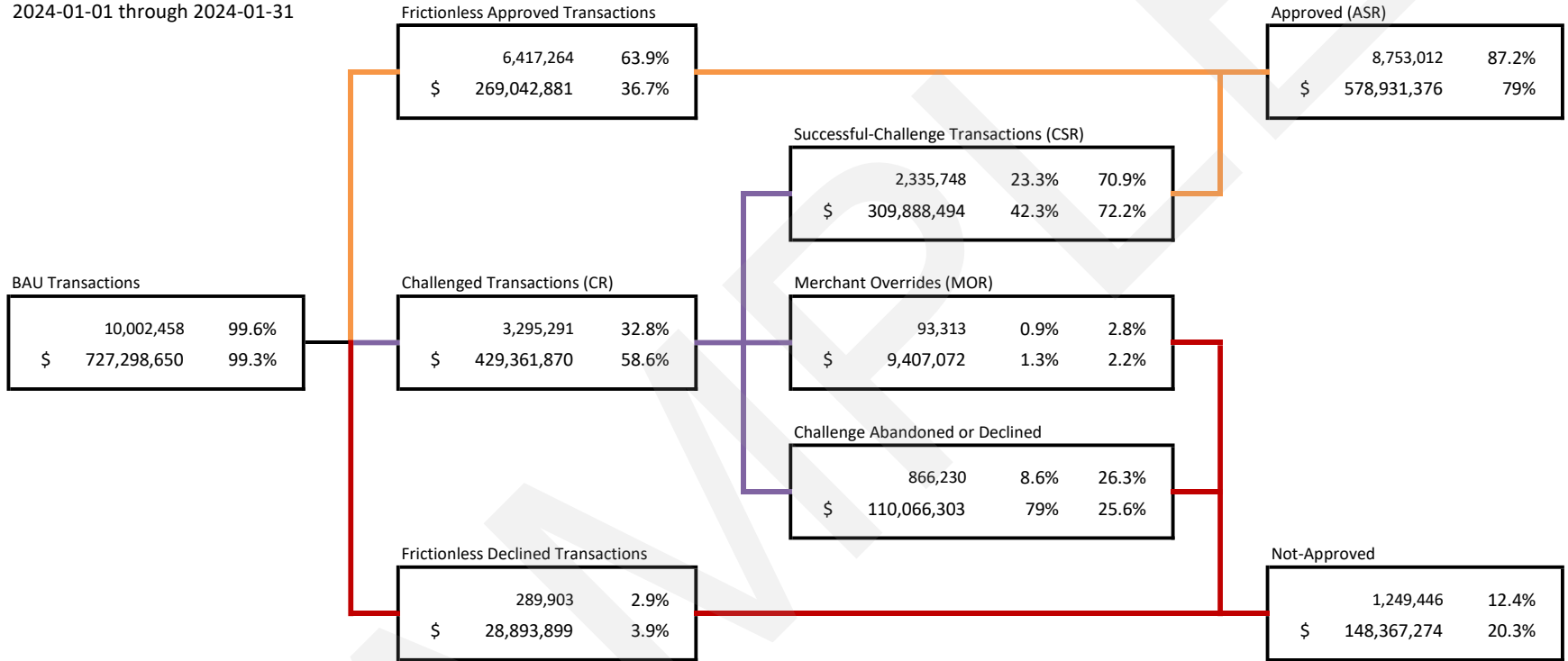


Transaction Flow

Scope: All 3DS transactions from merchant ACME
 Period: 2024-01-01 through 2024-01-31



Processing Errors (Non-BAU Transactions)

Volume: 38,225 0.4%
 Amount: \$ 5,334,989 0.7%

Scope: EMV 3DS authentication requests from merchant ACME
 Period: 2024-01-01 through 2024-01-31
 EMV 3DS2 Transaction Volume: 10,002,458
 EMV 3DS2 Transaction Value (USD): \$ 727,298,650

	ACME		Peer US Merchant		Transaction Rate	Transaction Rate	Transaction Rate	Transaction Rate
	Value (USD)	Transaction Rate	Transaction Rate	Transaction Rate				
App	\$ 42,837,890	5.9%		3.1%				
Browser	\$ 684,460,759	94.1%		96.9%				
Authentication Success Rate	App	\$ 34,099,058	83.0%	80.2%				
	Browser	\$ 544,832,318	74.3%	87.7%				
	Overall	\$ 578,931,376	79.0%	87.5%				
Authentication Declines	App	\$ 8,738,832	21.3%	19.3%				
	Browser	\$ 139,628,442	19.1%	11.9%				
	Overall	\$ 148,367,274	20.3%	12.1%				
Overall Error	App	\$ 314,231	0.7%	0.5%				
	Browser	\$ 5,020,758	0.7%	0.4%				
	Overall	\$ 5,334,989	0.7%	0.4%				
Approvals (No-Challenge)	App	\$ 15,846,626	38.5%	20.9%				
	Browser	\$ 253,196,256	34.5%	21.9%				
	Overall	\$ 269,042,881	36.7%	21.9%				
Challenge Rate	App	\$ 25,289,414	61.5%	76.7%				
	Browser	\$ 404,072,456	55.1%	75.9%				
	Overall	\$ 429,361,870	58.6%	75.9%				
Declines (No-Challenge)	App	\$ 1,701,851	4.1%	1.4%				
	Browser	\$ 27,192,048	3.7%	1.6%				
	Overall	\$ 28,893,899	3.9%	1.6%				
AREQ Errors	App	\$ 145,649	0.4%	1.0%				
	Browser	\$ 2,327,167	0.3%	0.6%				
	Overall	\$ 2,472,815	0.3%	0.6%				
Challenge Success Rate	App	\$ 18,252,432	75.8%	77.4%				
	Browser	\$ 291,636,062	67.8%	86.7%				
	Overall	\$ 309,888,494	72.2%	86.4%				
Challenge Failures	App	\$ 7,036,982	29.2%	22.6%				
	Browser	\$ 112,436,394	26.2%	13.3%				
	Overall	\$ 119,473,376	27.8%	13.6%				
Challenge Failed - User Cancelations	App	\$ 3,889,743	16.1%	39.4%				
	Browser	\$ 62,150,039	14.5%	15.3%				
	Overall	\$ 66,039,782	15.4%	16.6%				
Challenge Failed - Timeouts	App	\$ 2,593,162	10.8%	28.6%				
	Browser	\$ 41,433,359	9.6%	37.8%				
	Overall	\$ 44,026,521	10.3%	37.4%				
Challenge Failed - Merchant Overrides	App	\$ 554,077	2.3%	1.1%				
	Browser	\$ 8,852,996	2.1%	17.3%				
	Overall	\$ 9,407,072	2.2%	16.4%				
Challenge Failed - Rejections	App	\$ 9,085	0.0%	25.3%				
	Browser	\$ 145,153	0.0%	28.1%				
	Overall	\$ 154,238	0.0%	27.9%				
Challenge Failed - Errors	App	\$ 3,443	0.0%	5.5%				
	Browser	\$ 55,019	0.0%	1.5%				
	Overall	\$ 58,462	0.0%	1.7%				

Scope: EMV 3DS authentication requests from merchant ACME
 Period: 2024-01-01 through 2024-01-31
 EMV 3DS2 Transaction Volume: 10,002,458
 EMV 3DS2 Transaction Value (USD): \$ 727,298,650

Contrast against 5 Anonymous Peer Merchants - 2.x transactions only

Metric	ACME	Peer Merchant	Merchant
Median Model Score	289	196	
3DS Method Call Success Rate (%)	48	65.74	
App Rate (%)	6	8.21	
Browser Trx Rate (%)	84	93.75	
Authentication Success Rate (%)	87	92.41	
Challenge Rate (%)	33	21.33	
Challenge Success Rate (%)	46	75.89	

Top 20 Issuers by Volume

Issuer	Issuer Country	EMV 3DS2 Volume	App Rate (%)	Browser Transaction Rate (%)	Authentication Success Rate (%)	Authentication Decline Rate (%)	Overall Error Rate (%)	Approval (No-Challenge) Rate (%)	Challenge Rate (%)	Decline (No-Challenge) Rate (%)	AREQ Error Rate (%)	Challenge Success Rate (%)	Challenge Failure Rate (%)	Challenge Failed - User Cancellation Rate (%)	Challenge Failed - Timeout Rate (%)	Challenge Failed - Merchant Overrides (%)	Challenge Failed - Rejection Rate (%)	Challenge Failed - Error Rate (%)
US Bank1	USA	1,700,418	43.60	56.40	95.54	4.34	0.12	75.70	24.30	0.00	0.00	81.64	18.36	24.03	68.99	3.76	1.71	1.51
US Bank2	USA	1,500,369	32.38	67.62	95.56	4.19	0.25	60.57	39.41	0.02	0.00	88.78	11.22	25.16	36.79	2.91	32.79	2.36
US Bank3	USA	1,200,270	42.69	57.31	92.84	7.89	0.07	83.88	10.55	5.57	0.00	77.35	22.65	38.38	47.42	1.06	13.03	0.11
UK Bank1	UK	1,000,246	42.48	57.52	91.64	8.35	0.01	66.53	31.11	2.37	0.00	80.74	19.26	46.52	37.46	2.20	13.61	0.20
UK Bank2	UK	900,221	59.10	40.90	99.49	0.49	0.01	96.11	3.89	0.00	0.00	87.06	12.94	26.96	47.83	16.52	8.70	0.00
UK Bank3	UK	800,197	41.94	58.06	96.35	3.65	0.00	86.35	0.00	3.65	0.00	81.00	0.00	0.00	0.00	0.00	0.00	0.00
French Bank1	FR	700,172	34.55	65.45	86.48	13.48	0.04	42.60	53.87	3.53	0.00	81.45	18.55	29.11	39.48	2.21	37.68	0.51
French Bank2	FR	600,147	49.54	50.46	93.59	6.35	0.05	53.03	45.89	1.07	0.00	88.38	11.62	26.96	46.59	5.46	20.48	0.51
French Bank3	FR	500,123	44.38	55.62	98.75	1.25	0.00	98.75	0.00	1.25	0.00	91.00	0.00	0.00	0.00	0.00	0.00	0.00
Mexico Bank1	MEX	100,025	37.12	62.88	91.30	8.70	0.00	72.87	26.18	0.85	0.00	70.40	29.60	12.41	82.40	0.68	3.86	0.55
Mexico Bank2	MEX	100,025	51.12	48.88	89.05	10.91	0.04	1.77	97.28	0.95	0.00	89.72	10.28	36.34	46.89	8.89	7.62	0.25
Mexico Bank3	MEX	100,025	46.78	53.22	93.93	6.07	0.00	84.70	13.84	1.46	0.00	66.70	33.30	11.54	81.36	2.96	3.85	0.30
Irish Bank1	IRL	100,025	56.76	43.24	38.09	61.91	0.00	30.22	9.25	60.52	0.00	84.99	15.01	24.09	39.13	4.35	28.26	2.17
Irish Bank2	IRL	100,025	32.27	67.73	87.68	12.32	0.00	58.78	40.28	0.94	0.00	71.75	28.25	10.21	20.27	1.07	68.45	0.30
Irish Bank3	IRL	100,025	18.76	81.24	39.10	60.87	0.03	18.41	79.81	1.77	0.00	25.92	74.08	2.73	2.51	0.31	84.32	0.13
Bank X	GER	100,025	35.16	64.84	100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bank Y	GER	100,025	28.99	71.01	89.68	10.30	0.07	70.81	28.69	0.49	0.00	65.75	34.25	47.99	31.54	1.68	18.79	0.00
Bank Z	CAN	100,025	26.35	73.65	77.52	22.48	0.00	42.84	53.69	3.47	0.00	64.59	35.41	15.13	18.78	1.39	64.52	0.17
Bank A	CAN	100,025	27.57	72.43	93.90	6.03	0.07	57.02	40.96	2.02	0.00	90.05	9.95	32.77	45.38	3.36	17.65	0.84
Bank B	GER	100,025	44.44	55.56	97.28	2.68	0.04	76.99	23.94	0.47	0.00	80.21	9.79	38.71	58.06	1.63	1.61	0.00
Other	N/A	100,025	39.35	60.65	90.68	9.25	0.07	65.89	29.90	4.21	0.00	82.93	17.07	33.16	36.33	4.52	25.17	0.81

Top 20 Issuer Countries by Volume

Issuer Country	EMV 3DS2 Volume	App Rate (%)	Browser Transaction Rate (%)	Authentication Success Rate (%)	Authentication Decline Rate (%)	Overall Error Rate (%)	Approval (No-Challenge) Rate (%)	Challenge Rate (%)	Decline (No-Challenge) Rate (%)	AREQ Error Rate (%)	Challenge Success Rate (%)	Challenge Failure Rate (%)	Challenge Failed - User Cancellation Rate (%)	Challenge Failed - Timeout Rate (%)	Challenge Failed - Merchant Overrides (%)	Challenge Failed - Rejection Rate (%)	Challenge Failed - Error Rate (%)	
United States	5,702,892	41.82	58.18	91.96	9.19	7.97	0.07	70.72	26.01	3.28	0.00	81.68	18.32	28.23	39.17	2.56	29.37	0.67
United Kingdom	2,308,075	21.10	78.90	88.24	11.67	0.09	0.00	27.44	69.03	3.53	0.00	83.07	11.93	11.52	37.43	20.91	29.75	0.38
Italy	953,110	25.24	74.76	91.72	8.15	0.13	0.00	60.05	36.46	3.49	0.00	86.87	13.13	33.20	46.72	3.86	15.44	0.77
Germany	668,537	17.64	82.36	78.76	21.24	0.00	0.00	16.26	74.63	9.11	0.00	83.75	16.25	6.59	23.08	2.20	68.13	0.00
Spain	374,029	21.68	78.32	84.22	15.68	0.10	0.00	28.27	68.44	3.29	0.00	81.75	18.25	51.55	35.66	1.10	9.69	0.00
Netherlands	21,841	28.75	71.25	84.67	15.58	0.00	0.00	51.32	45.59	3.09	0.00	70.61	27.39	27.98	36.70	5.09	29.82	0.46
Sweden	8,705	12.68	87.32	86.85	14.15	0.00	0.00	0.86	99.14	0.00	0.00	85.73	14.27	25.11	31.17	22.08	21.21	0.43
Poland	3,493	14.51	85.49	75.11	24.89	0.00	0.00	18.43	81.16	0.21	0.00	69.66	30.34	19.31	25.75	2.15	17.77	15.02
DK	693	22.51	77.49	82.40	14.86	2.24	0.00	9.67	89.18	1.15	0.00	81.50	18.49	23.68	34.21	1.76	38.60	1.74
PAN	604	30.63	69.37	98.34	1.66	0.00	0.00	84.27	15.40	0.33	0.00	91.40	8.60	37.50	50.00	12.50	0.00	0.00

Challenge Rate by Issuer (2 x only)

Total Txn Volume	10K	7K	7K	14K	16K	16K	16K	13K	13K	15K	19K	20K	20K	20K	15K	14K	19K	19K	20K	19K	18K	14K	13K	17K	19K	18K	18K	17K	13K	14K	17K
Median Frd Score	246	254	243	250	251	250	257	254	254	249	242	250	256	256	248	243	251	253	253	251	249	254	243	247	254	255	250	250	247	240	241
3DS MC Success Rate (%)	40%	41%	36%	43%	47%	47%	47%	45%	49%	46%	50%	51%	53%	51%	43%	42%	52%	53%	53%	50%	49%	44%	41%	47%	51%	51%	48%	51%	45%	41%	51%
Issuer 1	23%	22%	20%	22%	22%	23%	25%	23%	23%	24%	22%	24%	25%	22%	21%	23%	28%	27%	27%	25%	24%	27%	22%	27%	26%	28%	25%	26%	25%	24%	26%
Issuer 2	36%	33%	34%	37%	36%	42%	38%	39%	35%	37%	36%	39%	38%	35%	36%	38%	41%	43%	42%	40%	38%	42%	39%	44%	43%	45%	41%	40%	42%	41%	41%
Issuer 3	17%	13%	16%	12%	12%	11%	12%	11%	12%	13%	10%	10%	8%	11%	12%	14%	9%	7%	9%	9%	11%	11%	11%	11%	9%	10%	9%	9%	9%	10%	8%
Issuer 4	30%	30%	27%	30%	32%	26%	30%	32%	31%	29%	30%	32%	33%	34%	30%	30%	31%	34%	36%	33%	35%	34%	29%	29%	32%	33%	29%	33%	29%	27%	29%
Issuer 5	6%	6%	3%	2%	5%	8%	6%	8%	6%	1%	5%	6%	5%	5%	4%	3%	3%	4%	4%	3%	4%	3%	2%	3%	4%	4%	4%	4%	4%	3%	3%
Issuer 6	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Issuer 7	53%	45%	56%	57%	53%	50%	54%	48%	53%	53%	48%	53%	54%	54%	52%	56%	54%	57%	55%	51%	54%	58%	55%	55%	58%	55%	58%	51%	53%	52%	60%
Issuer 8	40%	50%	43%	45%	50%	42%	44%	48%	45%	44%	43%	46%	48%	41%	48%	48%	48%	41%	42%	53%	48%	50%	46%	38%	46%	46%	40%	43%	52%	47%	50%
Issuer 9	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Issuer 10	26%	40%	37%	37%	28%	32%	30%	48%	40%	33%	21%	20%	23%	21%	33%	35%	18%	22%	24%	23%	23%	33%	47%	30%	21%	19%	27%	21%	31%	32%	16%
Issuer 11	98%	95%	98%	95%	96%	99%	97%	96%	98%	99%	100%	97%	97%	98%	100%	99%	97%	98%	96%	95%	99%	96%	98%	98%	97%	98%	97%	98%	97%	95%	95%
Issuer 12	18%	10%	10%	10%	10%	9%	16%	14%	17%	9%	20%	13%	12%	11%	17%	12%	20%	16%	15%	10%	15%	11%	13%	8%	17%	17%	18%	16%	15%	13%	11%
Issuer 13	10%	7%	5%	8%	12%	9%	6%	6%	5%	5%	9%	7%	14%	9%	10%	6%	12%	13%	10%	7%	10%	10%	8%	5%	15%	10%	12%	10%	12%	4%	16%
Issuer 14	35%	55%	38%	38%	44%	35%	38%	42%	41%	40%	33%	43%	28%	40%	33%	39%	52%	37%	42%	47%	35%	38%	38%	50%	40%	39%	39%	44%	41%	40%	
Issuer 15	70%	67%	55%	75%	87%	75%	81%	74%	79%	79%	82%	87%	82%	86%	72%	84%	87%	71%	83%	85%	80%	74%	78%	79%	79%	78%	79%	73%	70%	83%	83%
Issuer 16	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Issuer 17	27%	27%	38%	41%	30%	16%	25%	21%	32%	32%	21%	33%	33%	22%	26%	30%	24%	32%	26%	37%	27%	32%	28%	24%	28%	32%	27%	26%	32%	33%	31%
Issuer 18	57%	61%	27%	59%	51%	50%	54%	51%	55%	55%	55%	57%	51%	53%	57%	44%	53%	53%	60%	63%	58%	62%	49%	47%	50%	39%	57%	59%	55%	56%	60%
Issuer 19	31%	32%	55%	46%	47%	39%	34%	41%	50%	33%	47%	41%	41%	40%	37%	37%	37%	49%	48%	32%	46%	41%	39%	38%	40%	43%	38%	54%	38%	39%	
Issuer 20	40%	28%	44%	15%	25%	33%	32%	36%	33%	40%	19%	19%	26%	24%	30%	15%	16%	25%	29%	17%	29%	37%	24%	21%	13%	18%	23%	24%	20%	16%	19%
Other	27%	29%	30%	28%	29%	29%	30%	30%	31%	29%	29%	30%	26%	26%	30%	32%	31%	30%	30%	31%	30%	32%	32%	31%	30%	31%	30%	31%	32%	34%	32%
	2023-12-23	2023-12-24	2023-12-25	2023-12-26	2023-12-27	2023-12-28	2023-12-29	2023-12-30	2023-12-31	2024-01-01	2024-01-02	2024-01-03	2024-01-04	2024-01-05	2024-01-06	2024-01-07	2024-01-08	2024-01-09	2024-01-10	2024-01-11	2024-01-12	2024-01-13	2024-01-14	2024-01-15	2024-01-16	2024-01-17	2024-01-18	2024-01-19	2024-01-20	2024-01-21	2024-01-22

Transaction Type / Quantity	3DS 1.0.2 (source: ACS logs)	EMV 3DS2 (Td Transaction Log)
Processing Error	PARESSTATUS in {'-1','-2'}	TXN_STATUS not in {'A','Y','I','N','R'}
BAU	PARESSTATUS not in {'-1','-2'}	TXN_STATUS in {'A','Y','I','N','R'}
Challenge	BAU and REASON not in {'PAREQ_CALLOUT_PARES_Y', 'PAREQ_CALLOUT_PARES_A', 'PAREQ_CALLOUT_SEND_PARES_N', 'PAREQ_CALLOUT_PARES_N', 'PAREQ_CALLOUT_ATTEMPTS', 'RISKASSESSMENT_CALLOUT_PARES_Y', 'RISKASSESSMENT_CALLOUT_PARES_N'}	BAU and TXN_STATUS_ARES in {'C'}
Frictionless Approval	(not Challenge) and PARESSTATUS in {'1','2'}	BAU and TXN_STATUS in {'A','Y','I'} and TXN_STATUS_ARES not in {'C'}
Frictionless Decline	BAU and (not Challenge) and PARESSTATUS not in {'1','2'}	BAU and TXN_STATUS not in {'N','R'} and TXN_STATUS_ARES not in {'C'}
Successful Challenge	Challenge and PARESSTATUS in {'1','2'}	Challenge and TXN_STATUS in {'A','Y','I'}
Challenge Abandoned or Decline	Challenge and PARESSTATUS not in {'1','2'}	Challenge and TXN_STATUS not in {'A','Y','I'} and CHALLENGE_CANCEL!='05'
User Cancelled	N/A	Challenge and TXN_STATUS not in {'A','Y','I'} and CHALLENGE_CANCEL in {'01'}
Timeout	N/A	Challenge and TXN_STATUS not in {'A','Y','I'} and CHALLENGE_CANCEL in {'04'}
Merchant Overrides	N/A	Challenge and TXN_STATUS not in {'A','Y','I'} and CHALLENGE_CANCEL in {'05'}
Challenge Declined	Challenge and PARESSTATUS not in {'-3','1','2'}	Challenge and TXN_STATUS not in {'A','Y','I'} and CHALLENGE_CANCEL in {''} and TXN_STATUS_REASON not in {''}
Challenge Failed Error	N/A	Challenge and TXN_STATUS not in {'A','Y','I'} and CHALLENGE_CANCEL in {'','06'} and TXN_STATUS_REASON in {''}
1.x Browser	DTDVERSION=='1.0.2'	N/A
2.x App	N/A	DEVICE_CHANNEL=='01'
2.x Browser	N/A	DEVICE_CHANNEL=='02'
Acquirer Exemption	(3DS2_REQUESTOR_CHALLENGE_INDICATOR in {'05','06','07'}) and TXNSTATUS in {'I'} or (3DS2_SCAEXEMPTIONS in {'05'}) and TXNSTATUS in {'N'}	
Latency within TM	N/A	ARES_SENT_TIME - AREQ_RCVD_TIME

Merchant Search Criteria	where lower(merchant_name) = 'acme' and lower(merchant_url) like '%www.acme.com%'
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Sample Merchant Names	ACME acme
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Sample Merchant URL's	http://www.ACME.com https://www.ACME.com http://www.acme.com
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