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TIPS DKK NFT1



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# TIPS DKK Non-functional test – first session (NFT1)

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- Test cases and documentation
- Timestamps and assessment criteria
- Timeline for test
- Test results

# DKK NFT1 test cases and documentation

During the testing Nationalbanken required following documentation for all performance test cases

- Statistics on all payments sent and received (settled, rejected, time-outs), i.e. number of payments sent during the given performance test case (PPS and total payments)
- Minimum value: the shortest latency for one payment during the test run
- Value of 50<sup>th</sup> percentile: the value of the latency that is shorter or equal to the latency of 50% of payment;
- Value of 75<sup>th</sup> percentile: the value of the latency that is shorter or equal to the latency of 75% of payments;
- Value of 95<sup>th</sup> percentile: the value of the latency that is shorter or equal to the latency of 95% of payments;
- Value of 99<sup>th</sup> percentile: the value of the latency that is shorter or equal to the latency of 99% of payments;
- Maximum value: the longest latency for one payment during the test run.

Test case
Smoke test
Average load outbound 2 -4 hours (100 % avg PPS)
Average load inbound 2 -4 hours (100 % avg PPS)
High avg load outbound 1 hour (200 % avg PPS)
High avg load inbound 1 hour (200 % avg PPS)
Half peak load outbound 10 minutes (400 % avg - 50 % peak PPS)
Half peak load inbound 10 minutes (400 % avg - 50 % peak PPS)
Sub peak load outbound 5 minutes (66,7% peak PPS)
Sub peak load inbound 5 minutes (66,7% peak PPS)
Peak load outbound 1 minute (100% peak PPS)
Peak load inbound 1 minute (100% peak PPS)

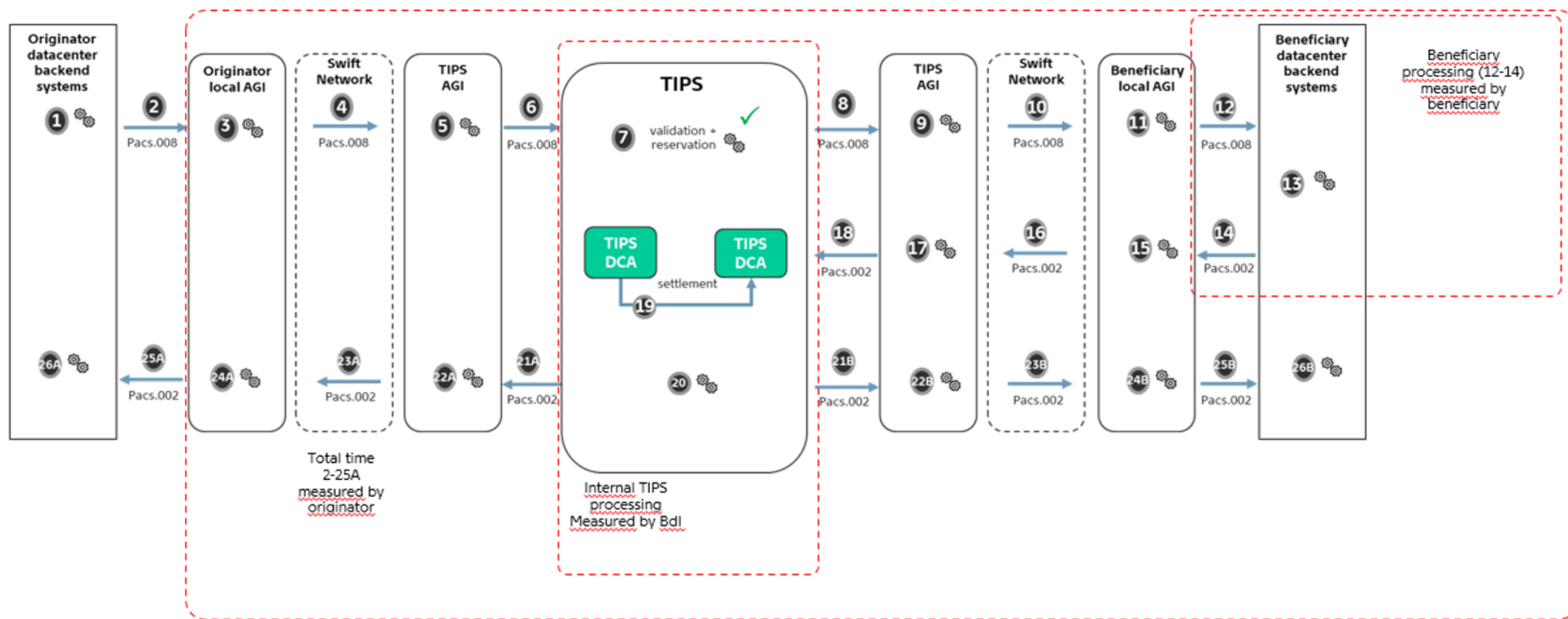
Average Business day 100% average PPS			
	Beneficiary Latency	Settled	Rejected/ expired
Min værdi			
50 percentil			
75 percentil			
95 percentil			
99 percentil			
Max værdi			

Average Business day 100% average PPS			
	Overall latency	Settled	Rejected/ expired
Min værdi			
50 percentil			
75 percentil			
95 percentil			
99 percentil			
Max værdi			

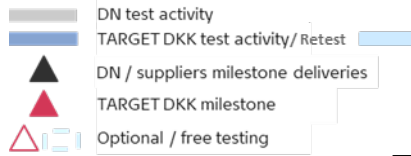
# DKK NFT1 timestamps and assessment criteria


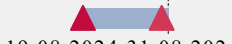




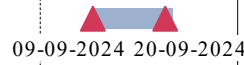


The test cases are evaluated for each participant based on 4 assessment criteria

1. Number of executed payments and rejections
2. Overall latency
3. Beneficiary latency
4. TIPS Latency



# D-UT SCHEDULE – TIPS / Instant NFT



Test activities & milestones	2024								2025	
	Q2		Q3			Q4			Q1	
	maj	jun	jul	aug	sep	okt	nov	dec	jan	feb
<b>Milestone – example</b>										
Examples – timestamps <i>Elaboration in slide 8</i>	 20-05-2024									
<b>Milestone - Demo</b>										
Demo test NFT statistics <i>Elaboration in slide 8</i>				 19-08-2024 31-08-2024						
<b>Non-Functional test</b>										
Free testing ( <i>restricted load</i> )	 04-05-2024 - 01-09-2024			 23-09-2024 - 06-12-2024			 23-12-2024 - 09-02-2025			
Free testing ( <i>Full load</i> )				 02-09-2024 Free testing 09-09-2024						
Period 1				 09-09-2024 20-09-2024						
Period 2							 09-12-2024 20-12-2024			
Period 3 (Back up)									 10-02-2025 21-02-2025	

# NFT1 – SEPTEMBER PLAN

Dato	2.-8. Sep.	9. Sep.	10. Sep.	11. Sep.	12. Sep.	13. Sep.	14. Sep.	15. Sep.	16. Sep.	17. Sep.	18. Sep.	19. Sep.	20. Sep.
<b>Test Kick-off</b>	Kick-off meeting	Meeting: 08:00-08:30	Meeting: 08:00-08:30	Meeting: 08:00-08:30	Meeting: 08:00-08:30	Meeting: 08:00-08:30							
<b>Test slot 1</b>	Free testing	Avg. load 2-4 hours (In-/Outbound) 100% Avg. PPS	High Avg. Load 1 hour (In-/Outbound) 200% Avg. PPS	Half Peak Load 10 minutes (In-/Outbound) 400% Avg. – 50% peak PPS	Sub-Peak Load 5 minutes (In-/Outbound) 66,7% peak PPS	Peak Load 1 minute (In-/Outbound) 100% peak PPS			Retest	Retest	Retest	Retest	Retest
<b>Test slot 2</b>	Free testing	Avg. load 2-4 hours (In-/Outbound) 100% Avg. PPS	High Avg. Load 1 hour (In-/Outbound) 200% Avg. PPS	Half Peak Load 10 minutes (In-/Outbound) 400% Avg. – 50% peak PPS	Sub-Peak Load 5 minutes (In-/Outbound) 66,7% peak PPS	Peak Load 1 minute (In-/Outbound) 100% peak PPS			Retest	Retest	Retest	Retest	Retest
<b>Results</b>		Meeting: 17:00-17:30	Meeting: 17:00-17:30	Meeting: 17:00-17:30	Meeting: 17:00-17:30	Meeting: 17:00-17:30							



# DKK NFT1 Test Results

Overall, the NTF1 test is considered as successful. As it was the first NTF test, it required data centers to ensure that their systems and capacities were properly aligned.

The results are summarized below:

- 24/50 test cases are passed in terms of all assessment criteria
- 23/50 test cases are preliminary passed, meaning approved for NFT1, but needs retesting in NFT2
- 1/50 test cases do not pass any exit criteria and are thus not passed for NFT1 and needs retesting in NFT2
- 2/50 test cases were not tested during NFT1 and thus needs to be tested during NFT2
- During NFT1 the TIPS Settlement engine performed above expectations with an average settlement latency during both weeks across all participants below 60 milliseconds in the 95th percentile.
- Further a combined test with GetSwish was executed during NFT1, where neither SEK or DKK experienced time-out issues due to TIPS and the TIPS latency did not reach above 250 milliseconds.

It is still important to maintain the NTF2 schedule in December to ensure the effective and stable execution of TIPS DKK payments.

	TIPS Latency Avg				
	p99	p95	p75	p50	
NDEADKKKXXX	0.108	0.066	0.051	0.046	
SYBKDK22XXX	0.108	0.062	0.049	0.045	
VRSPDK22XXX	0.090	0.059	0.051	0.046	
DABADKKKTIP	0.094	0.060	0.050	0.045	
VEHODK22XXX	0.075	0.057	0.050	0.046	
JYBADKKKXXX	0.058	0.058	0.056	0.054	
NYKBDKKKXXX	0.074	0.056	0.049	0.045	