

Results for HardMax t = 1000 Uniform

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling	0.51 +/- 0.067 0.23 (0.19, 0.29) Extreme Shares: 0.91	0.52 +/- 0.086 0.24 (0.19, 0.31) Extreme Shares: 0.944	0.51 +/- 0.086 0.23 (0.18, 0.3) Extreme Shares: 0.912
DynamicEpsilonGreedy		0.54 +/- 0.066 0.23 (0.19, 0.28) Extreme Shares: 0.9	
DynamicGreedy		0.47 +/- 0.085 0.23 (0.18, 0.3) Extreme Shares: 0.92	0.44 +/- 0.065 0.22 (0.18, 0.27) Extreme Shares: 0.85

Results for HardMaxWithRandom t = 1000 Uniform

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling	0.54 +/- 0.059 0.18 (0.15, 0.22) Extreme Shares: 0.76	0.51 +/- 0.075 0.18 (0.14, 0.23) Extreme Shares: 0.712	0.46 +/- 0.072 0.16 (0.13, 0.21) Extreme Shares: 0.656
DynamicEpsilonGreedy		0.5 +/- 0.058 0.17 (0.14, 0.21) Extreme Shares: 0.69	
DynamicGreedy		0.47 +/- 0.068 0.15 (0.12, 0.19) Extreme Shares: 0.608	0.46 +/- 0.053 0.15 (0.12, 0.18) Extreme Shares: 0.6

Results for SoftMax t = 1000 Uniform

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling		0.52 +/- 0.02 0.013 (0.01, 0.017) Extreme Shares: 0	0.5 +/- 0.024 0.018 (0.014, 0.023) Extreme Shares: 0
DynamicEpsilonGreedy			
DynamicGreedy		0.48 +/- 0.025 0.02 (0.016, 0.026) Extreme Shares: 0	

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Results for HardMax t = 1000 Needle In Haystack High

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling	0.54 +/- 0.069 0.25 (0.2, 0.3) Extreme Shares: 1	0.52 +/- 0.087 0.24 (0.19, 0.32) Extreme Shares: 0.96	0.58 +/- 0.086 0.23 (0.19, 0.31) Extreme Shares: 0.944
DynamicEpsilonGreedy		0.51 +/- 0.068 0.24 (0.2, 0.29) Extreme Shares: 0.94	
DynamicGreedy		0.46 +/- 0.086 0.24 (0.19, 0.31) Extreme Shares: 0.952	0.47 +/- 0.066 0.22 (0.19, 0.27) Extreme Shares: 0.87

Results for HardMaxWithRandom t = 1000 Needle In Haystack High

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling	0.46 +/- 0.062 0.2 (0.17, 0.25) Extreme Shares: 0.86	0.57 +/- 0.076 0.18 (0.14, 0.24) Extreme Shares: 0.776	0.63 +/- 0.068 0.15 (0.12, 0.19) Extreme Shares: 0.632
DynamicEpsilonGreedy		0.52 +/- 0.059 0.18 (0.15, 0.22) Extreme Shares: 0.73	
DynamicGreedy		0.48 +/- 0.077 0.19 (0.15, 0.25) Extreme Shares: 0.792	0.5 +/- 0.054 0.15 (0.12, 0.18) Extreme Shares: 0.56

Results for SoftMax t = 1000 Needle In Haystack High

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling		0.51 +/- 0.025 0.02 (0.015, 0.026) Extreme Shares: 0	0.53 +/- 0.032 0.032 (0.025, 0.041) Extreme Shares: 0
DynamicEpsilonGreedy			
DynamicGreedy		0.49 +/- 0.033 0.034 (0.027, 0.045) Extreme Shares: 0	

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Results for HardMax t = 1000 Heavy Tail

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling	0.54 +/- 0.068 0.24 (0.2, 0.29) Extreme Shares: 0.96	0.46 +/- 0.087 0.24 (0.19, 0.32) Extreme Shares: 0.968	0.41 +/- 0.087 0.24 (0.19, 0.31) Extreme Shares: 0.992
DynamicEpsilonGreedy		0.48 +/- 0.067 0.23 (0.19, 0.29) Extreme Shares: 0.92	
DynamicGreedy		0.54 +/- 0.085 0.23 (0.18, 0.3) Extreme Shares: 0.912	0.57 +/- 0.066 0.22 (0.18, 0.27) Extreme Shares: 0.88

Results for HardMaxWithRandom t = 1000 Heavy Tail

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling	0.48 +/- 0.064 0.21 (0.17, 0.26) Extreme Shares: 0.92	0.52 +/- 0.08 0.21 (0.16, 0.27) Extreme Shares: 0.896	0.45 +/- 0.077 0.19 (0.15, 0.25) Extreme Shares: 0.8
DynamicEpsilonGreedy		0.55 +/- 0.055 0.16 (0.13, 0.19) Extreme Shares: 0.62	
DynamicGreedy		0.55 +/- 0.07 0.16 (0.12, 0.2) Extreme Shares: 0.632	0.51 +/- 0.056 0.16 (0.14, 0.2) Extreme Shares: 0.65

Results for SoftMax t = 1000 Heavy Tail

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling		0.52 +/- 0.023 0.017 (0.013, 0.022) Extreme Shares: 0	0.51 +/- 0.025 0.021 (0.016, 0.027) Extreme Shares: 0
DynamicEpsilonGreedy			
DynamicGreedy		0.49 +/- 0.025 0.02 (0.016, 0.027) Extreme Shares: 0	

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Results for HardMax t = 1000 Needle In Haystack Medium

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling		0.54 +/- 0.083 0.22 (0.17, 0.29) Extreme Shares: 0.848	0.5 +/- 0.08 0.2 (0.16, 0.27) Extreme Shares: 0.768
DynamicEpsilonGreedy			
DynamicGreedy		0.47 +/- 0.083 0.22 (0.17, 0.29) Extreme Shares: 0.864	

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Results for HardMaxWithRandom t = 1000 Needle In Haystack Medium

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling		0.49 +/- 0.063 0.13 (0.099, 0.16) Extreme Shares: 0.408	0.52 +/- 0.06 0.12 (0.092, 0.15) Extreme Shares: 0.392
DynamicEpsilonGreedy			
DynamicGreedy		0.45 +/- 0.065 0.14 (0.11, 0.18) Extreme Shares: 0.512	

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Results for SoftMax t = 1000 Needle In Haystack Medium

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling		0.49 +/- 0.015 0.0075 (0.0059, 0.0097) Extreme Shares: 0	0.51 +/- 0.015 0.0071 (0.0056, 0.0092) Extreme Shares: 0
DynamicEpsilonGreedy			
DynamicGreedy		0.5 +/- 0.015 0.0076 (0.006, 0.0099) Extreme Shares: 0	

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Results for HardMax t = 3000 Uniform

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling	0.51 +/- 0.068 0.24 (0.2, 0.29) Extreme Shares: 0.95	0.53 +/- 0.087 0.24 (0.19, 0.31) Extreme Shares: 0.96	0.52 +/- 0.087 0.24 (0.19, 0.31) Extreme Shares: 0.96
DynamicEpsilonGreedy		0.53 +/- 0.066 0.23 (0.19, 0.28) Extreme Shares: 0.89	
DynamicGreedy		0.47 +/- 0.083 0.22 (0.17, 0.29) Extreme Shares: 0.88	0.43 +/- 0.065 0.21 (0.18, 0.26) Extreme Shares: 0.85

Results for HardMaxWithRandom t = 3000 Uniform

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling	0.51 +/- 0.053 0.14 (0.12, 0.18) Extreme Shares: 0.54	0.52 +/- 0.064 0.13 (0.1, 0.17) Extreme Shares: 0.488	0.45 +/- 0.062 0.12 (0.096, 0.16) Extreme Shares: 0.408
DynamicEpsilonGreedy		0.49 +/- 0.047 0.11 (0.095, 0.14) Extreme Shares: 0.42	
DynamicGreedy		0.44 +/- 0.059 0.11 (0.088, 0.15) Extreme Shares: 0.376	0.48 +/- 0.045 0.11 (0.088, 0.13) Extreme Shares: 0.36

Results for SoftMax t = 3000 Uniform

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling		0.52 +/- 0.013 0.0051 (0.004, 0.0066) Extreme Shares: 0	0.53 +/- 0.019 0.011 (0.009, 0.015) Extreme Shares: 0
DynamicEpsilonGreedy			
DynamicGreedy		0.47 +/- 0.022 0.016 (0.012, 0.02) Extreme Shares: 0	

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Results for HardMax t = 3000 Needle In Haystack High

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling	0.54 +/- 0.069 0.25 (0.2, 0.3) Extreme Shares: 0.99	0.53 +/- 0.088 0.25 (0.2, 0.32) Extreme Shares: 1	0.59 +/- 0.085 0.23 (0.18, 0.3) Extreme Shares: 0.952
DynamicEpsilonGreedy		0.5 +/- 0.069 0.24 (0.2, 0.3) Extreme Shares: 0.96	
DynamicGreedy		0.46 +/- 0.086 0.24 (0.19, 0.31) Extreme Shares: 0.968	0.46 +/- 0.066 0.23 (0.19, 0.28) Extreme Shares: 0.91

Results for HardMaxWithRandom t = 3000 Needle In Haystack High

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling	0.48 +/- 0.056 0.16 (0.13, 0.2) Extreme Shares: 0.67	0.59 +/- 0.064 0.13 (0.1, 0.17) Extreme Shares: 0.52	0.68 +/- 0.059 0.11 (0.089, 0.15) Extreme Shares: 0.504
DynamicEpsilonGreedy		0.52 +/- 0.053 0.15 (0.12, 0.18) Extreme Shares: 0.58	
DynamicGreedy		0.48 +/- 0.066 0.14 (0.11, 0.18) Extreme Shares: 0.536	0.48 +/- 0.051 0.14 (0.11, 0.17) Extreme Shares: 0.52

Results for SoftMax t = 3000 Needle In Haystack High

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling		0.52 +/- 0.017 0.009 (0.0071, 0.012) Extreme Shares: 0	0.57 +/- 0.026 0.022 (0.017, 0.029) Extreme Shares: 0
DynamicEpsilonGreedy			
DynamicGreedy		0.46 +/- 0.028 0.026 (0.02, 0.033) Extreme Shares: 0	

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Results for HardMax t = 3000 Heavy Tail

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling	0.54 +/- 0.068 0.24 (0.2, 0.29) Extreme Shares: 0.96	0.46 +/- 0.088 0.25 (0.19, 0.32) Extreme Shares: 0.976	0.41 +/- 0.087 0.24 (0.19, 0.31) Extreme Shares: 0.984
DynamicEpsilonGreedy		0.47 +/- 0.068 0.24 (0.2, 0.29) Extreme Shares: 0.95	
DynamicGreedy		0.55 +/- 0.084 0.23 (0.18, 0.3) Extreme Shares: 0.88	0.55 +/- 0.065 0.22 (0.18, 0.27) Extreme Shares: 0.88

Results for HardMaxWithRandom t = 3000 Heavy Tail

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling	0.5 +/- 0.058 0.18 (0.15, 0.22) Extreme Shares: 0.71	0.55 +/- 0.067 0.14 (0.11, 0.19) Extreme Shares: 0.536	0.48 +/- 0.069 0.15 (0.12, 0.2) Extreme Shares: 0.584
DynamicEpsilonGreedy		0.53 +/- 0.049 0.12 (0.1, 0.15) Extreme Shares: 0.41	
DynamicGreedy		0.56 +/- 0.061 0.12 (0.094, 0.15) Extreme Shares: 0.408	0.53 +/- 0.049 0.12 (0.1, 0.15) Extreme Shares: 0.42

Results for SoftMax t = 3000 Heavy Tail

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling		0.53 +/- 0.012 0.0046 (0.0036, 0.006) Extreme Shares: 0	0.54 +/- 0.021 0.014 (0.011, 0.019) Extreme Shares: 0
DynamicEpsilonGreedy			
DynamicGreedy		0.48 +/- 0.023 0.017 (0.013, 0.022) Extreme Shares: 0	

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Results for HardMax t = 3000 Needle In Haystack Medium

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling		0.52 +/- 0.082 0.21 (0.17, 0.28) Extreme Shares: 0.816	0.51 +/- 0.081 0.21 (0.17, 0.27) Extreme Shares: 0.792
DynamicEpsilonGreedy			
DynamicGreedy		0.48 +/- 0.083 0.22 (0.17, 0.29) Extreme Shares: 0.816	

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Results for HardMaxWithRandom t = 3000 Needle In Haystack Medium

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling		0.54 +/- 0.053 0.091 (0.072, 0.12) Extreme Shares: 0.24	0.53 +/- 0.051 0.083 (0.066, 0.11) Extreme Shares: 0.192
DynamicEpsilonGreedy			
DynamicGreedy		0.44 +/- 0.048 0.073 (0.057, 0.095) Extreme Shares: 0.168	

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Results for SoftMax t = 3000 Needle In Haystack Medium

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling		0.5 +/- 0.0094 0.0028 (0.0022, 0.0036) Extreme Shares: 0	0.52 +/- 0.012 0.0045 (0.0036, 0.0059) Extreme Shares: 0
DynamicEpsilonGreedy			
DynamicGreedy		0.49 +/- 0.013 0.0052 (0.0041, 0.0067) Extreme Shares: 0	

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Results for HardMax t = 5000 Uniform

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling	0.52 +/- 0.068 0.24 (0.2, 0.29) Extreme Shares: 0.96	0.54 +/- 0.087 0.24 (0.19, 0.31) Extreme Shares: 0.944	0.53 +/- 0.087 0.24 (0.19, 0.31) Extreme Shares: 0.96
DynamicEpsilonGreedy		0.54 +/- 0.066 0.22 (0.19, 0.28) Extreme Shares: 0.89	
DynamicGreedy		0.47 +/- 0.084 0.23 (0.18, 0.29) Extreme Shares: 0.88	0.42 +/- 0.065 0.21 (0.18, 0.26) Extreme Shares: 0.85

Results for HardMaxWithRandom t = 5000 Uniform

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling	0.51 +/- 0.044 0.1 (0.084, 0.13) Extreme Shares: 0.23	0.53 +/- 0.057 0.11 (0.083, 0.14) Extreme Shares: 0.336	0.5 +/- 0.054 0.094 (0.074, 0.12) Extreme Shares: 0.264
DynamicEpsilonGreedy		0.51 +/- 0.042 0.091 (0.076, 0.11) Extreme Shares: 0.31	
DynamicGreedy		0.43 +/- 0.055 0.095 (0.075, 0.12) Extreme Shares: 0.312	0.49 +/- 0.04 0.084 (0.069, 0.1) Extreme Shares: 0.25

Results for SoftMax t = 5000 Uniform

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling		0.52 +/- 0.01 0.0032 (0.0026, 0.0042) Extreme Shares: 0	0.54 +/- 0.018 0.01 (0.0079, 0.013) Extreme Shares: 0
DynamicEpsilonGreedy			
DynamicGreedy		0.46 +/- 0.021 0.014 (0.011, 0.019) Extreme Shares: 0	

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Results for HardMax t = 5000 Needle In Haystack High

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling	0.54 +/- 0.069 0.24 (0.2, 0.3) Extreme Shares: 0.97	0.52 +/- 0.088 0.25 (0.2, 0.32) Extreme Shares: 0.992	0.6 +/- 0.085 0.23 (0.18, 0.3) Extreme Shares: 0.944
DynamicEpsilonGreedy		0.5 +/- 0.069 0.25 (0.2, 0.3) Extreme Shares: 0.98	
DynamicGreedy		0.46 +/- 0.087 0.24 (0.19, 0.31) Extreme Shares: 0.96	0.45 +/- 0.066 0.22 (0.18, 0.27) Extreme Shares: 0.89

Results for HardMaxWithRandom t = 5000 Needle In Haystack High

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling	0.48 +/- 0.048 0.12 (0.097, 0.14) Extreme Shares: 0.38	0.6 +/- 0.055 0.095 (0.075, 0.12) Extreme Shares: 0.36	0.69 +/- 0.054 0.092 (0.073, 0.12) Extreme Shares: 0.496
DynamicEpsilonGreedy		0.52 +/- 0.049 0.12 (0.1, 0.15) Extreme Shares: 0.47	
DynamicGreedy		0.47 +/- 0.059 0.11 (0.088, 0.15) Extreme Shares: 0.392	0.48 +/- 0.05 0.13 (0.11, 0.16) Extreme Shares: 0.48

Results for SoftMax t = 5000 Needle In Haystack High

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling		0.52 +/- 0.013 0.0052 (0.0041, 0.0067) Extreme Shares: 0	0.58 +/- 0.026 0.021 (0.017, 0.028) Extreme Shares: 0
DynamicEpsilonGreedy			
DynamicGreedy		0.45 +/- 0.026 0.022 (0.017, 0.029) Extreme Shares: 0	

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Results for HardMax t = 5000 Heavy Tail

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling	0.54 +/- 0.068 0.24 (0.2, 0.29) Extreme Shares: 0.95	0.46 +/- 0.088 0.25 (0.2, 0.32) Extreme Shares: 0.992	0.42 +/- 0.087 0.24 (0.19, 0.31) Extreme Shares: 0.984
DynamicEpsilonGreedy		0.47 +/- 0.068 0.24 (0.2, 0.29) Extreme Shares: 0.94	
DynamicGreedy		0.56 +/- 0.084 0.23 (0.18, 0.3) Extreme Shares: 0.904	0.54 +/- 0.066 0.22 (0.18, 0.27) Extreme Shares: 0.87

Results for HardMaxWithRandom t = 5000 Heavy Tail

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling	0.51 +/- 0.048 0.12 (0.099, 0.15) Extreme Shares: 0.4	0.6 +/- 0.051 0.082 (0.065, 0.11) Extreme Shares: 0.264	0.51 +/- 0.058 0.11 (0.084, 0.14) Extreme Shares: 0.352
DynamicEpsilonGreedy		0.51 +/- 0.041 0.088 (0.073, 0.11) Extreme Shares: 0.21	
DynamicGreedy		0.57 +/- 0.057 0.1 (0.082, 0.14) Extreme Shares: 0.336	0.53 +/- 0.043 0.095 (0.079, 0.12) Extreme Shares: 0.31

Results for SoftMax t = 5000 Heavy Tail

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling		0.53 +/- 0.0089 0.0025 (0.002, 0.0033) Extreme Shares: 0	0.54 +/- 0.02 0.013 (0.01, 0.017) Extreme Shares: 0
DynamicEpsilonGreedy			
DynamicGreedy		0.48 +/- 0.023 0.016 (0.013, 0.021) Extreme Shares: 0	

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Results for HardMax t = 5000 Needle In Haystack Medium

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling		0.53 +/- 0.081 0.21 (0.17, 0.28) Extreme Shares: 0.824	0.51 +/- 0.081 0.21 (0.17, 0.27) Extreme Shares: 0.816
DynamicEpsilonGreedy			
DynamicGreedy		0.49 +/- 0.082 0.21 (0.17, 0.28) Extreme Shares: 0.832	

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Results for HardMaxWithRandom t = 5000 Needle In Haystack Medium

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling		0.57 +/- 0.048 0.074 (0.058, 0.096) Extreme Shares: 0.16	0.55 +/- 0.047 0.07 (0.055, 0.091) Extreme Shares: 0.144
DynamicEpsilonGreedy			
DynamicGreedy		0.43 +/- 0.043 0.059 (0.047, 0.077) Extreme Shares: 0.104	

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Results for SoftMax t = 5000 Needle In Haystack Medium

	ThompsonSampling	DynamicEpsilonGreedy	DynamicGreedy
ThompsonSampling		0.51 +/- 0.0086 0.0024 (0.0019, 0.0031) Extreme Shares: 0	0.53 +/- 0.011 0.0039 (0.0031, 0.005) Extreme Shares: 0
DynamicEpsilonGreedy			
DynamicGreedy		0.48 +/- 0.012 0.0049 (0.0039, 0.0064) Extreme Shares: 0	

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