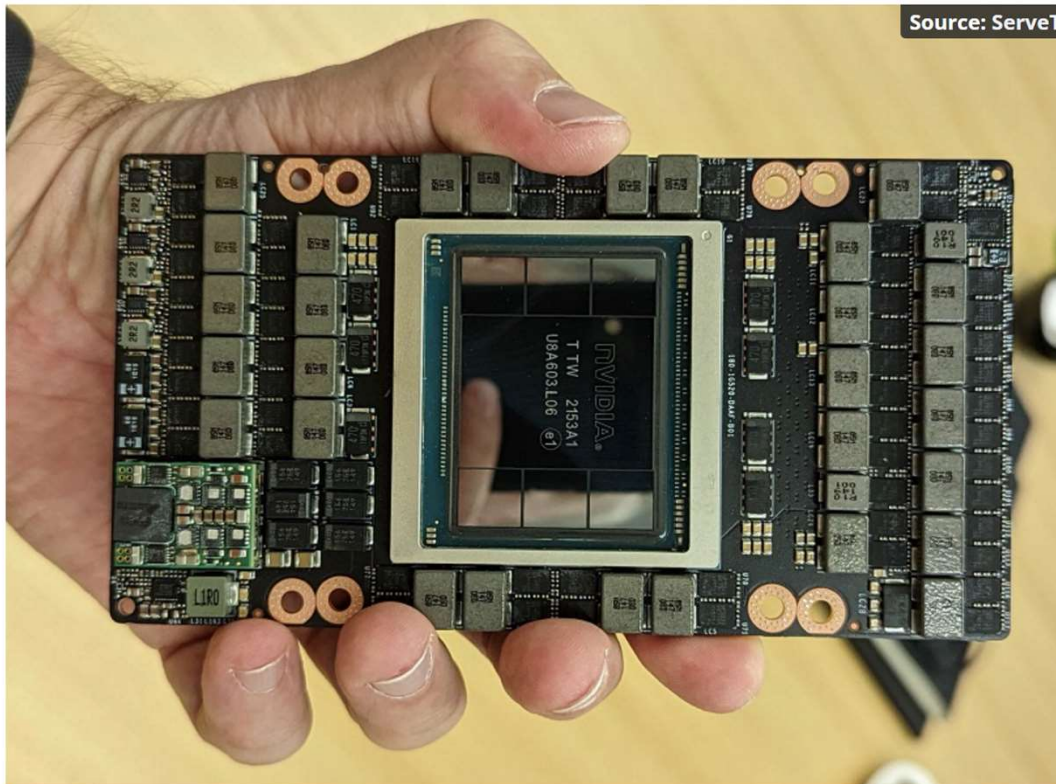
Alle disse rækker af tal, sat sammen i en klods
(Meget svært at lave beregninger på)

Special bygget elektronik til Tensor beregninger (AI chip)

A PEEK AT THE NVIDIA H100 HOPPER GPU
Posted by Jeremy Hellstrom | May 6, 2022 | General Tech | 2

H100 Hopper 1 NVIDIA 1621

Source: ServeTheHome



Tensor ~ Neuron

Datasheet



NVIDIA H100 Tensor Core GPU

456 separate maskiner til håndtering af "neuron-beregninger"

The NVIDIA H100 GPU with a PCIe Gen 5 board form-factor includes the following units:

- 7 or 8 GPCs, 57 TPCs, 2 SMs/TPC, 114 SMs per GPU
- 128 FP32 CUDA Cores/SM, 14592 FP32 CUDA Cores per GPU
- 4 Fourth-generation Tensor Cores per SM, 456 per GPU
- 80 GB HBM2e, 5 HBM2e stacks, 10 512-bit Memory Controllers
- 50 MB L2 Cache
- Fourth-Generation NVLink and PCIe Gen 5

Product Specifications

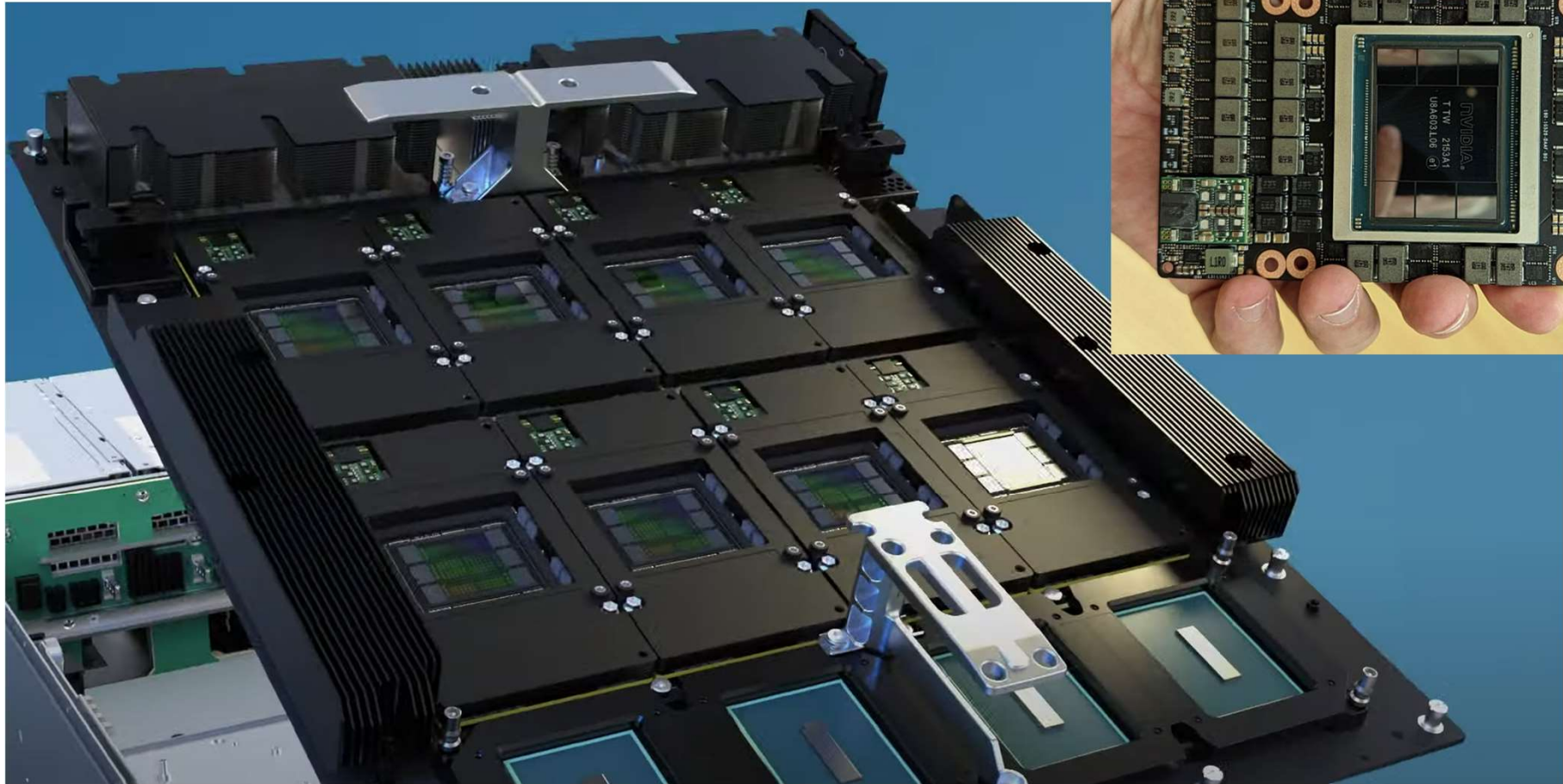
Table 1 through Table 3 provide the product, memory, and software specifications for the NVIDIA H100 NVL card.

Table 1. Product Specifications

Specification	NVIDIA H100 NVL
Product SKU	P1010 SKU 210 NVPN: 699-21010-0210-xxx
Total board power	PCIe 16-pin cable strapped for 450 W or 600 W power mode: ➢ 400 W maximum (default) ➢ 310 W power compliance limit ¹ ➢ 200 W minimum PCIe 16-pin cable strapped for 300 W power mode: ➢ 310 W maximum (default) ➢ 310 W power compliance limit ➢ 200 W minimum
Thermal solution	Passive
Mechanical form factor	Full-height, full-length (FHFL) 10.5", dual-slot

~300 watt

Sammensætning af chips til "Rack standardstørrelse"



Et Rack modul



Riktig mange Racks.!



250.000 AI-chips

”Colosus 1” fra SpaceX AI 450Mega Watt



Nogle spørgsmål?

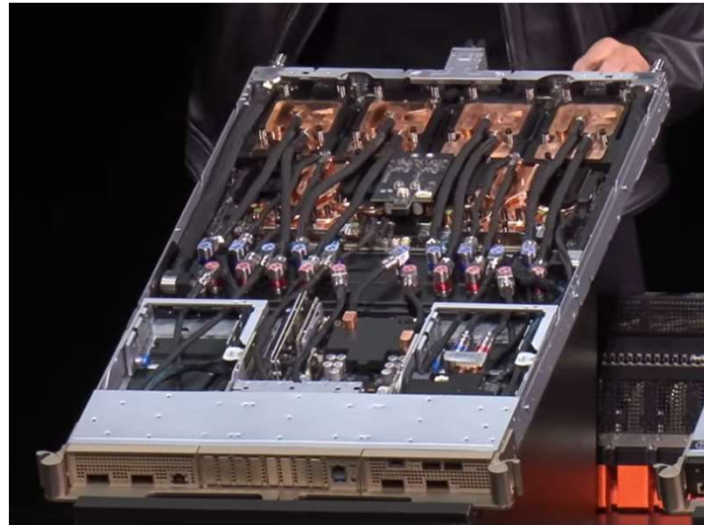
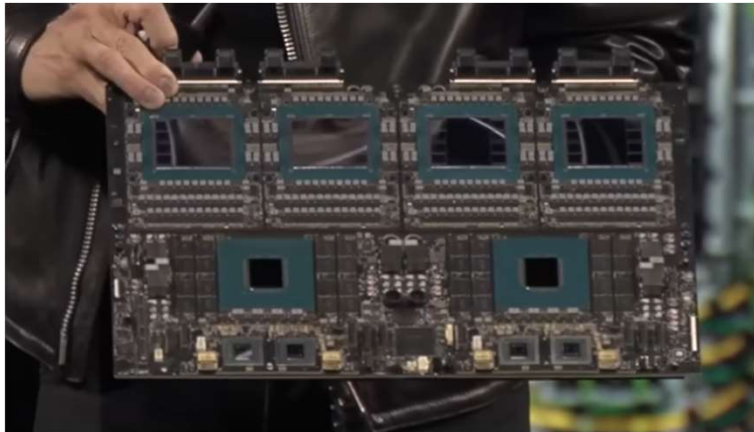
Hent Slideshow



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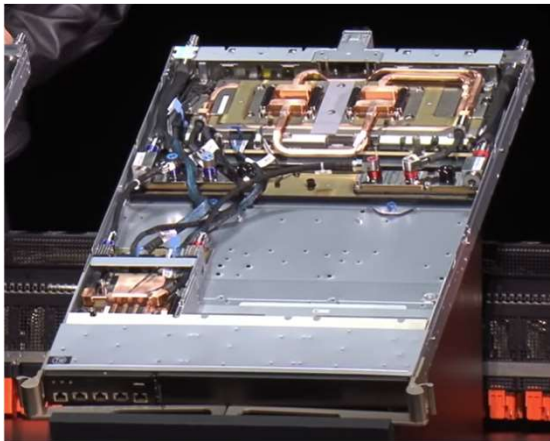


Nye AI beregnings chips siden sidt



Blackwell AI chip

- 68 x hurtigere end H100
 - $\frac{1}{7}$ af strømforbruget per beregning
- 36 x Grace computer til hver AI chip



Verdens hurtigste netværk (nu som Rack modul)
NVLink Switch

Nye AI beregnings chips siden sidt



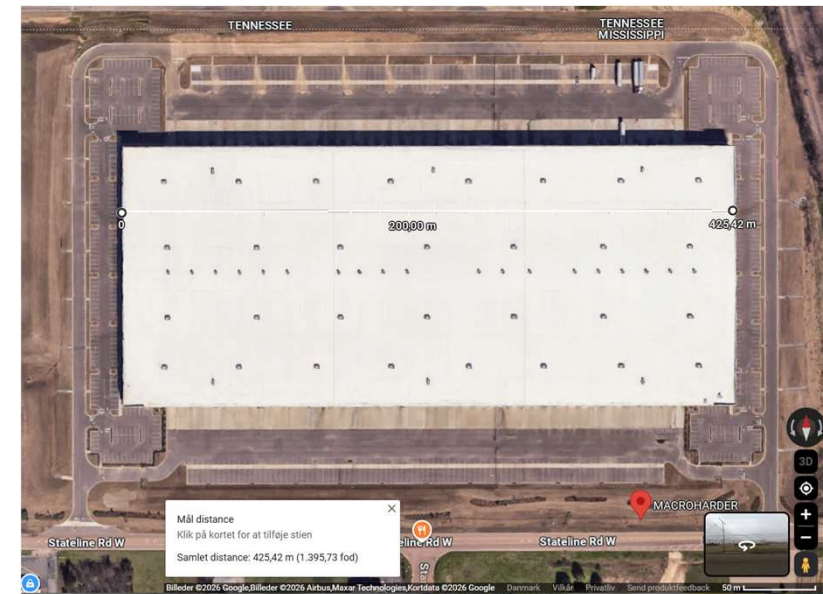
GB300 Standard Rack – 72 AI beregnings chips – 2592 parallelle computere
Strømforbrug: 140.000 Watt strøm
Køle krav: 250.000 Watt køl
Pris: ~20 millioner kr.

← 40 AI chips

← Verdens hurtigste netværk

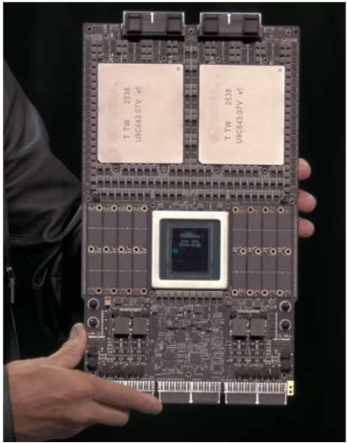
← 32 AI chips

SpaceXAI - AI data center - "Macroharder"
1.000.000 AI chips
~ 14.000 GB300 Standard Racks
Pris ~ 280 milliarder kr. for racks
425 x 175 meter



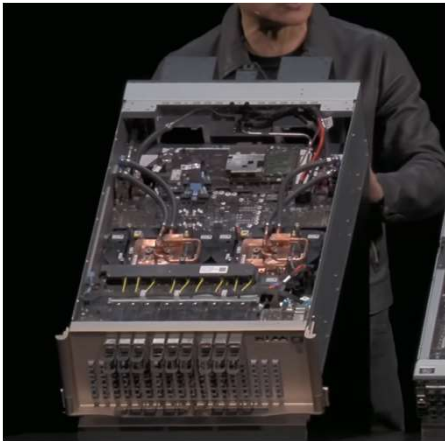
Nye AI beregnings chips siden sidt

7 måneder senere

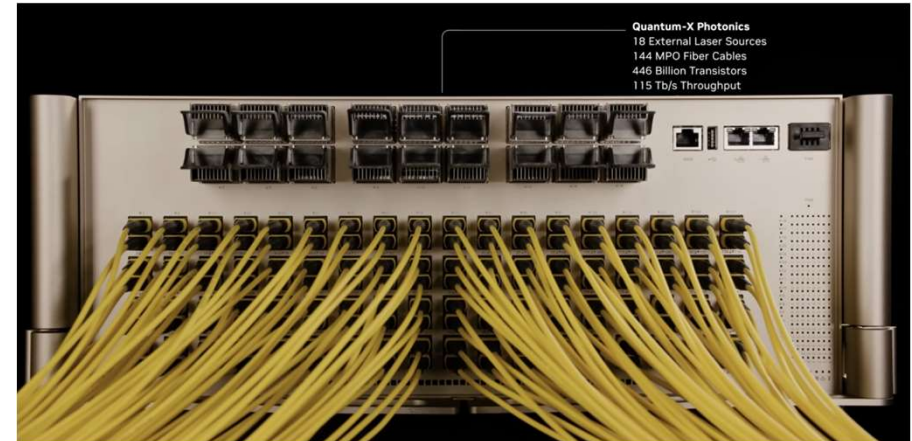
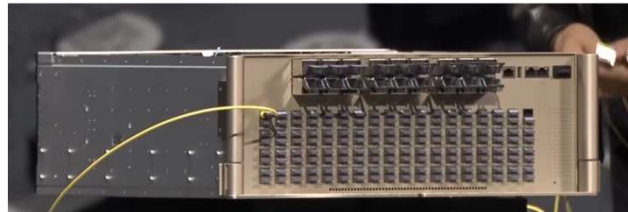


Rubin AI chip

- 900 x hurtigere end H100
 - $\frac{1}{33}$ af strømforbruget per beregning
- 44 x Vera computer til hver AI chip



Netværk til at sammensætte 144 Racks med direkte netværk. Hurtigere netværk end hele jordklodens internet trafik tilsammen



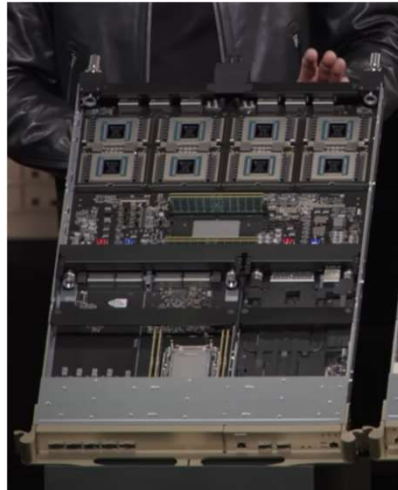
Nye AI beregnings chips siden sidt

Marts 2026

Exceptionelt hurtige
traditionelle computere
(704 individuelle
Computere per modul)



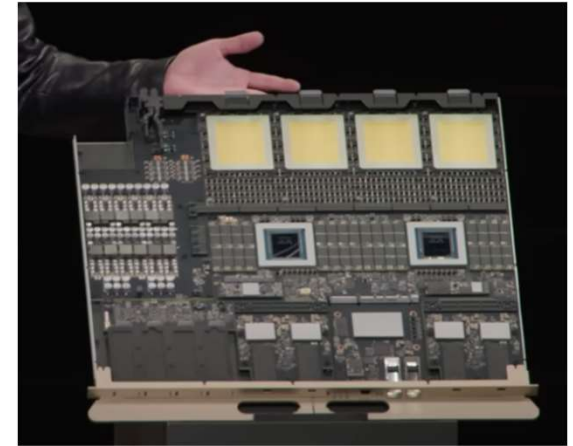
Exceptionelt komplicerede AI
arbejdsopgaver
(100x regnekraft per prompt)



Exceptionelt hurtig
database og hukommelse



Ny tyndt rack format som
fordobler antallet af AI chips i
et rack



Nye AI beregnings chips siden sidt

Marts 2026

Netværk til at sammensætte 512 Racks.
Kan forbinde flere millioner AI chips i ét AI center



Højspænding ind i datacenter



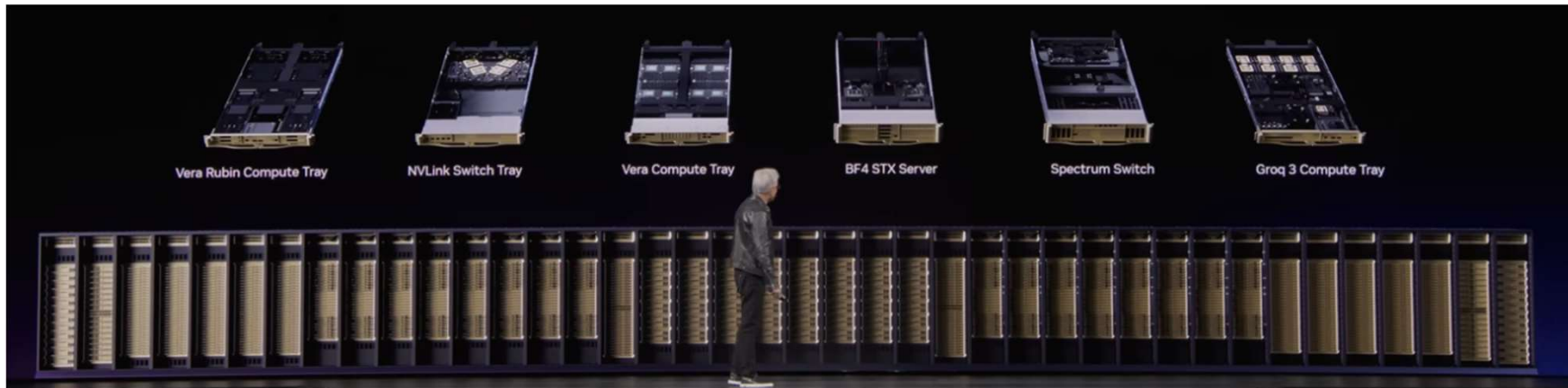
AI Datacenter med 1000 racks



Nye AI beregnings chips siden sidt

Marts 2026

Man bestiller nu 40 racks a gangen, som minimum



↑ Fiber Netværk til omverdenen

↑ Database og hukommelse

↑ 100 x AI beregning chips

↑ AI beregning chips

↑ Traditionelle computer beregninger

↑ Intern fiber Netværk

1:1 skala



Nogle spørgsmål?

Hent Slideshow



vcpt.eucl.dk/ai/smed2026/



Strømforbrug og nye AI centre

Skærbækværket tæt ved Fredericia

Gas – 400 MW = 400.000.000 Watt

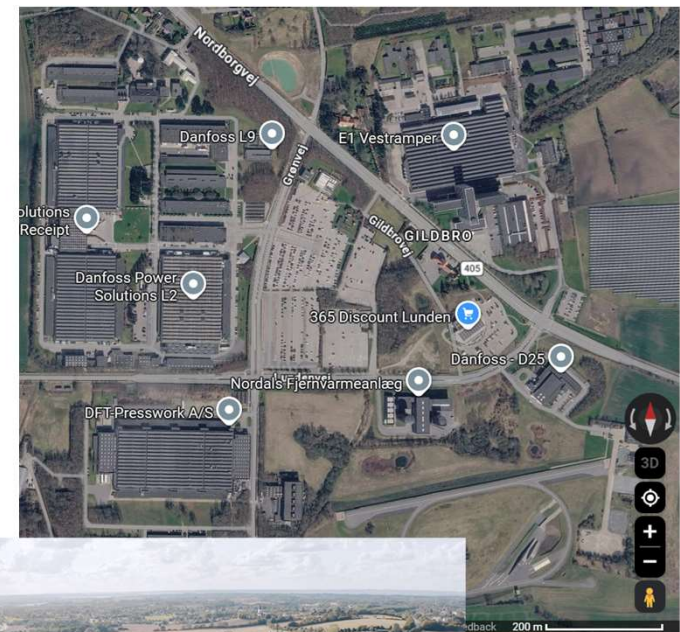
Flis – 100 MW = 100.000.000 Watt



Danish Crown Gedved
Strømforbrug – ca. 15 MW



Danfoss Nordborg
Strømforbrug – ca. 25 MW



ChatGPT Stargate Abilene Texas

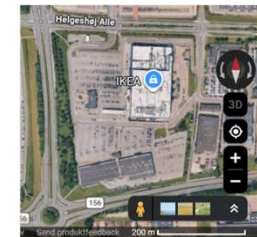
Hvert kompleks er 4x10.000 m² under tag

7 komplekser planlagt

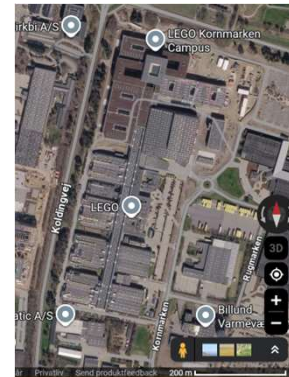
Hvert kompleks trækker 1000 MW



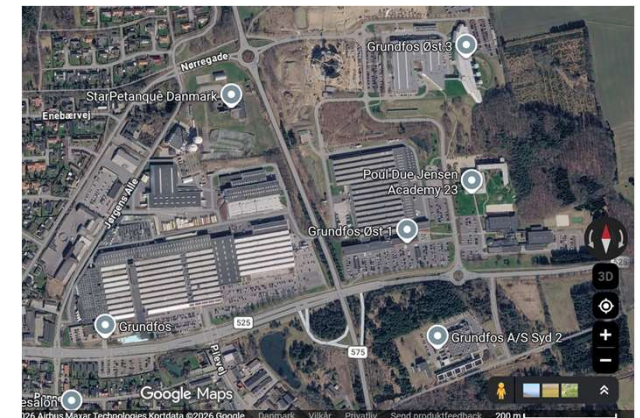
IKEA Tåstrup



Lego Billund produktion



Grundfos pumpe produktion



Google Gemini har over 30 sites i 11 lande
Her er "Council Bluffs" i Omaha
Strømforbrug 600 MW



Biler



Køl

Strøm

Anthropic Claude (Amazon AWS)
Standard AI beregningscenter

AI

Claude

300 meter lang
150 MW (1000 Racks)



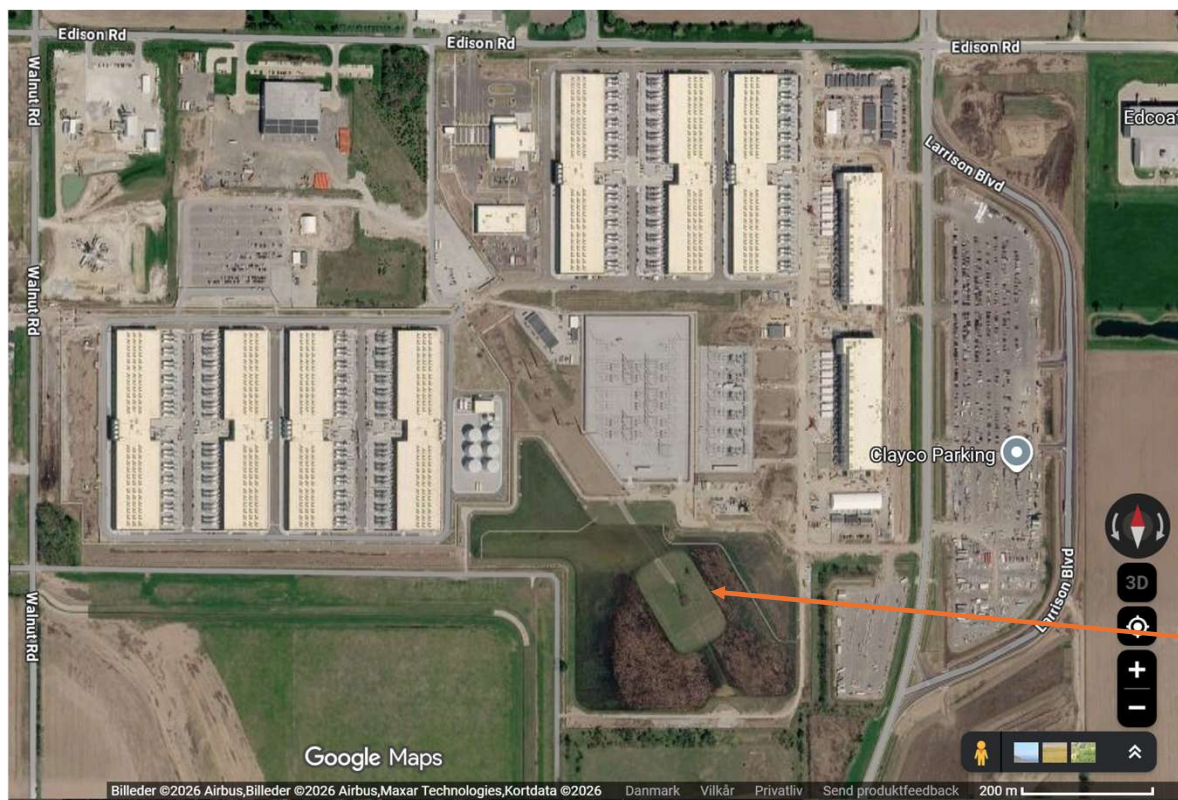
Bil

Køl

Anthropic Claude (Amazon AWS)
"AWS Project Rainier" i Indiana
Strømforbrug 2200 MW



Site 1 af 2



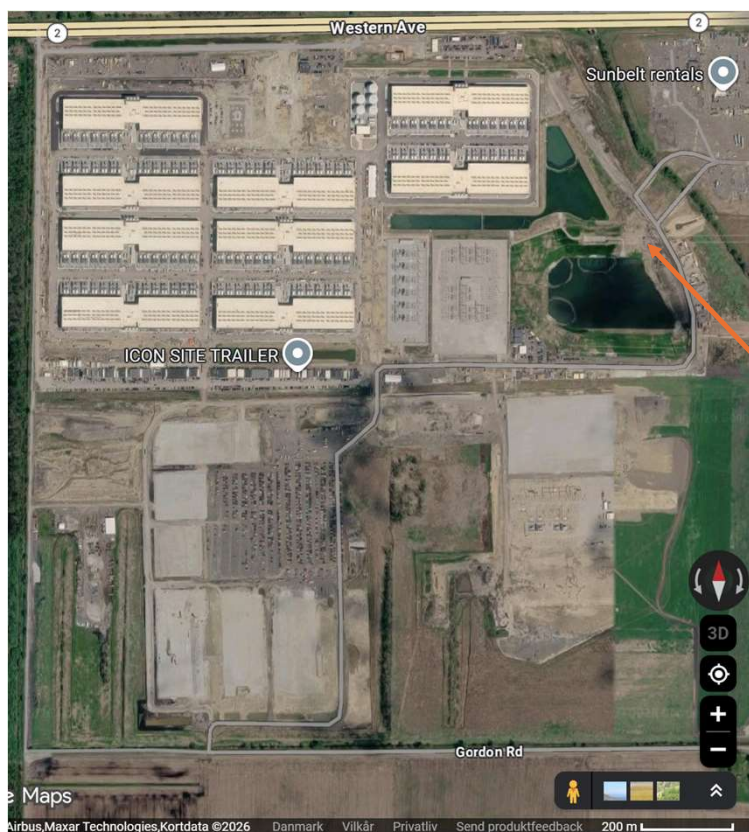
345 kV
Højspænding
ind i midten



Anthropic Claude (Amazon AWS)
"AWS Project Rainier" i Indiana
Strømforbrug 2200 MW



Site 2 af 2



345 kV
Højspænding
ind i midten



Grok – SpaceXAI

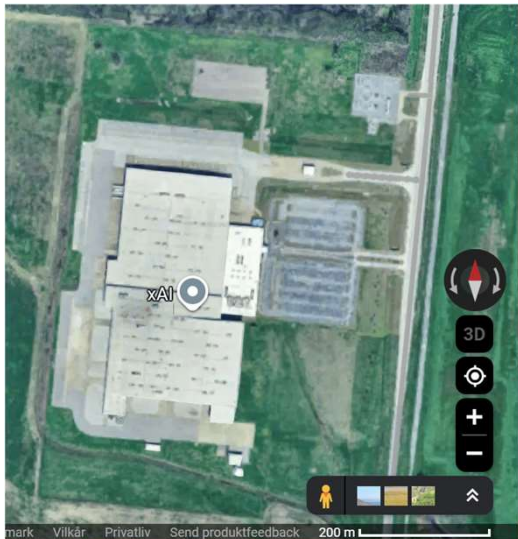
SPACEX



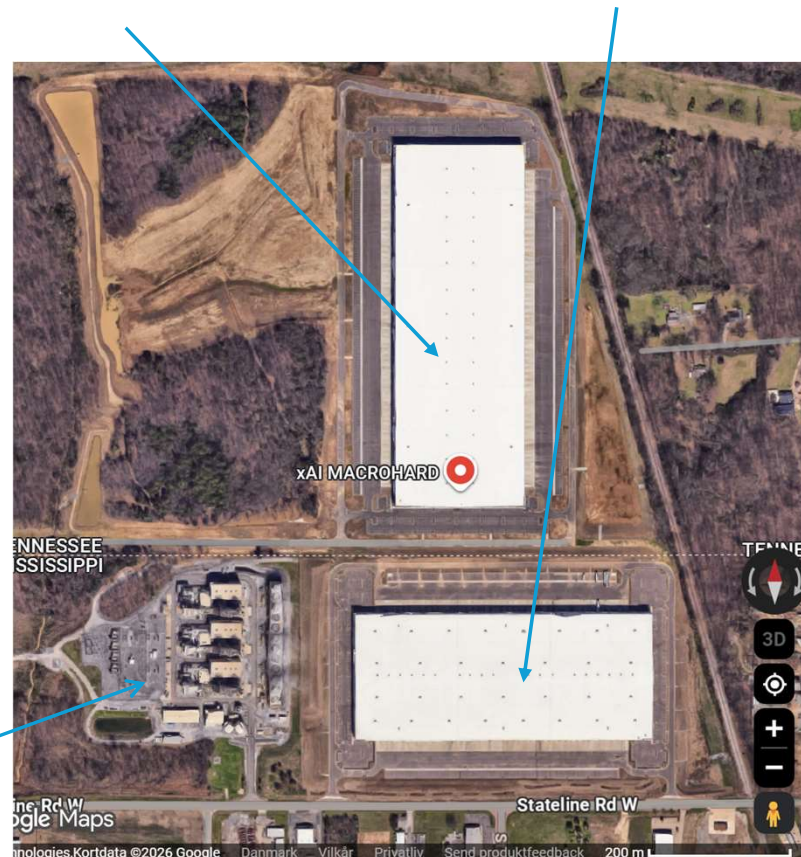
Colossus 1 - 450 MW

Colossus 2 – 1500 MW
("Macrohard")

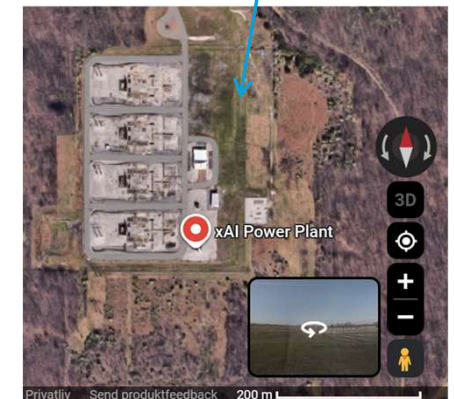
Colossus 3 – 1900 MW
("Macroharder")



Gammelt kraftværk til
469.000 husstande
802 MW



Nyt dedikeret kraftværk
1.200 MW



Frankrig booker 5000 MW til AI datacentre



Masa, Macron og Olivier Blum (CEO, Schneider Electric) underskriver kontrakten.

- Frankrigs eksisterende atomkraftværker skal levere strømmen.
- Budget: 75 milliarder euro

Områder:

1. Loon-Plage – Port of Dunkirk
2. Bosquel (Somme-departementet)
3. Bouchain (nær Valenciennes / Cambrai)

Mistral og Nvidia bygger AI centre sammen



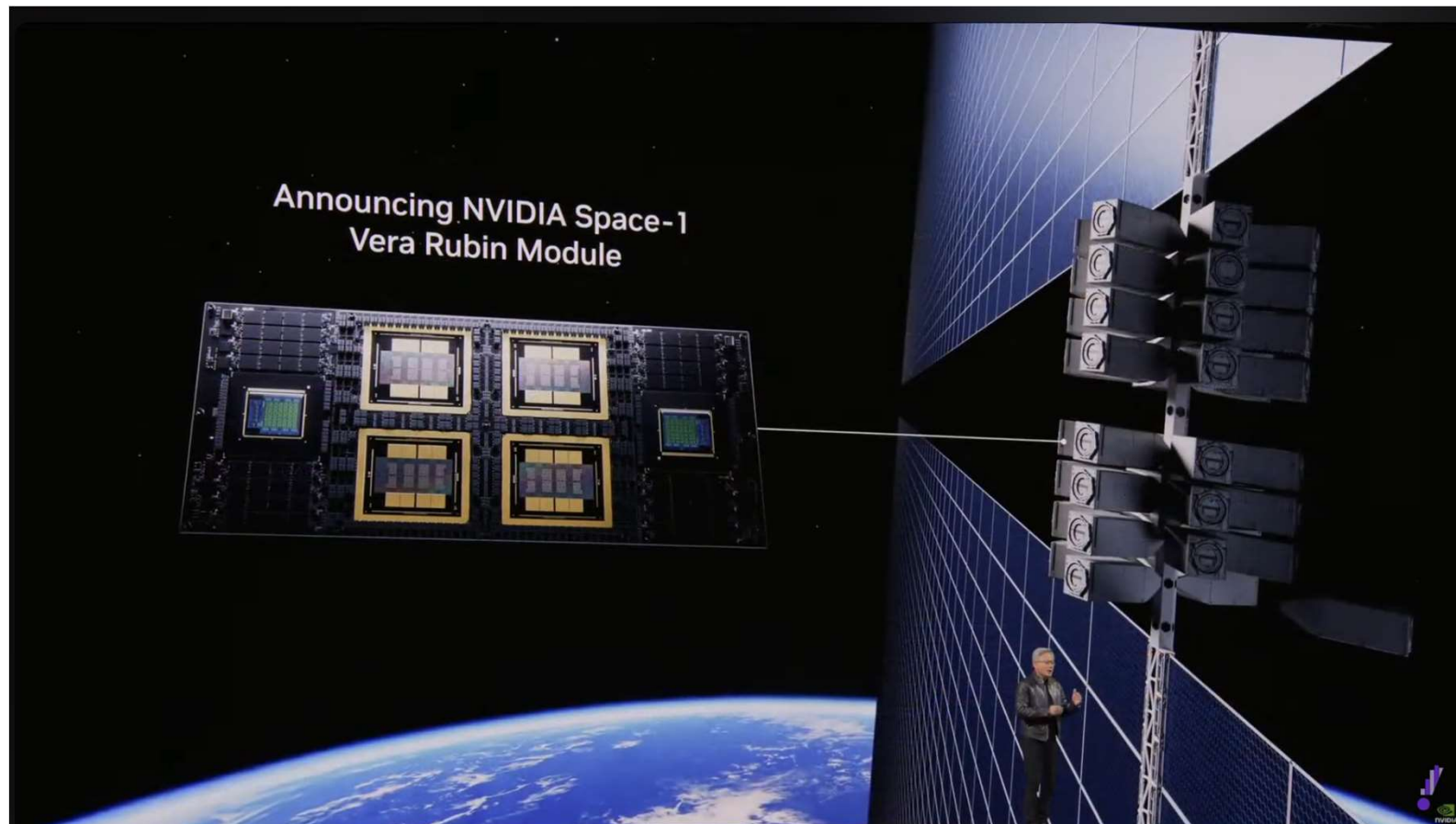
Jo mere strøm du bruger på dine AI-beregninger,
Jo bedre bliver svaret

Hvor er der mere og billigere strøm?

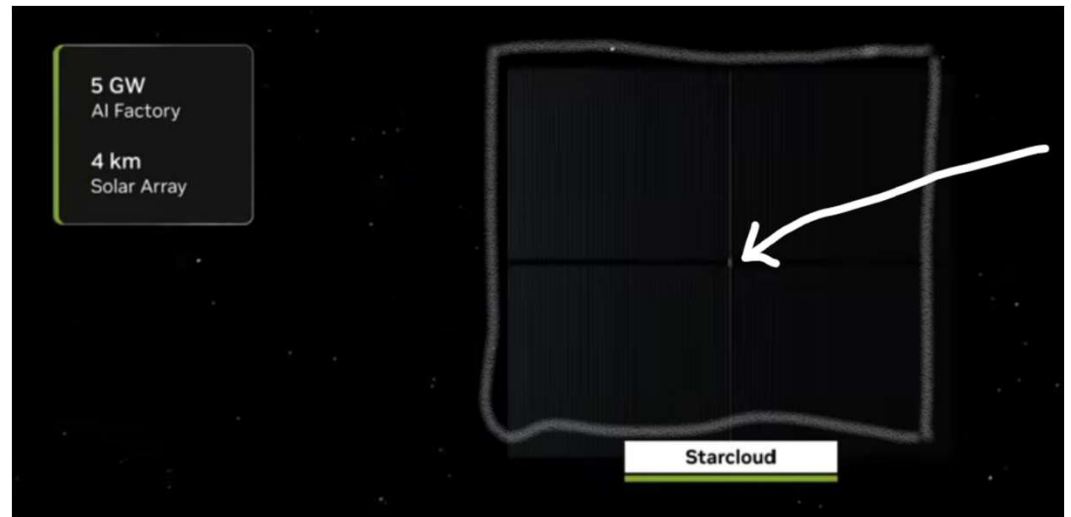
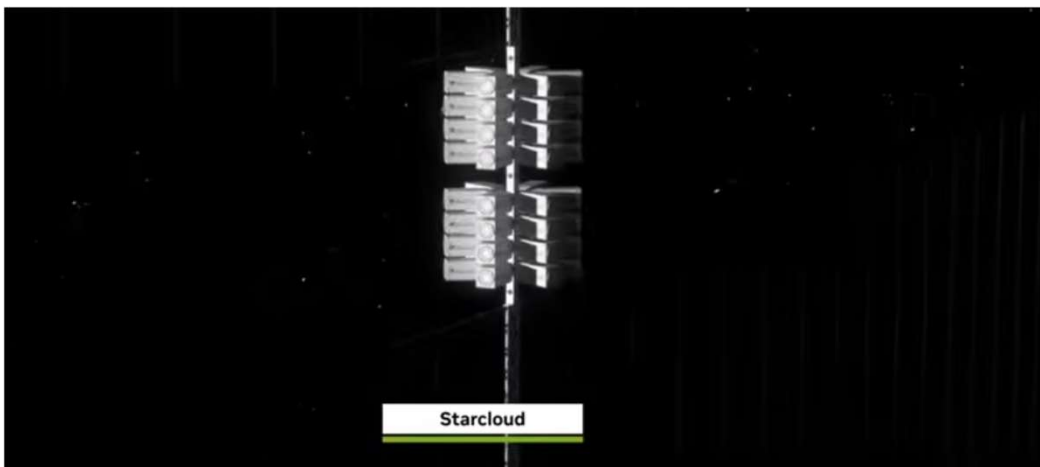
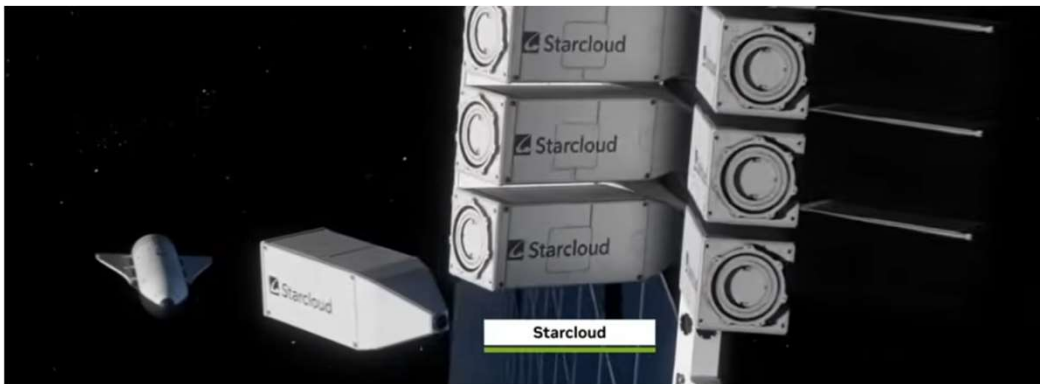
Solceller i rummet

Nvidia har en ny chipset til brug i rummet

Marts 2026 (GTC - Graphics Processing Unit Technology Conference)



Nvidia Starcloud



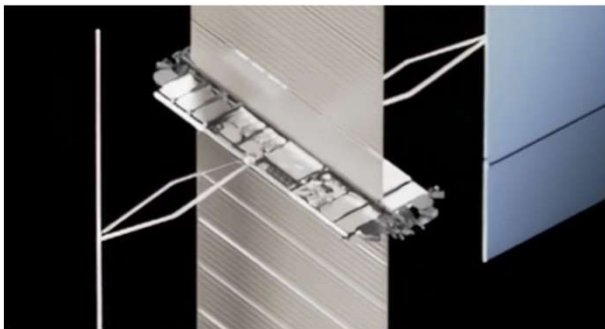
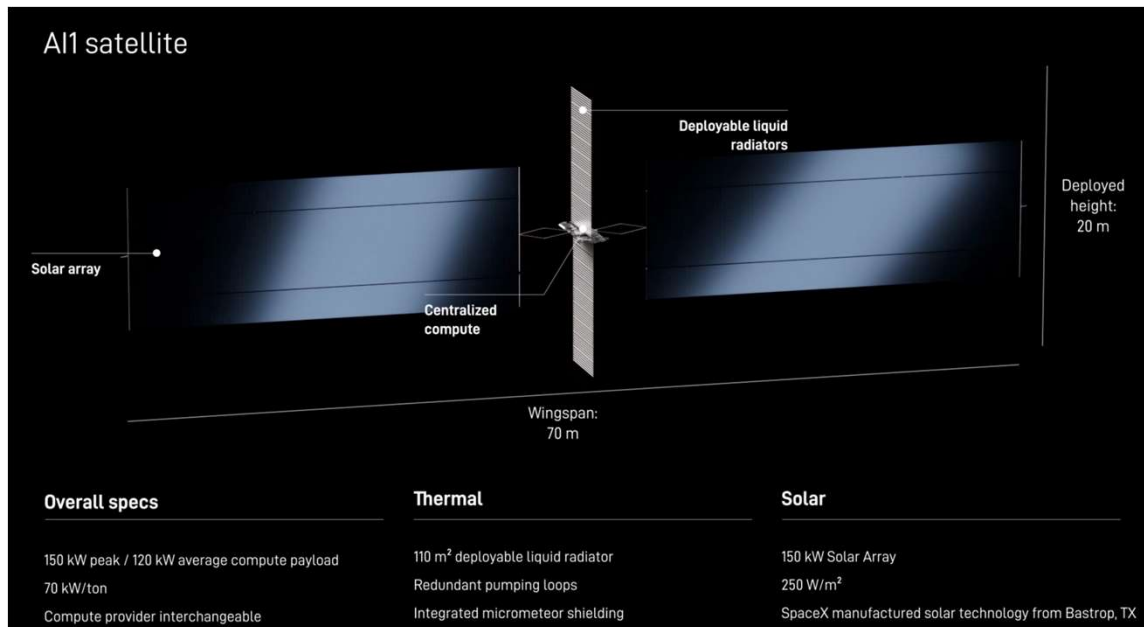
SpaceXAI vil lave satellit konstellation af individuelle AI datacenter satellitter

13. Oktober 2026



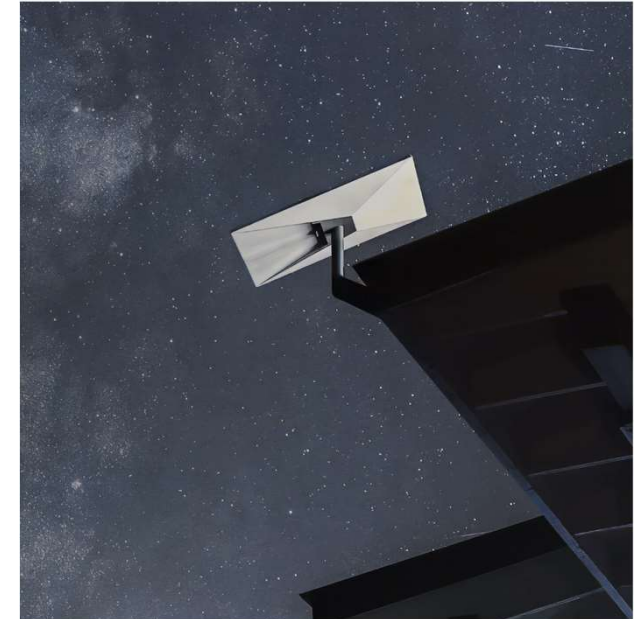
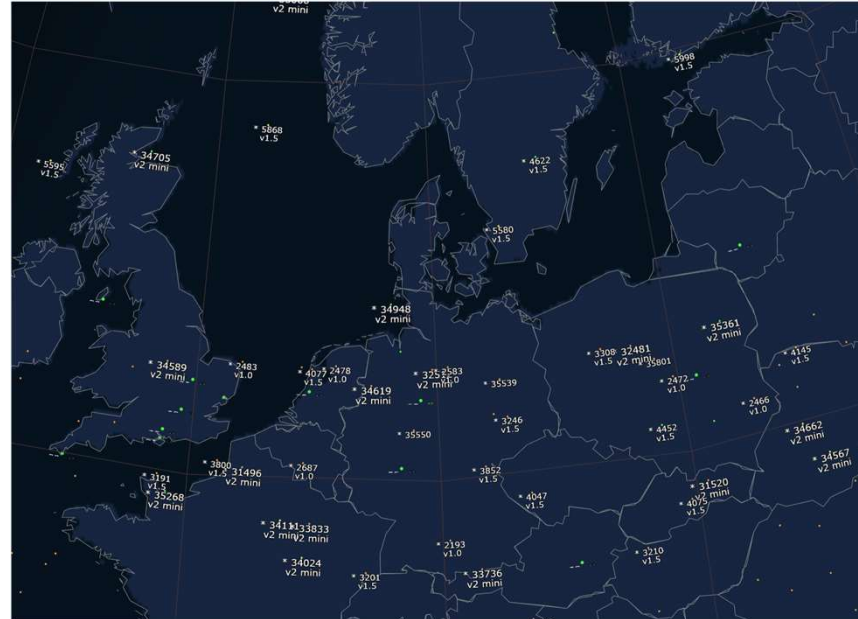
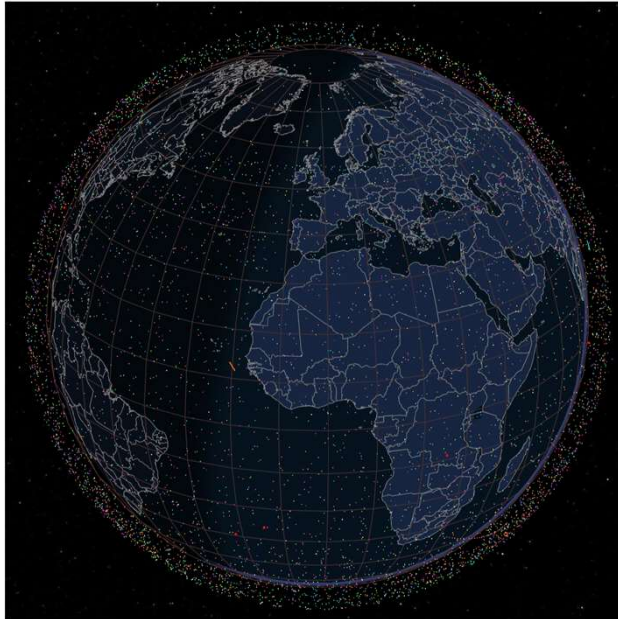
SpaceX har anmodet FCC om at opsende 1.000.000 satellitter til AI datacentre "Starmind". Starship raketten kan opsende 150 tons per tur, og kan lande både Booster og skibet, og flyve igen, efter der er blevet påfyldt brændstof. Cyklustid: 60 minutter. Opsender 40 til 60 satellitter af gangen

SpaceX AI – Grok – AI1 satellitten



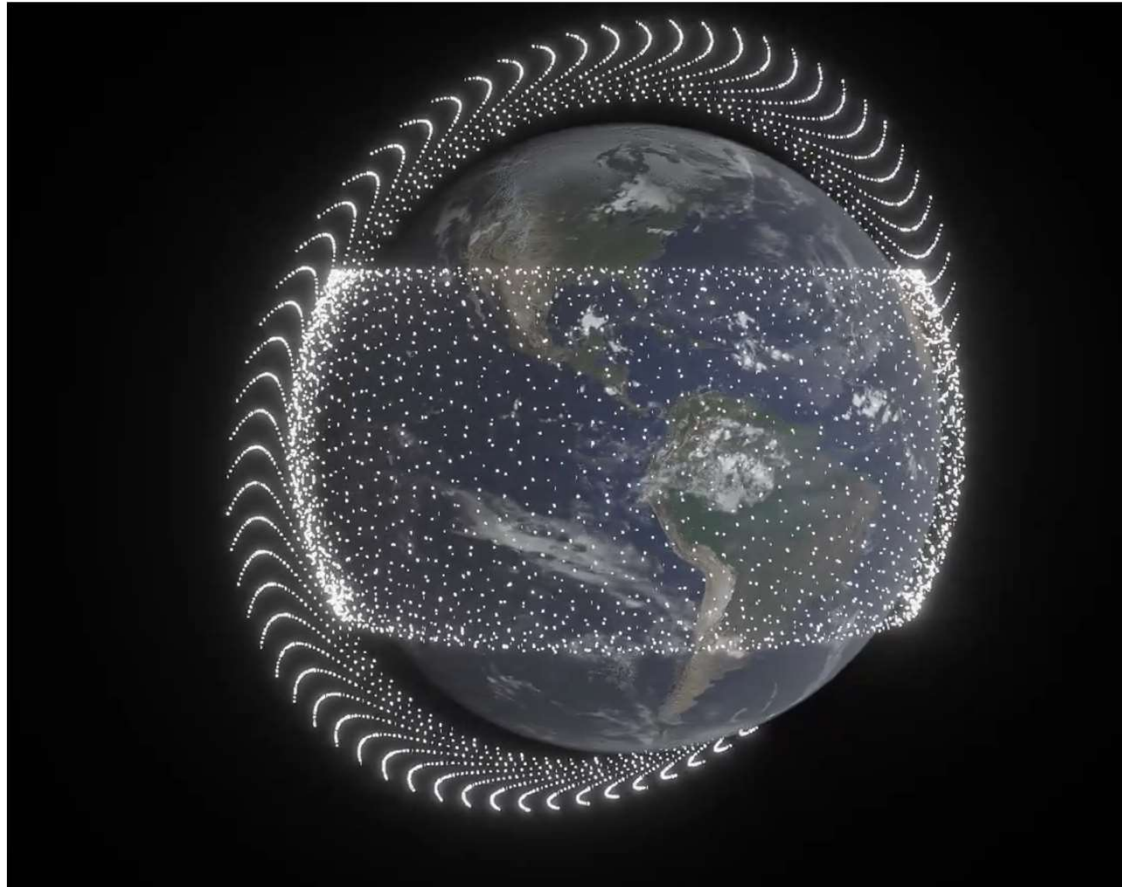
1 Rack = 1satelit

Eksisterende Starlink konstellation



Distribution (10999 satellites)

Ny kommende Grok konstellation bygget ind i Starlink



Altid i sollys

Test opsendinger af store satelliter fra SpaceXAI

24. Juli 2026



9 meter bred, 124 meter høj

Test opsendinger af store satelliter fra SpaceXAI

24. Juli 2026



24. Juli 2026

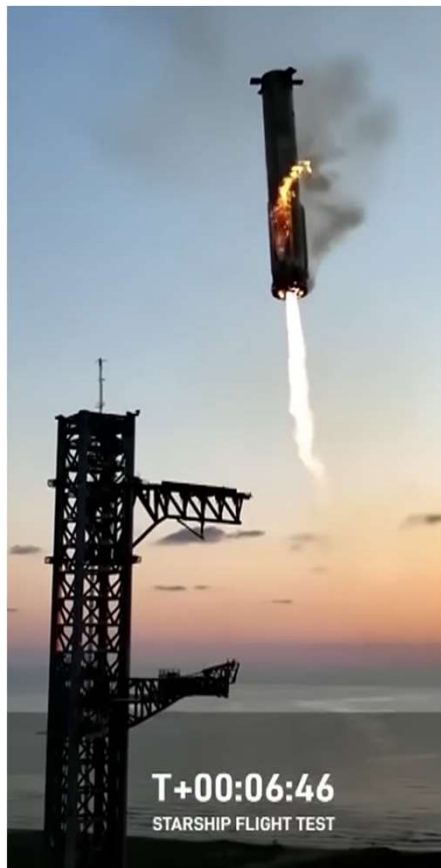


13. Oktober 2026



Test opsendinger af store satelliter fra SpaceXAI

13. Oktober 2026



13. Oktober 2026

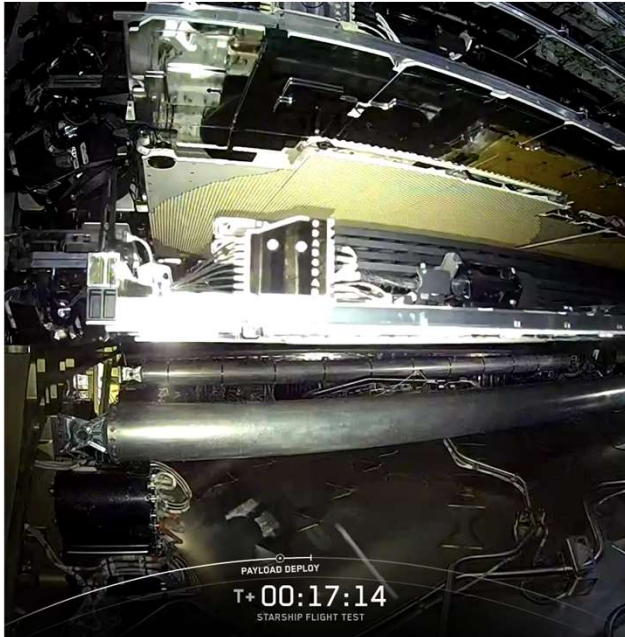


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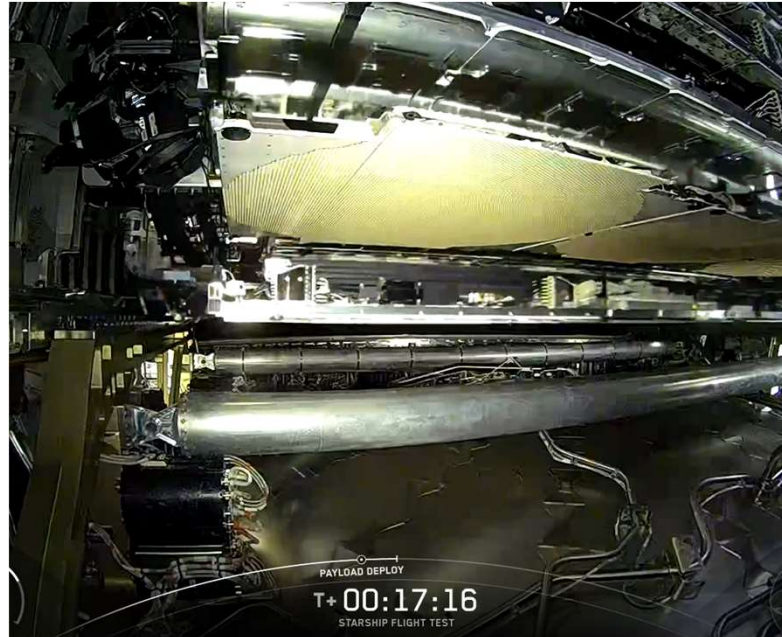


Test opsendinger af store satelliter fra SpaceXAI

24. Juli 2026



24. Juli 2026

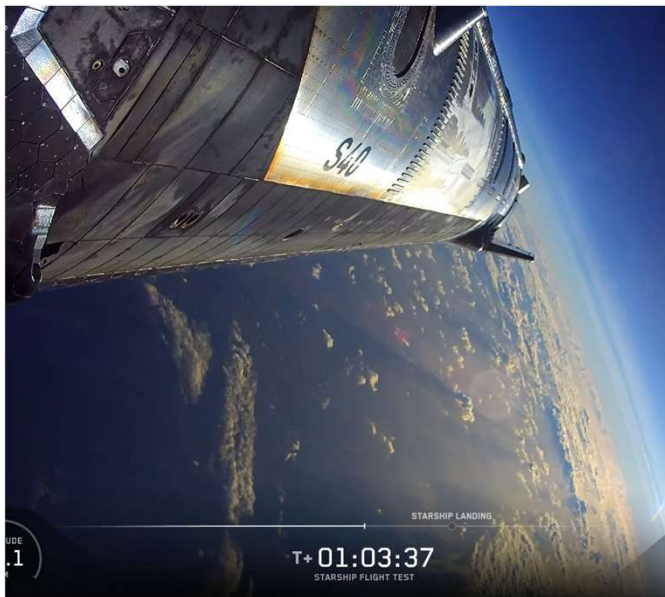


24. Juli 2026



Test opsendinger af store sateliter fra SpaceXAI

24. Juli 2026



24. Juli 2026



Test opsendinger af store satelliter fra SpaceXAI

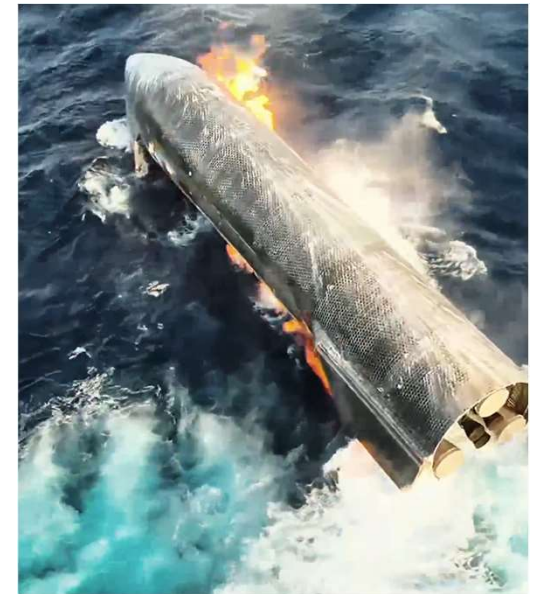
24. Juli 2026



24. Juli 2026



24. Juli 2026



Så hvad skal vi bruge alt det kunstig intelligens til?

- 1 - Hjælpe os med at lave teknisk kompliceret digitalt arbejde.
- 2 - Aflaste os i digitale rutine opgaver.
- 3 - Forklare os om ting, som vi gerne vil blive klogere på
- 4 - Hjælpe os med skriveopgaver (hurtigere, bedre, forskellige sprog)
- 5 - Fungere som vores personlige digitale assistent, der kan udfører handlinger på vores PC
- 6 - Læse dokumenter lynhurtigt og give resumé, samt finde supplerende information
- 7 - Fungere som sparringspartner om, hvordan vi bedre organisere og løser vores arbejdsopgaver