

EdgeX Performance Summary Collection

Resource usage:

Micro service	Image Footprint	Executable	Memory used at startup	CPU Usage at startup
edgex-core-consul	106.90 MB	0.00 MB	22.12 MB	5.21 %
edgex-mongo	360.86 MB	0.00 MB	38.77 MB	2.57 %
edgex-core-data	26.35 MB	18.48 MB	6.81 MB	1.43 %
edgex-core-metadata	19.14 MB	19.13 MB	5.73 MB	2.25 %
edgex-core-command	15.41 MB	15.41 MB	3.43 MB	0.00 %
edgex-support-logging	17.26 MB	16.52 MB	5.96 MB	1.52 %
edgex-support-notifications	19.17 MB	18.42 MB	3.90 MB	1.48 %
edgex-support-scheduler	18.51 MB	18.51 MB	3.62 MB	2.07 %
edgex-export-client	18.31 MB	18.30 MB	3.72 MB	1.59 %
edgex-export-distro	24.28 MB	16.42 MB	4.20 MB	0.00 %
edgex-support-rulesengine	149.25 MB	66.48 MB	225.87 MB	0.37 %
edgex-device-virtual	19.88 MB	19.85 MB	7.26 MB	0.08 %

Startup time using Mongo with security:

Micro service	Startup time(Binary)	Startup time(Container+Binary)	Startup time(Binary) without creating container	Startup time(Container+Binary) without creating container
edgex-core-data	778.24992ms	59.30788803100586 seconds	310.944383ms	41.3187620639801 seconds
edgex-core-metadata	1.101073348s	58.9203839302063 seconds	326.442106ms	39.1203179359436 seconds
edgex-core-command	236.977677ms	67.25502610206604 seconds	68.796762ms	47.04443693161011 seconds
edgex-support-logging	3.71857995s	51.84391403198242 seconds	186.515289ms	32.401840925216675 seconds
edgex-support-notifications	328.94453ms	56.48803997039795 seconds	115.680621ms	42.24447298049927 seconds
edgex-support-scheduler	970.049ms	67.41386795043945 seconds	202.336773ms	44.6540629863739 seconds
edgex-export-client	170.981121ms	65.43522310256958 seconds	74.737976ms	45.83474898338318 seconds
edgex-export-distro	1.680573841s	75.87603998184204 seconds	1.571576758s	57.328325033187866 seconds
edgex-support-rulesengine	55.842 seconds	137.1186559200287 seconds	55.052 seconds	115.47908091545105 seconds
edgex-device-virtual	2.856277749s	78.927973985672 seconds	3.116922718s	57.62300491333008 seconds
Total startup time		137.1186559200287 seconds		115.47908091545105 seconds

Startup time using Mongo without security:

Micro service	Startup time(Binary)	Startup time(Container+Binary)	Startup time(Binary) without creating container	Startup time(Container+Binary) without creating container
edgex-core-data	286.657566ms	37.938568115234375 seconds	360.647256ms	30.6693377494812 seconds
edgex-core-metadata	176.358273ms	41.57415509223938 seconds	266.260268ms	31.848432779312134 seconds
edgex-core-command	145.364507ms	45.935307025909424 seconds	148.463485ms	36.26100277900696 seconds
edgex-support-logging	2.52546526s	31.319793939590454 seconds	357.848906ms	21.24169898033142 seconds
edgex-support-notifications	123.720479ms	40.612534046173096 seconds	1.599572788s	30.032980918884277 seconds
edgex-support-scheduler	399.857518ms	40.1566059589386 seconds	565.173249ms	30.44274878501892 seconds
edgex-export-client	134.227528ms	44.33975696563721 seconds	123.535394ms	35.07139587402344 seconds
edgex-export-distro	1.138807708s	50.45225691795349 seconds	1.167244784s	40.89861989021301 seconds
edgex-support-rulesengine	73.785 seconds	94.33507108688354 seconds	67.411 seconds	88.27203798294067 seconds
edgex-device-virtual	1.556015194s	51.98914694786072 seconds	1.053821056s	41.47395777023315 seconds
Total startup time		94.33507108688354 seconds		88.27203798294067 seconds

Startup time using Redis without security:

Micro service	Startup time(Binary)	Startup time(Container+Binary)	Startup time(Binary) without creating container	Startup time(Container+Binary) without creating container
edgex-core-data	96.428657ms	42.83212423324585 seconds	82.483029ms	30.031466484069824 seconds
edgex-core-metadata	107.502037ms	44.01581025123596 seconds	57.560595ms	29.06555438041687 seconds
edgex-core-command	54.372732ms	49.85120224952698 seconds	81.092956ms	36.92653942108154 seconds
edgex-support-logging	73.76709ms	37.244463205337524 seconds	119.308648ms	22.967694520950317 seconds
edgex-support-notifications	114.126581ms	45.633098125457764 seconds	102.426302ms	30.280593395233154 seconds
edgex-support-scheduler	127.512789ms	51.33267021179199 seconds	90.741172ms	33.590964555740356 seconds
edgex-export-client	98.395459ms	47.97050714492798 seconds	75.122484ms	34.68052649497986 seconds
edgex-export-distro	1.141860404s	56.347241163253784 seconds	1.101715526s	39.33738851547241 seconds
edgex-support-rulesengine	53.483 seconds	115.0007872581482 seconds	51.008 seconds	96.71994233131409 seconds
edgex-device-virtual	911.592994ms	58.65682125091553 seconds	759.320776ms	43.63112449645996 seconds
Total startup time		115.0007872581482 seconds		96.71994233131409 seconds

Startup time using Mongo with security(exclude rulesengine):

Micro service	Startup time(Binary)	Startup time(Container+Binary)	Startup time(Binary) without creating container	Startup time(Container+Binary) without creating container
edgex-core-data	739.15183ms	60.515894651412964 seconds	333.521481ms	42.40040826797485 seconds
edgex-core-metadata	618.893123ms	56.13958263397217 seconds	743.376817ms	40.26829814910889 seconds
edgex-core-command	869.594596ms	65.37675070762634 seconds	128.632321ms	45.572975158691406 seconds
edgex-support-logging	1.803436865s	41.37283658981323 seconds	185.871424ms	32.20257306098938 seconds
edgex-support-notifications	1.11631575s	59.54512977600098 seconds	685.290344ms	41.834402084350586 seconds
edgex-support-scheduler	321.277614ms	63.77667570114136 seconds	344.044697ms	47.221779108047485 seconds
edgex-export-client	396.790506ms	65.55513167381287 seconds	181.116748ms	48.59794020652771 seconds
edgex-export-distro	1.139451692s	71.49586176872253 seconds	1.21332457s	52.80646324157715 seconds
edgex-device-virtual	1.230272865s	71.99656367301941 seconds	1.427175913s	52.04183912277222 seconds
Total startup time		71.99656367301941 seconds		52.80646324157715 seconds

Startup time using Mongo without security (exclude rulesengine):

Micro service	Startup time(Binary)	Startup time(Container+Binary)	Startup time(Binary) without creating container	Startup time(Container+Binary) without creating container
edgex-core-data	440.778649ms	31.202776432037354 seconds	201.079217ms	26.110524654388428 seconds
edgex-core-metadata	147.236608ms	32.65823745727539 seconds	202.485027ms	23.93409657478325 seconds
edgex-core-command	146.090039ms	35.93581748008728 seconds	58.07988ms	29.70513367652893 seconds
edgex-support-logging	1.225233696s	25.346392393112183 seconds	1.296970378s	19.738091468811035 seconds
edgex-support-notifications	96.072402ms	31.724525451660156 seconds	226.38287ms	24.101958513259888 seconds

edgex-support-scheduler	175.291355ms	30.415725469589233 seconds	180.109826ms	25.202449560165405 seconds
edgex-export-client	167.809836ms	35.49392652511597 seconds	92.372882ms	28.79516363143921 seconds
edgex-export-distro	1.145237808s	41.1539785861969 seconds	1.063221897s	33.630128622055054 seconds
edgex-device-virtual	1.080523443s	40.24829339981079 seconds	785.934243ms	34.41953253746033 seconds
Total startup time		41.1539785861969 seconds		34.41953253746033 seconds

Startup time using Redis without security (exclude rulesengine):

Micro service	Startup time(Binary)	Startup time(Container+Binary)	Startup time(Binary) without creating container	Startup time(Container+Binary) without creating container
edgex-core-data	75.938154ms	30.95302391052246 seconds	73.903554ms	25.71847891807556 seconds
edgex-core-metadata	70.779226ms	31.969071865081787 seconds	56.761626ms	26.808334827423096 seconds
edgex-core-command	75.780847ms	37.549866914749146 seconds	72.322015ms	33.1673789024353 seconds
edgex-support-logging	95.373341ms	25.256231784820557 seconds	81.850292ms	19.429451942443848 seconds
edgex-support-notifications	100.297352ms	33.07145690917969 seconds	71.839016ms	27.91017484664917 seconds
edgex-support-scheduler	310.228225ms	38.53874397277832 seconds	90.945251ms	32.375319957733154 seconds
edgex-export-client	81.98676ms	35.42156982421875 seconds	63.674745ms	31.16693377494812 seconds
edgex-export-distro	1.106680632s	43.391597747802734 seconds	1.137306145s	38.89554786682129 seconds
edgex-device-virtual	1.813483683s	45.5304877580261 seconds	815.858022ms	39.330633878707886 seconds
Total startup time		45.5304877580261 seconds		39.330633878707886 seconds

Startup time using Redis(deploy one by one):

Micro service	Startup time(Binary)	Startup time(Container+Binary)	Startup time(Binary) without creating container	Startup time(Container+Binary) without creating container
edgex-core-data	70.617182ms	14.97071623802185 seconds	57.648156ms	11.862028121948242 seconds
edgex-core-metadata	79.400997ms	14.72551155090332 seconds	79.766891ms	11.275583505630933 seconds
edgex-core-command	54.173625ms	15.079585075378418 seconds	122.742259ms	11.493017196655273 seconds
edgex-support-logging	56.865156ms	14.227190971374512 seconds	125.60924ms	11.787714004516602 seconds
edgex-support-notifications	58.508487ms	14.467178583145142 seconds	109.971973ms	11.476103067398071 seconds
edgex-support-scheduler	124.782381ms	17.724743366241455 seconds	812.35364ms	14.901482582092285 seconds
edgex-support-rulesengine	52.939 seconds	72.1869695186615 seconds	50.761 seconds	67.2396228313446 seconds
edgex-export-client	73.917692ms	14.90073037147522 seconds	109.744025ms	12.34822255706787 seconds
edgex-export-distro	1.101320807s	15.916998147964478 seconds	1.096545179s	13.280555725097656 seconds
edgex-device-virtual	1.283197681s	16.09994149208069 seconds	939.850457ms	13.072793006896973 seconds

Startup time using Mongo(deploy one by one):

Micro service	Startup time(Binary)	Startup time(Container+Binary)	Startup time(Binary) without creating container	Startup time(Container+Binary) without creating container
edgex-core-data	146.47372ms	15.119553565979004 seconds	145.44214ms	11.953656911849976 seconds
edgex-core-metadata	171.498973ms	15.011924266815186 seconds	132.581772ms	11.97984266281128 seconds
edgex-core-command	67.740787ms	15.165651798248291 seconds	97.562069ms	11.969743728637695 seconds
edgex-support-logging	194.562129ms	13.349154710769653 seconds	160.793929ms	12.625281810760498 seconds
edgex-support-notifications	96.3516ms	14.74294638633728 seconds	138.111968ms	11.872575044631958 seconds
edgex-support-scheduler	191.08432ms	18.299813985824585 seconds	1.506065446s	16.139261722564697 seconds
edgex-support-rulesengine	50.783 seconds	70.14687585830688 seconds	52.23 seconds	68.95912075042725 seconds
edgex-export-client	101.070298ms	15.220701694488525 seconds	125.536509ms	11.975260972976685 seconds
edgex-export-distro	1.062326987s	16.79201889038086 seconds	1.195343678s	13.81741452217102 seconds
edgex-device-virtual	1.808834241s	17.02987813949585 seconds	1.040532244s	13.247725486755371 seconds

Ping API latency:

Micro service	response body	response time
edgex-core-data	pong	12.772 ms
edgex-core-metadata	pong	8.773 ms
edgex-core-command	pong	8.586 ms
edgex-support-scheduler	pong	8.721 ms
edgex-support-logging	pong	9.233 ms
edgex-support-rulesengine	pong	19.187 ms
edgex-support-notifications	pong	10.134 ms
edgex-export-client	pong	8.047 ms
edgex-export-distro	pong	7.986 ms
edgex-device-virtual	1.0.0	7.911 ms

Measure event exported time using Mongo:

The table shows end to end period of the 5 events as calculation samples extracted from core-data according to the 3 device names

Device	Event exported time (pushed - origin)				
Random-Integer-Device	24 ms (1565775983461 - 1565775983437)	18 ms (1565775983388 - 1565775983370)	18 ms (1565775983261 - 1565775983243)	28 ms (1565775983212 - 1565775983184)	25 ms (1565775968398 - 1565775968373)
Random-Boolean-Device	20 ms (1565775978564 - 1565775978544)	13 ms (1565775968525 - 1565775968512)	18 ms (1565775958495 - 1565775958477)	70 ms (1565775948509 - 1565775948439)	21 ms (1565775938341 - 1565775938320)
Random-Float-Device	153 ms (1565775968108 - 1565775967955)	70 ms (1565775968073 - 1565775968003)	22 ms (1565775937996 - 1565775937974)	24 ms (1565775937936 - 1565775937912)	95 ms (1565775907969 - 1565775907874)

Measure event exported time using Redis:

The table shows end to end period of the 5 events as calculation samples extracted from core-data according to the 3 device names

Device	Event exported time (pushed - origin)				
Random-Integer-Device	24 ms (1565775527340 - 1565775527316)	19 ms (1565775527374 - 1565775527355)	15 ms (1565775527417 - 1565775527402)	20 ms (1565775527465 - 1565775527445)	13 ms (1565775542418 - 1565775542405)
Random-Boolean-Device	N/A	9 ms (1565775532508 - 1565775532499)	11 ms (1565775542574 - 1565775542563)	8 ms (1565775552602 - 1565775552594)	13 ms (1565775562727 - 1565775562714)
Random-Float-Device	10 ms (1565775542335 - 1565775542325)	10 ms (1565775542374 - 1565775542364)	14 ms (1565775572376 - 1565775572362)	16 ms (1565775572439 - 1565775572423)	34 ms (1565775602432 - 1565775602398)