



# NETSOL

*High Quality & High Performance Memory Supplier*



**Netsol Co., Ltd**

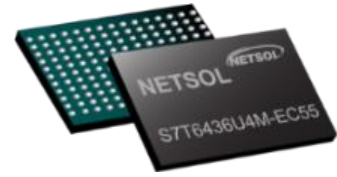
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# Netsol



- Fabless memory IC vendor in Korea.
- Over 20 years experience of engineers.
- Full line up of SRAM memory products.
- Long term and stable supportability with higher quality level.



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# Netsol – History



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**2017**      Developed 32Mb Customized SRAM

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**2016**      Developed 1/2/4/8Mb Low Power SRAM

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**2015**      Developed 144Mb Sync. SRAM

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**2014**      Move office to Innoplex Bldg.  
Developed 144Mb Quadruple/DDR SRAM

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**2013**      Developed 72Mb Quadruple/DDR SRAM  
Developed 4Mb Async Fast SRAM  
Developed 18/36Mb Quadruple/DDR SRAM

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**2012**      Patent License from Samsung Electronics  
Developed 18Mb Sync SRAM  
Developed 4Mb Sync SRAM

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**2011**      Developed 9Mb Sync SRAM  
ISO 9001:2008 certification

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**2010**      Establishment of the company

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## Product Line Up

Product	Density	PKG
Async. Fast SRAM	1Mb, 2Mb 4Mb, 8Mb, 16Mb, 32Mb	• 32sTSOP1 • 48TSOP1 • 44TSOP2 • 48FBGA
Async. Low Power SRAM	1Mb, 2Mb, 4Mb, 8Mb	• 32sTSOP1 • 48TSOP1 • 44TSOP2 • 48FBGA
Standard Sync. SRAM (SPB, FT, NT-SPB, NT-FT)	4Mb, 9Mb, 18Mb, 36Mb, 72Mb	• 100TQFP
DDR Sync. SRAM (DDR-II, DDR-II+)	36Mb, 72Mb, 144Mb	• 165FBGA
QDR Sync. SRAM (QDR-II, QDR-II+)	18Mb, 36Mb, 72Mb, 144Mb	• 165FBGA
Frame Buffer SRAM	32Mb	• 88QFN

## Application

### Industrial/Medical

- HMI
- Factory Automation
- Motor / Inverter
- Measurement
- Medical / Diagnostic



### Commercial

- Office Appliance
- POS, Thermal Printer
- Finger Print Reader



### IoT/Smart

- Smart Grid
- Smart Home
- Energy



### Network

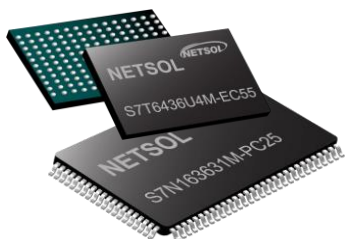
- Router
- Switch
- Network Security





## NETSOL Product List

- **Asynchronous Fast SRAM**
- **Asynchronous Low Power SRAM**
- **Synchronous SRAM**
- **DDR SRAM**
- **QDR SRAM**



*High Quality & High Performance Memory Provider*

**NETSOL Co., Ltd.**

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## ◆ Asynchronous FAST SRAM

Density	Org.	Part Number	Vdd(V)	Access Time	Package	Availability
1M bit	64Kx16	S6R1016W1A	1.65~3.6	8/10/12/15ns	44TSOP2 48FBGA	Now
		S6R1016V1A	3.3	8/10ns		Now
		S6R1016C1A	5.0	10ns		Now
	128Kx8	S6R1008W1A	1.65~3.6	8/10/12/15ns	32sTSOP1	Now
		S6R1008V1A	3.3	8/10ns		Now
		S6R1008C1A	5.0	10ns		Now
2M bit	128Kx16	S6R2016W1A	1.65~3.6	8/10/12/15ns	44TSOP2 48FBGA	Now
		S6R2016V1A	3.3	8/10ns		Now
		S6R2016C1A	5.0	10ns		Now
	256Kx8	S6R2008W1A	1.65~3.6	8/10/12/15ns	44TSOP2	Now
		S6R2008V1A	3.3	8/10ns		Now
		S6R2008C1A	5.0	10ns		Now
4M bit	256Kx16	S6R4016W1A	1.65~3.6	8/10/12/15ns	44TSOP2 48FBGA	Now
		S6R4016V1A	3.3	8/10ns		Now
		S6R4016C1A	5.0	10ns		Now
	512Kx8	S6R4008W1A	1.65~3.6	8/10/12/15ns	44TSOP2	Now
		S6R4008V1A	3.3	8/10ns		Now
		S6R4008C1A	5.0	10ns		Now
8M bit	512Kx16	S6R8016W1A	1.65~3.6	8/10/12/15ns	44TSOP2 48FBGA	Now
		S6R8016C1A	5.0	10ns		Now
	1Mx8	S6R8008W1A	1.65~3.6	8/10/12/15ns	44TSOP2 48FBGA	Now
		S6R8008C1A	5.0	10ns		Now
16M bit	1Mx16	S6R1616W1M	1.65~3.6	8/10/12/15ns	48TSOP1 48FBGA	Now
		S6R1616V1M	3.3	8/10ns		Now
		S6R1616C1M	5.0	10ns		Now
	2Mx8	S6R1608W1M	1.65~3.6	8/10/12/15ns	44TSOP2 48FBGA	Now
		S6R1608V1M	3.3	8/10ns		Now
		S6R1608C1M	5.0	10ns		Now
32M bit	2Mx16	S6R3216W1M	1.65~3.6	8/10/12/15ns	48FBGA	Now
	4Mx8	S6R3208W1M	1.65~3.6	8/10/12/15ns		Now

\* Part Number : S6Rxxxxxxx-ptss

1. p : Package type

U=44TSOP2, X=FBGA, L=32sTSOP1, Y=48TSOP1

2. t : Temperature

I = Industrial Temperature (-40~85°C), C=Commercial Temperature (0~70°C), A=Automotive (-40~125°C)

3. ss : Speed

08 = 8ns, 10=10ns, 12=12ns, 15=15ns

◆ Asynchronous Low Power SRAM

Density	Org.	Part Number	Vdd(V)	C/S Option	Speed - tAA(ns)	Package	Availability
1Mbit	64Kx16	S6L1016W1M	2.3~3.6	1 C/S	45/55/70ns	44TSOP2, 48FBGA	Now
		S6L1016C1M	4.5~5.5	1 C/S			Now
	128Kx8	S6L1008W2M	2.3~3.6	2 C/S	45/55/70ns	32sTSOP1	Now
		S6L1008C2M	4.5~5.5	2 C/S			Now
2M bit	128Kx16	S6L2016W1M	2.3~3.6	1 C/S	45/55/70ns	44TSOP2,48FBGA	Now
		S6L2016W2M	2.3~3.6	2 C/S		48FBGA	Now
		S6L2016C1M	4.5~5.5	1 C/S		44TSOP2, 48FBGA	Now
	256Kx8	S6L2008W1M	2.3~3.6	1 C/S	45/55/70ns	32sTSOP1	Now
		S6L2008W2M	2.3~3.6	2 C/S			Now
		S6L2008C2M	4.5~5.5	2 C/S			Now
4M bit	256Kx16	S6L4016W1M	2.3~3.6	1 C/S	45/55/70ns	44TSOP2, 48FBGA	Now
		S6L4016W2M	2.3~3.6	2 C/S			Now
		S6L4016C1M	4.5~5.5	1 C/S			Now
		S6L4016C2M	4.5~5.5	2 C/S			Now
	512Kx8	S6L4008W1M	2.3~3.6	1 C/S	45/55/70ns	32sTSOP1	Now
		S6L4008C1M	4.5~5.5	1 C/S			Now
8M bit	512Kx16	S6L8016W1M	2.3~3.6	1 C/S	45/55/70ns	44TSOP2	Now
		S6L8016W2M	2.3~3.6	2 C/S		48FBGA	Now
		S6L8016C1M	4.5~5.5	1 C/S		44TSOP2	Now
		S6L8016C2M	4.5~5.5	2 C/S		48FBGA	Now
	1Mx8	S6L8008W2M	2.3~3.6	2 C/S	45/55/70ns	44TSOP2, 48FBGA	Now
		S6L8008C2M	4.5~5.5	2 C/S			Now

\* Part Number : S6Lxxxxxxx-ptss

1. p : Package type

U=44TSOP2, X=FBGA, L=32sTSOP1, Y=48TSOP1

2. t : Temperature

I = Industrial Temperature (-40~85C), C=Commercial Temperature (0~70C), A=Automotive (-40~125°C)

3. ss : Speed

45 = 45ns, 55=55ns, 70=70ns

## ◆ Synchronous SRAM

### (1) Synchronous Pipe Line Burst SRAM

Density	Org.	Part Number	Operating	VDD(V)	tCYC	Access Time	Package	Availability
4M bit	128Kx36	S7A403630M	SPB	1.8/2.5/3.0	250MHz	2.6ns	100TQFP	Now
	256Kx18	S7A401830M	SPB	1.8/2.5/3.0	250MHz	2.6ns	100TQFP	Now
9M bit	256Kx36	S7A803630M	SPB	1.8/2.5/3.0	250MHz	2.6ns	100TQFP	Now
	512Kx18	S7A801830M	SPB	1.8/2.5/3.0	250MHz	2.6ns	100TQFP	Now
18M bit	512Kx36	S7A163630M	SPB	1.8/2.5/3.0	250MHz	2.6ns	100TQFP	Now
	1Mx18	S7A161830M	SPB	1.8/2.5/3.0	250MHz	2.6ns	100TQFP	Now
36M bit	1Mx36	S7A323630M	SPB	1.8/2.5/3.0	250MHz	2.6ns	100TQFP	Now
	2Mx18	S7A321830M	SPB	1.8/2.5/3.0	250MHz	2.6ns	100TQFP	Now
72M bit	2Mx36	S7A643630M	SPB	1.8/2.5/3.0	250MHz	2.6ns	100TQFP	Now
	4Mx18	S7A641830M	SPB	1.8/2.5/3.0	250MHz	2.6ns	100TQFP	Now

### (2) Synchronous Flow Through SRAM

Density	Org.	Part Number	Operating	VDD(V)	tCYC	Access Time	Package	Availability
4M bit	128Kx36	S7B403635M	FT	1.8/2.5/3.0	133MHz	6.5ns	100TQFP	Now
	256Kx18	S7B401835M	FT	1.8/2.5/3.0	133MHz	6.5ns	100TQFP	Now
9M bit	256Kx36	S7B803635M	FT	1.8/2.5/3.0	133MHz	6.5ns	100TQFP	Now
	512Kx18	S7B801835M	FT	1.8/2.5/3.0	133MHz	6.5ns	100TQFP	Now
18M bit	512Kx36	S7B163635M	FT	1.8/2.5/3.0	133MHz	6.5ns	100TQFP	Now
	1Mx18	S7B161835M	FT	1.8/2.5/3.0	133MHz	6.5ns	100TQFP	Now
36M bit	1Mx36	S7B323635M	FT	1.8/2.5/3.0	133MHz	6.5ns	100TQFP	Now
	2Mx18	S7B321835M	FT	1.8/2.5/3.0	133MHz	6.5ns	100TQFP	Now
72M bit	2Mx36	S7B643635M	FT	1.8/2.5/3.0	133MHz	6.5ns	100TQFP	Now
	4Mx18	S7B641835M	FT	1.8/2.5/3.0	133MHz	6.5ns	100TQFP	Now

\* Part Number : S7xxxxxxxx-ptss

1. p : Package type

P=TQFP, E=FBGA

2. t : Temperature

I = Industrial Temperature (-40~85C), C=Commercial Temperature (0~70C)

3. ss : Speed

65=6.5ns (Flow Through)

25=250MHz (Pipe Line Burst)



## ◆ Synchronous SRAM

### (3) NT Pipe Line Burst SRAM

Density	Org.	Part Number	Operating	VDD(V)	tCYC	Access Time	Package	Availability
4M bit	128Kx36	S7N403631M	NT_SPB	1.8/2.5/3.0	250MHz	2.6ns	100TQFP	Now
	256Kx18	S7N401831M	NT_SPB	1.8/2.5/3.0	250MHz	2.6ns	100TQFP	Now
9M bit	256Kx36	S7N803631M	NT_SPB	1.8/2.5/3.0	250MHz	2.6ns	100TQFP	Now
	512Kx18	S7N801831M	NT_SPB	1.8/2.5/3.0	250MHz	2.6ns	100TQFP	Now
18M bit	512Kx36	S7N163631M	NT_SPB	1.8/2.5/3.0	250MHz	2.6ns	100TQFP	Now
	1Mx18	S7N161831M	NT_SPB	1.8/2.5/3.0	250MHz	2.6ns	165FBGA	Now
36M bit	1Mx36	S7N323631M	NT_SPB	1.8/2.5/3.0	250MHz	2.6ns	100TQFP	Now
	2Mx18	S7N321831M	NT_SPB	1.8/2.5/3.0	250MHz	2.6ns	165FBGA	Now
72M bit	2Mx36	S7N643631M	NT_SPB	1.8/2.5/3.0	250MHz	2.6ns	100TQFP	Now
	4Mx18	S7N641831M	NT_SPB	1.8/2.5/3.0	250MHz	2.6ns	165FBGA	Now

### (4) NT Flow Through SRAM

Density	Org.	Part Number	Operating	VDD(V)	tCYC	Access Time	Package	Availability
4M bit	128Kx36	S7M403635M	NT_FT	1.8/2.5/3.0	133MHz	6.5ns	100TQFP	Now
	256Kx18	S7M401835M	NT_FT	1.8/2.5/3.0	133MHz	6.5ns	100TQFP	Now
9M bit	256Kx36	S7M803635M	NT_FT	1.8/2.5/3.0	133MHz	6.5ns	100TQFP	Now
	512Kx18	S7M801835M	NT_FT	1.8/2.5/3.0	133MHz	6.5ns	100TQFP	Now
18M bit	512Kx36	S7M163635M	NT_FT	1.8/2.5/3.0	133MHz	6.5ns	100TQFP	Now
	1Mx18	S7M161835M	NT_FT	1.8/2.5/3.0	133MHz	6.5ns	100TQFP	Now
36M bit	1Mx36	S7M323635M	NT_FT	1.8/2.5/3.0	133MHz	6.5ns	100TQFP	Now
	2Mx18	S7M321835M	NT_FT	1.8/2.5/3.0	133MHz	6.5ns	100TQFP	Now
72M bit	2Mx36	S7M643635M	NT_FT	1.8/2.5/3.0	133MHz	6.5ns	100TQFP	Now
	4Mx18	S7M641835M	NT_FT	1.8/2.5/3.0	133MHz	6.5ns	100TQFP	Now

\* Part Number : S7xxxxxxxx-ptss

4. p : Package type

P=TQFP, E=FBGA

5. t : Temperature

I = Industrial Temperature (-40~85C), C=Commercial Temperature (0~70C)

6. ss : Speed

65=6.5ns (Flow Through)

25=250MHz (Pipe Line Burst)

## ◆ DDR SRAM

Density	Org.	Part Number	Operating Mode	VDD (V)	Cycle time (MHz)	Burst Length	Clock Latency	Package	Availability
18M bit	512Kx36(1Mx18)	S7I1636(18)82M	DDR II	1.8	333,300,250	2	1.5	165FBGA	Now
	512Kx36(1Mx18)	S7K1636(18)T2M	DDR II+	1.8	450,400,333	2	2	165FBGA	Now
	512Kx36(1Mx18)	S7K1636(18)U2M	DDR II+	1.8	550,450,400	2	2.5	165FBGA	Now
	512Kx36(1Mx18)	S7L1636(18)T2M	DDR II+, ODT	1.8	450,400,333	2	2	165FBGA	Now
	512Kx36(1Mx18)	S7L1636(18)U2M	DDR II+, ODT	1.8	550,450,400	2	2.5	165FBGA	Now
	512Kx36(1Mx18)	S7J1636(18)82M	DDR II, SIO	1.8	333,300,250	2	1.5	165FBGA	Now
	512Kx36(1Mx18)	S7I1636(18)84M	DDR II	1.8	333,300,250	4	1.5	165FBGA	Now
36M bit	1Mx36(2Mx18)	S7I3236(18)82M	DDR II	1.8	333,300,250	2	1.5	165FBGA	Now
	1Mx36(2Mx18)	S7K3236(18)T2M	DDR II+	1.8	450,400,333	2	2	165FBGA	Now
	1Mx36(2Mx18)	S7K3236(18)U2M	DDR II+	1.8	550,450,400	2	2.5	165FBGA	Now
	1Mx36(2Mx18)	S7L3236(18)T2M	DDR II+, ODT	1.8	450,400,333	2	2	165FBGA	Now
	1Mx36(2Mx18)	S7L3236(18)U2M	DDR II+, ODT	1.8	550,450,400	2	2.5	165FBGA	Now
	1Mx36(2Mx18)	S7I3236(18)84M	DDR II	1.8	333,300,250	4	1.5	165FBGA	Now
	1Mx36(2Mx18)	S7J3236(18)82M	DDR II, SIO	1.8	333,300,250	2	1.5	165FBGA	Now
72M bit	2Mx36(4Mx18)	S7I6436(18)82M	DDR II	1.8	333,300,250	2	1.5	165FBGA	Now
	2Mx36(4Mx18)	S7K6436(18)T2M	DDR II+	1.8	450,400,333	2	2	165FBGA	Now
	2Mx36(4Mx18)	S7K6436(18)U2M	DDR II+	1.8	550,450,400	2	2.5	165FBGA	Now
	2Mx36(4Mx18)	S7L6436(18)T2M	DDR II+, ODT	1.8	450,400,333	2	2	165FBGA	Now
	2Mx36(4Mx18)	S7L6436(18)U2M	DDR II+, ODT	1.8	550,450,400	2	2.5	165FBGA	Now
	2Mx36(4Mx18)	S7J6436(18)82M	DDR II, SIO	1.8	333,300,250	2	1.5	165FBGA	Now
	2Mx36(4Mx18)	S7I6436(18)84M	DDR II	1.8	333,300,250	4	1.5	165FBGA	Now

\* Part Number : S7xxxxxxxx-etss

1. e : Package type

E = 165FBGA

2. t : Temperature

I = Industrial Temperature (-40~85C), C=Commercial Temperature (0~70C)

3. ss : Speed

20/25/30/33/40/45/50/55/60/65

=200/250/300/330/400/450/500/550/600/650MHz

## ◆ QDR SRAM

Density	Org.	Part Number	Operating Mode	VDD (V)	Cycle time (MHz)	Burst Len.	Clock Latency	Package	Availability
18M bit	512Kx36(1Mx18)	S7Q1636(18)62M	QDR I	1.8~2.5	167	2	1	165FBGA	Now
	512Kx36(1Mx18)	S7R1636(18)82M	QDR II	1.8	333,300,250	2	1.5	165FBGA	Now
	512Kx36(1Mx18)	S7Q1636(18)64M	QDR I	1.8~2.5	167	4	1	165FBGA	Now
	512Kx36(1Mx18)	S7R1636(18)84M	QDR II	1.8	333,300,250	4	1.5	165FBGA	Now
	512Kx36(1Mx18)	S7S1636(18)T4M	QDR II+	1.8	450,400,333	4	2	165FBGA	Now
	512Kx36(1Mx18)	S7S1636(18)U4M	QDR II+	1.8	550,450,400	4	2.5	165FBGA	Now
	512Kx36(1Mx18)	S7T1636(18)T4M	QDR II+, ODT	1.8	450,400,333	4	2	165FBGA	Now
	512Kx36(1Mx18)	S7T1636(18)U4M	QDR II+, ODT	1.8	550,450,400	4	2.5	165FBGA	Now
36M bit	1Mx36(2Mx18)	S7R3236(18)82M	QDR II	1.8	333,300,250	2	1.5	165FBGA	Now
	4Mx9	S7R320982M	QDR II	1.8	333,300,250	2	1.5	165FBGA	Now
	1Mx36(2Mx18)	S7S3236(18)U2M	QDR II+	1.8	450,400,366	2	2.5	165FBGA	Now
	1Mx36(2Mx18)	S7R3236(18)84M	QDR II	1.8	333,300,250	4	1.5	165FBGA	Now
	4Mx9	S7R320984M	QDR II	1.8	333,300,250	4	1.5	165FBGA	Now
	1Mx36(2Mx18)	S7S3236(18)T4M	QDR II+	1.8	450,400,333	4	2	165FBGA	Now
	1Mx36(2Mx18)	S7S3236(18)U4M	QDR II+	1.8	550,450,400	4	2.5	165FBGA	Now
	1Mx36(2Mx18)	S7T3236(18)T4M	QDR II+, ODT	1.8	450,400,333	4	2	165FBGA	Now
1Mx36(2Mx18)	S7T3236(18)U4M	QDR II+, ODT	1.8	550,450,400	4	2.5	165FBGA	Now	
72M bit	2Mx36(4Mx18)	S7R6436(18)82M	QDR II	1.8	333,300,250	2	1.5	165FBGA	Now
	8Mx9	S7R640982M	QDR II	1.8	333,300,250	2	1.5	165FBGA	Now
	2Mx36(4Mx18)	S7S6436(18)U2M	QDR II+	1.8	450,400,366	2	2.5	165FBGA	Now
	2Mx36(4Mx18)	S7T6436(18)T2M	QDR II+, ODT	1.8	400,357,333	2	2	165FBGA	Now
	2Mx36(4Mx18)	S7R6436(18)84M	QDR II	1.8	333,300,250	4	1.5	165FBGA	Now
	2Mx36(4Mx18)	S7S6436(18)T4M	QDR II+	1.8	450,400,333	4	2	165FBGA	Now
	2Mx36(4Mx18)	S7S6436(18)U4M	QDR II+	1.8	550,450,400	4	2.5	165FBGA	Now
	2Mx36(4Mx18)	S7T6436(18)T4M	QDR II+, ODT	1.8	450,400,333	4	2	165FBGA	Now
2Mx36(4Mx18)	S7T6436(18)U4M	QDR II+, ODT	1.8	550,450,400	4	2.5	165FBGA	Now	
144M bit	4Mx36(8Mx18)	S7R4436(18)82M	QDR II	1.8	333,300,250	2	1.5	165FBGA	Now
	16Mx9	S7R440982M	QDR II	1.8	333,300,250	2	1.5	165FBGA	Now
	4Mx36(8Mx18)	S7S4436(18)U2M	QDR II+	1.8	450,400,366	2	2.5	165FBGA	Now
	4Mx36(8Mx18)	S7T4436(18)T2M	QDR II+, ODT	1.8	400,357,333	2	2	165FBGA	Now
	4Mx36(8Mx18)	S7R4436(18)84M	QDR II	1.8	333,300,250	4	1.5	165FBGA	Now
	4Mx36(8Mx18)	S7S4436(18)T4M	QDR II+	1.8	450,400,333	4	2	165FBGA	Now
	4Mx36(8Mx18)	S7S4436(18)U4M	QDR II+	1.8	550,450,400	4	2.5	165FBGA	Now
	4Mx36(8Mx18)	S7T4436(18)T4M	QDR II+, ODT	1.8	450,400,333	4	2	165FBGA	Now
4Mx36(8Mx18)	S7T4436(18)U4M	QDR II+, ODT	1.8	550,450,400	4	2.5	165FBGA	Now	

\* Part Number : S7xxxxxxxx-etss

1. e : Package type  
E = 165FBGA
2. t : Temperature  
I = Industrial Temperature (-40~85C), C=Commercial Temperature (0~70C)
3. ss : Speed  
20/25/30/33/40/45/50/55/60/65  
=200/250/300/330/400/450/500/550/600/650MHz

# Sales Partners Locations



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