Symbol AAOI	Company Applied Optoelectronics Inc.		Symbol Company CSCO Cisco Systems Inc.	Tag Communication Equipment	Symbo IIVI	ol Company II-VI Incorporated	Tag Scientific & Technical Instruments	Symbol NSIT	l Company Insight Enterprises Inc.	Tag Information Technology Services	SPI SPI Energy Co. Ltd. SPLK Splunk Inc.	Solar Software - Application
AAPL ABIL	Applied Optoblectronics inc. Apple Inc. Ability Inc.	Consumer Electronics	CSGS CSG Systems Inc. CSIQ Canadian Solar Inc.	Software - Infrastructure Solar	IMI IMMR	Intermolecular Inc. Immersion Corporation	Semiconductor Equipment & Materials	NSYS NTAP	· · · · · · · · · · · · · · · · · · ·	Electronic Components Data Storage	SPNS Sapiens International Corporation N.V. SPOT Spotify Technology S.A.	Software - Application Software - Infrastructure Internet Content & Information
ACIA ACIW	Acacia Communications Inc. ACI Worldwide Inc.	Communication Equipment Software - Application	CSLT Castlight Health Inc. Class B CSOD Cornerstone OnDemand Inc.	Software - Application Software - Application	IMOS IMPV	ChipMOS TECHNOLOGIES INC. Imperva Inc.	Semiconductors Software - Application	NTCT NTES	NetScout Systems Inc. NetEase Inc.	Software - Application Internet Content & Information	SPRT Support.com Inc. SPSC SPS Commerce Inc.	Software - Infrastructure Software - Application
ACLS ACMR	Axcelis Technologies Inc. ACM Research Inc.	Semiconductor Equipment & Materials Semiconductor Equipment & Materials	CSPI CSP Inc. CTG Computer Task Group Incorporated CTK Computer Task Group Incorporated	Information Technology Services Information Technology Services	IMTE INAP	Integrated Media Technology Limited Internap Corporation	Software - Application	NTGA	NETGEAR Inc.	Communication Equipment Communication Equipment	SPWR SunPower Corporation SQ Square Inc. Class A	Solar Software - Application
ACN ACXM ADBE	Accenture plc Class A (Ireland) Acxiom Holdings Inc. Adobe Inc.	Information Technology Services Information Technology Services Software - Application	CTK CooTek (Cayman) Inc. American Depositary Shares each representing 50 Class A CTRL Control4 Corporation CTS CTS Corporation	Software - Application Electronic Components Electronic Components	INFN INFY INOD	Infinera Corporation Infosys Limited American Depositary Shares Innodata Inc.	Information Technology Services	NTIP NTNX NTWK		Communication Equipment Software - Infrastructure Software - Application	SQNS Sequans Communications S.A. American Depositary Shares each representing one SREV ServiceSource International Inc. SSC Seven Stars Cloud Group Inc.	Semiconductors Software - Infrastructure Software - Application
ADI ADSK	Analog Devices Inc. Autodesk Inc.	• •	CTSH Cognizant Technology Solutions Corporation CTXS Citrix Systems Inc.	Information Technology Services Software - Infrastructure	INOV INPX	Inovalon Holdings Inc. Inpixon	Health Information Services Software - Application	NUAN NVDA	Nuance Communications Inc.	Software - Application Semiconductors	SSNC SS&C Technologies Holdings Inc. SSNT SilverSun Technologies Inc.	Software - Infrastructure Software - Application
ADTN AEHR	ADTRAN Inc. Aehr Test Systems	Communication Equipment & Materials	CUI CUI Global Inc. CVET Covetrus Inc.	Electronic Components Software - Application	INS INSG	Intelligent Systems Corporation Inseego Corp.	Diversified Industrials Communication Equipment	NVEC NVMI	NVE Corporation Nova Measuring Instruments Ltd.	Semiconductors Semiconductor Equipment & Materials	SSTI ShotSpotter Inc. SSTK Shutterstock Inc.	Software - Application Internet Content & Information
AEIS AEMD	Advanced Energy Industries Inc. Aethlon Medical Inc. ADDvantage Technologies Group Inc.	• • • • • • • • • • • • • • • • • • •	CVLT Commvault Systems Inc. CVON ConvergeOne Holdings Inc. CY Cypress Semiconductor Corporation	Software - Application Information Technology Services Semiconductors	INST INTC INTT	Instructure Inc. Intel Corporation inTest Corporation	Software - Application Semiconductors Semiconductors	NVT NXGN NXPI	nVent Electric plc NextGen Healthcare Inc. NXP Semiconductors N.V.	Electronic Components Health Information Services Semiconductors	SSYS Stratasys Ltd. ST Sensata Technologies Holding plc STM STMicroelectronics N.V.	Computer Systems Scientific & Technical Instruments Semiconductors
AEYE AGMH	AddioEye Inc. AGM Group Holdings Inc.	Software - Application	CYBE CyberOptics Corporation CYBR CyberArk Software Ltd.	Scientific & Technical Instruments Software - Infrastructure	INTU INVE	Intuit Inc. Identiv Inc.	Software - Application	OCC OCLR	Optical Cable Corporation Oclaro Inc.	Communication Equipment Semiconductors	STMP Stamps.com Inc. STNE StoneCo Ltd.	Software - Application Software - Application
AGYS AIRG	Agilysys Inc. Airgain Inc.	Software - Application Communication Equipment	CYOU Changyou.com Limited CYRN CYREN Ltd.	Electronic Gaming & Multimedia Software - Infrastructure	INXN IOTS	InterXion Holding N.V. (0.01 nominal value) Adesto Technologies Corporation	Internet Content & Information Semiconductor Memory	OESX OHGI		Electronic Components	STRM Streamline Health Solutions Inc. STX Seagate Technology PLC	Health Information Services Data Storage
AKAM AKTS	Akamai Technologies Inc. Akoustis Technologies Inc.	Communication Equipment	DAIO Data I/O Corporation DAKT Daktronics Inc.	Electronic Components Computer Systems	IPDN IPGP	Professional Diversity Network Inc. IPG Photonics Corporation	Internet Content & Information Semiconductor Equipment & Materials	OIIM OKTA		Electronic Components Software - Infrastructure	SUNW Sunworks Inc. SVMK SVMK Inc.	Solar Software - Application
ALLT ALOT ALRM	Allot Ltd. AstroNova Inc. Alarm.com Holdings Inc.		DATA Tableau Software Inc. Class A DAVA Endava plc American Depositary Shares (each representing one Class A) DBD Diebold Nixdorf Incorporated	Software - Application Software - Infrastructure Software - Application	IPHI IQ IRBT	Inphi Corporation \$0.001 par value iQIYI Inc. iRobot Corporation	Semiconductors Internet Content & Information Consumer Electronics	OLED OMCL ON	Universal Display Corporation Omnicell Inc. ON Semiconductor Corporation	Semiconductor Equipment & Materials Health Information Services Semiconductors	SVT Servotronics Inc. SWCH Switch Inc. Class A SWI SolarWinds Corporation	Electronic Components Information Technology Services Software - Infrastructure
ALTR ALYA	Altair Engineering Inc. Alithya Group inc.	Software - Infrastructure	DBX Dropbox Inc DCAR DropCar Inc.	Software - Infrastructure Software - Application	ISDR ISNS	Issuer Direct Corporation Image Sensing Systems Inc.	Information Technology Services Software - Application	OPRA OPRX	Opera Limited OptimizeRx Corporation	Internet Content & Information Health Information Services	SWIR Sierra Wireless Inc. SWKS Skyworks Solutions Inc.	Communication Equipment Semiconductors
AMAT AMBA	Applied Materials Inc. Ambarella Inc.	Semiconductor Equipment & Materials Semiconductor Equipment & Materials	DDD 3D Systems Corporation DELL Dell Technologies Inc. Class C	Computer Systems Software - Infrastructure	IT ITI	Gartner Inc. Iteris Inc.	Information Technology Services Communication Equipment	ORBK ORCL	Orbotech Ltd. Oracle Corporation	Software - Infrastructure	SYKE Sykes Enterprises Incorporated SYMC Symantec Corporation	Information Technology Services Software - Application
AMBR AMD	Amber Road Inc. Advanced Micro Devices Inc.	Semiconductors [DELL# Dell Technologies Inc. Class C When Issued DGII Digi International Inc.	Software - Infrastructure Communication Equipment	ITRI ITRN	Itron Inc. Ituran Location and Control Ltd.	Scientific & Technical Instruments Communication Equipment	OSIS OSPN	OSI Systems Inc. OneSpan Inc.	Electronic Components Software - Application	SYNA Synaptics Incorporated SYNC Synacor Inc.	Software - Application Internet Content & Information
AMKR AMOT AMRH	Amkor Technology Inc. Allied Motion Technologies Inc. Ameri Holdings Inc.	Electronic Components	DIOD Diodes Incorporated DLPN Dolphin Entertainment Inc. DMRC Digimarc Corporation	Semiconductors Internet Content & Information Information Technology Services	IVAC IZEA	Intevac Inc. IZEA Worldwide Inc. JA Solar Holdings Co. Ltd.	Electronic Components Internet Content & Information Solar	OSS OTEX PAGS	One Stop Systems Inc. Open Text Corporation PagSeguro Digital Ltd. Class A	Computer Systems Software - Application Software - Infrastructure	SYNT Syntel Inc. TACT TransAct Technologies Incorporated TAIT Taitron Components Incorporated	Information Technology Services Computer Systems Electronics Distribution
AMSC AMSWA	American Superconductor Corporation American Software Inc. Class A Common Stock	Electronic Components	DOCU DocuSign Inc. DOMO Domo Inc.	Software - Application Software - Application	JBL JCOM	Jabil Inc. j2 Global Inc.	Contract Manufacturers Software - Infrastructure	PANW PAR	Palo Alto Networks Inc. PAR Technology Corporation	Software - Application Software - Application	TAOP Taoping Inc. TC TuanChe Limited	Information Technology Services Internet Content & Information
ANET ANGI	Arista Networks Inc. ANGI Homeservices Inc.	Computer Systems	DOX Amdocs Limited DPW DPW Holdings Inc.	Software - Infrastructure Electronic Components	JCS JD	Communications Systems Inc. JD.com Inc.	Communication Equipment Internet Content & Information	PAYC PCOM	Paycom Software Inc. Points International Ltd.	Software - Application Internet Content & Information	TCCO Technical Communications Corporation TCX Tucows Inc.	Communication Equipment Internet Content & Information
ANSS ANY	ANSYS Inc. Sphere 3D Corp.	• •	DAQO New Energy Corp. American Depositary Shares each representing five The Descartes Systems Group Inc.	Semiconductor Equipment & Materials Software - Application	JG JKS	Aurora Mobile Limited JinkoSolar Holding Company Limited American Depositary Shares (each representing 4)	Software - Application Solar	PCTI PCTY	PC-Tel Inc. Paylocity Holding Corporation	Communication Equipment Software - Application	TDC Teradata Corporation TDOC Teladoc Health Inc. TDV Taladama Taladama Taladama Islanda Isl	Data Storage Health Information Services
AOSL APH APPE	Alpha and Omega Semiconductor Limited Amphenol Corporation AppFolio Inc.	Electronic Components	DSPG DSP Group Inc. DTRM Determine Inc. DVMT Dell Technologies Inc. Class V	Semiconductors Software - Infrastructure Software - Infrastructure	JNPR JT JTPV	Juniper Networks Inc. Jianpu Technology Inc. American depositary shares each two representing five Class A JetPay Corporation	Communication Equipment Internet Content & Information Software - Infrastructure	PDFS PEGA	Park City Group Inc. PDF Solutions Inc. Pegasystems Inc.	Software - Application Software - Application Software - Application	TDY Teledyne Technologies Incorporated TEAM Atlassian Corporation Plc TECD Tech Data Corporation	Scientific & Technical Instruments Software - Application Computer Distribution
APPN APPS	Appirone inc. Appian Corporation Digital Turbine Inc.	• •	DWCH Datawatch Corporation DXC DXC Technology Company	Software - Application Information Technology Services	KE KEM	Kimball Electronics Inc. KEMET Corporation	Electronic Components Electronic Components	PERI PFPT	Perion Network Ltd Proofpoint Inc.	Internet Content & Information Software - Application	TEL TE Connectivity Ltd. New Switzerland Registered Shares TENB Tenable Holdings Inc.	Electronic Components Software - Infrastructure
APTI APWC	Apptio Inc. Asia Pacific Wire & Cable Corporation Limited	Software - Application Electronics Distribution	DYSL Dynasil Corporation of America DZSI DASAN Zhone Solutions Inc.	Scientific & Technical Instruments Communication Equipment	KEYS KEYW	Keysight Technologies Inc. The KEYW Holding Corporation	Scientific & Technical Instruments Software - Application	PHUN PI	Phunware Inc. Impinj Inc.	Conglomerates Electronic Components	TER Teradyne Inc. TESS TESSCO Technologies Incorporated	Semiconductor Equipment & Materials Communication Equipment
AQ ARCE	Aquantia Corp. Arco Platform Limited	Semiconductors Software - Application	EA Electronic Arts Inc. EB Eventbrite Inc. Class A	Electronic Gaming & Multimedia Software - Application	KLAC KLIC	KLA-Tencor Corporation Kulicke and Soffa Industries Inc.	Semiconductor Equipment & Materials Semiconductor Equipment & Materials	PINC PKE	Premier Inc. Park Electrochemical Corporation	Health Information Services Semiconductor Equipment & Materials	TISA Top Image Systems Ltd. TIVO TiVo Corporation	Software - Application Software - Application
ARLO ARLO#	Arlo Technologies Inc. Arlo Technologies Inc. Additional Shares When Issued ARRIS International plo	Software - Infrastructure	EBIX Ebix Inc. ECOM ChannelAdvisor Corporation EDGW Edgewater Technology Inc.	Software - Application Software - Application Information Technology Services	KN KODK KODK		Consumer Electronics	PLAB PLAN PLPC	Anaplan Inc.	Semiconductor Equipment & Materials Software - Infrastructure Electronic Components	TLND Talend S.A. TLRA Telaria Inc. TME Tencent Music Entertainment Group American Depositary Shares each representing two Class	Software - Infrastructure Software - Application A Internet Content & Information
ARRS ARW ASML	ARRIS International plc Arrow Electronics Inc. ASML Holding N.V.	Electronics Distribution E	EDGW Edgewater Technology Inc. EFII Electronics for Imaging Inc. EGAN eGain Corporation	Information Technology Services Computer Systems Software - Application	KODK KODK KONE	+A Eastman Kodak Company Wt Exp 135%	Consumer Electronics Consumer Electronics Telecom Services	PLPC PLT PLUG	Preformed Line Products Company Plantronics Inc. Plug Power Inc.	Electronic Components Communication Equipment Electronic Components	TME Tencent Music Entertainment Group American Depositary Shares each representing two Class TNAV Telenav Inc. TNTR Tintri Inc.	A Internet Content & Information Internet Content & Information Software - Application
ASUR ASX	Asure Software Inc ASE Technology Holding Co. Ltd. American Depositary Shares (each representing Two)	Software - Application Semiconductors	EGAN EGAIL Corporation EGOV NIC Inc. EIGI Endurance International Group Holdings Inc.	Software - Application Software - Application	KOPN KOSS	Kopin Corporation Koss Corporation	Semiconductors Consumer Electronics	PLUS PLXS	ePlus inc. Plexus Corp.	Software - Application Contract Manufacturers	TRHC Tabula Rasa HealthCare Inc. TRMB Trimble Inc.	Health Information Services Scientific & Technical Instruments
ASYS ATEN	Amtech Systems Inc. A10 Networks Inc.	Semiconductor Equipment & Materials Software - Infrastructure	ELLI Ellie Mae Inc. ELON Echelon Corporation	Software - Application Communication Equipment	KTCC KVHI	Key Tronic Corporation KVH Industries Inc.	Computer Systems Communication Equipment	PNTR POWI	Pointer Telocation Ltd. Power Integrations Inc.	Communication Equipment Semiconductors	TRNS Transcat Inc. TRT Trio-Tech International	Scientific & Technical Instruments Semiconductor Equipment & Materials
ATHM ATHN	Autohome Inc. American Depositary Shares each representing one class A. athenahealth Inc.	Health Information Services	ELSE Electro-Sensors Inc. ELTK Eltek Ltd.	Scientific & Technical Instruments Contract Manufacturers	KYO LASR	Kyocera Corporation nLIGHT Inc.	Consumer Electronics Semiconductors	PPSI PRCP	Pioneer Power Solutions Inc. Perceptron Inc.	Electronic Components Scientific & Technical Instruments	TSEM Tower Semiconductor Ltd. TSM Taiwan Semiconductor Manufacturing Company Ltd.	Semiconductors Semiconductors
ATOM ATTU	Atomera Incorporated Attunity Ltd. Activision Blizzard Inc	Software - Application	EMAN eMagin Corporation EMKR EMCORE Corporation ENPH Enphase Energy Inc.	Semiconductor Equipment & Materials Semiconductors Semiconductor Equipment & Materials	LDOS LEAF	Leidos Holdings Inc. Leaf Group Ltd. SemiLEDS Corporation	Information Technology Services Internet Content & Information Semiconductor Memory	PRFT PRGS PRKR	Perficient Inc. Progress Software Corporation ParkerVision Inc.	Information Technology Services Software - Application Semiconductors	TSRI TSR Inc. TTD The Trade Desk Inc. TTGT TechTarget Inc.	Software - Application Software - Application Internet Content & Information
AUDC AUO	Activision Blizzard Inc AudioCodes Ltd. AU Optronics Corp American Depositary Shares	Communication Equipment E	ENPH Enphase Energy Inc. ENR Energizer Holdings Inc. ENR-A Energizer Holdings Inc. 7.50% Series A Mandatory Convertible Preferred Stock	Electronic Components Electronic Components	LEXEA LEXEA	Liberty Expedia Holdings Inc. Series A Common Stock Liberty Expedia Holdings Inc. Series B Common Stock	Internet Content & Information Internet Content & Information	PRO PRSP	PROS Holdings Inc. Perspecta Inc.	Software - Application Information Technology Services	TTMI Technologies Inc. TTWO Take-Two Interactive Software Inc.	Contract Manufacturers Electronic Gaming & Multimedia
AUTO AVGO	AutoWeb Inc. Broadcom Inc.	Internet Content & Information	ENS EnerSys ENTG Entegris Inc.	Electronic Components Semiconductor Equipment & Materials	LFGR LFUS	Leaf Group Ltd. Littelfuse Inc.	Internet Content & Information Electronics Distribution	PRSS PS	CafePress Inc. Pluralsight Inc.	Internet Content & Information Software - Application	TWLO Twilio Inc. Class A TWOU 2U Inc.	Software - Application Software - Infrastructure
AVID AVLR	Avid Technology Inc. Avalara Inc.	Software - Application	EPAM EPAM Systems Inc. EPAY Bottomline Technologies Inc.	Information Technology Services Software - Application	LGL LINK	LGL Group Inc. (The) Interlink Electronics Inc.	Electronic Components Electronic Components	PSDO PSTG	Presidio Inc. Pure Storage Inc. Class A	Information Technology Services Data Storage	TWTR Twitter Inc. TXN Texas Instruments Incorporated	Internet Content & Information Semiconductors
AVNW AVT	Aviat Networks Inc. Avnet Inc.	Electronics Distribution E	ERIC Ericsson ESE ESCO Technologies Inc.	Communication Equipment Scientific & Technical Instruments	LITE	Lumentum Holdings Inc. Luokung Technology Corp	Communication Equipment Software - Application	PT PTC	Pintec Technology Holdings Limited PTC Inc.	Software - Application Software - Application	TYL Tyler Technologies Inc. TYPE Monotype Imaging Holdings Inc.	Software - Application Software - Application
AVX AWRE AWSM	AVX Corporation Aware Inc. Cool Holdings Inc.	Electronic Components Software - Application Communication Equipment	ESIO Electro Scientific Industries Inc. ESP Espey Mfg. & Electronics Corp. ESTC Elastic N.V.	Semiconductors Electronic Components Software - Application	LLNW	Link Motion Inc. American Depositary Shares each representing five Class A Limelight Networks Inc. LINE Corporation American Depositary Shares (each representing one share of)	Software - Application Internet Content & Information Software - Application	PVTL PXLW PYDS		Software - Application Semiconductors Software - Infrastructure	TZOO Travelzoo UAVS AgEagle Aerial Systems Inc. UBNT Ubiquiti Networks Inc.	Internet Content & Information Computer Systems Communication Equipment
AXTI AYI	AXT Inc Acuity Brands Inc.	Semiconductor Equipment & Materials	EVBG Everbridge Inc. EVER EverQuote Inc.	Software - Application Internet Content & Information	LOGI LOGM	Logitech International S.A. LogMeln Inc.	Computer Systems Software - Application	QADA QADB	QAD Inc.	Software - Application Software - Application	UCTT Ultra Clean Holdings Inc. UEIC Universal Electronics Inc.	Semiconductor Equipment & Materials Consumer Electronics
AYX AZPN	Alteryx Inc. Class A Aspen Technology Inc.	Software - Application	EVH Evolent Health Inc Class A EVOL Evolving Systems Inc.	Health Information Services Software - Application	LORL LOV	Loral Space and Communications Inc. Spark Networks Inc. American Depositary Shares (each representing one-tenth of an)	Communication Equipment Internet Content & Information	QBAK QCOM	Qualstar Corporation QUALCOMM Incorporated	Electronic Components Semiconductors	UIS Unisys Corporation ULTI The Ultimate Software Group Inc.	Information Technology Services Software - Infrastructure
BAND BB	Bandwidth Inc. BlackBerry Limited	Communication Equipment	EVOP EVO Payments Inc. EVTC Evertec Inc.	Software - Infrastructure Software - Infrastructure	LPL LPSN	LG Display Co Ltd AMERICAN DEPOSITORY SHARES LivePerson Inc.	Consumer Electronics Software - Infrastructure	QLYS QNST	Qualys Inc. QuinStreet Inc.	Software - Application Internet Content & Information	UMC United Microelectronics Corporation (NEW) UPLD Upland Software Inc.	Semiconductors Software - Application
BBOX BCOV BDC	Black Box Corporation Brightcove Inc. Belden Inc	Software - Application	EXFO EXFO Inc EXTR Extreme Networks Inc. FARO FARO Technologies Inc.	Communication Equipment Communication Equipment Scientific & Technical Instruments	LPTH LRAD LRCX	·	Electronic Components Scientific & Technical Instruments Semiconductor Equipment & Materials	QRVO QSII QTNA	Quality Systems Inc.		UPWK Upwork Inc. USAT USA Technologies Inc. USATP USA Technologies Inc. Preferred Stock	Internet Content & Information Software - Infrastructure Software - Infrastructure
BDC-B BDR	Belden Inc Depositary Shares Series B Blonder Tongue Laboratories Inc.	Electronic Components F	FARO Technologies inc. FB Facebook Inc. FEIM Frequency Electronics Inc.	Internet Content & Information Communication Equipment	LSCC LTRPA	Lattice Semiconductor Corporation	Semiconductors Internet Content & Information	QTRH QTT	Quarternia Communications inc. Quarterhill Inc. Qutoutiao Inc.	Communication Equipment Internet Content & Information	UXIN Uxin Limited VCRA Vocera Communications Inc.	Internet Content & Information Communication Equipment
BELFA BELFB	Bel Fuse Inc. Class A Common Stock Bel Fuse Inc. Class B Common Stock	Electronic Components F	FENG Phoenix New Media Limited American Depositary Shares each representing 8 Class A. FEYE FireEye Inc.	Internet Content & Information Software - Application	LTRPE LTRX	Liberty TripAdvisor Holdings Inc. Series B Common Stock Lantronix Inc.	Internet Content & Information Communication Equipment	QTWO QUIK	Q2 Holdings Inc. QuickLogic Corporation	Software - Infrastructure Semiconductors	VECO Veeco Instruments Inc. VEEV Veeva Systems Inc. Class A	Semiconductor Equipment & Materials Health Information Services
BHE BIDU	Benchmark Electronics Inc. Baidu Inc.	Internet Content & Information F	FFIV F5 Networks Inc. FICO Fair Isaac Corproation	Software - Infrastructure Software - Infrastructure	LUNA LVHB	Luna Innovations Incorporated Innovator Lunt Low Vol/High Beta Tactical	Scientific & Technical Instruments Software - Application	QUMU RAMP	Qumu Corporation LiveRamp Holdings Inc.	Software - Application Information Technology Services	VERI Veritone Inc. VHC VirnetX Holding Corp	Software - Infrastructure Software - Infrastructure
BILI BITA	Bilibili Inc. Bitauto Holdings Limited American Depositary Shares (each representing one)		FIT Fitbit Inc. Class A FIVN Five9 Inc. FLEX Flex Ltd.	Scientific & Technical Instruments Software - Infrastructure Contract Manufacturers	LXFT LYTS	Luxoft Holding Inc. Class A LSI Industries Inc. MAM Software Group Inc.	Software - Application Electronic Components Software - Infrastructure	RBCN RCM RDVT	Rubicon Technology Inc. R1 RCM Inc. Red Violet Inc.	Semiconductor Equipment & Materials Health Information Services Software - Application	VIAV Viavi Solutions Inc. VICR Vicor Corporation VIOT Viomi Technology Co. Ltd	Communication Equipment Electronic Components Consumer Electronics
BKTI BL	Black Knight Inc. BK Technologies Inc. BlackLine Inc.		FLEX Flex Ltd. FLIR FLIR Systems Inc. FN Fabrinet	Scientific & Technical Instruments Consumer Electronics	MAMS MANH MANT	Manhattan Associates Inc.	Software - Infrastructure Software - Application Software - Application	RDWR RDWR REFR	Radware Ltd. Research Frontiers Incorporated	Communication Equipment Electronic Components	VISL Vislink Technologies Inc. VJET voxeljet AG American Depositary Shares each representing one-fifth of an/	Communication Equipment Computer Systems
BLIN BLKB	Bridgeline Digital Inc. Blackbaud Inc.	Software - Application F	FNJN Finjan Holdings Inc. FNSR Finisar Corporation	Software - Application Communication Equipment	MARK MATR	Remark Holdings Inc.	Internet Content & Information Software - Application	RELL RENN	Richardson Electronics Ltd.	Electronics Distribution Internet Content & Information	VMW Vmware Inc. Class A VNET 21Vianet Group Inc.	Software - Infrastructure Information Technology Services
BMI BNFT	Badger Meter Inc. Benefitfocus Inc.	Software - Application F	FORM FormFactor Inc. FORTY Formula Systems (1985) Ltd. ADS represents 1 ordinary shares	Semiconductors Information Technology Services	MAXR MB	MINDBODY Inc.	Communication Equipment Software - Application	RESN RFIL	RF Industries Ltd.	Semiconductors Electronic Components	VPG Vishay Precision Group Inc. VRNS Varonis Systems Inc.	Scientific & Technical Instruments Software - Infrastructure
BNSO BOX BOXL	Bonso Electronics International Inc. Box Inc. Class A Boxlight Corporation	Software - Infrastructure F	FRSX Foresight Autonomous Holdings Ltd. FSCT ForeScout Technologies Inc. FSLR First Solar Inc.	Scientific & Technical Instruments Software - Application Solar	MCHP MDB MDRX	MongoDB Inc.	Semiconductors Software - Application Software - Application	RGSE RHT RMBS	Real Goods Solar Inc. Red Hat Inc. Rambus Inc.	Solar Software - Application Semiconductor Memory	VRSN Verint Systems Inc. VRSN VeriSign Inc. VRTU Virtusa Corporation	Software - Application Internet Content & Information Information Technology Services
BRKS BRQS	Brooks Automation Inc. Borgs Technologies Inc.	Semiconductor Equipment & Materials F	FTEO FRONTEO Inc. FTNT Fortinet Inc.	Information Technology Services Software - Application	MDSO MEET	Medidata Solutions Inc. The Meet Group Inc.	Health Information Services Internet Content & Information	RMNI RNET	Rimini Street Inc. RigNet Inc.	Software - Application Communication Equipment	VSAT ViaSat Inc. VSH Vishay Intertechnology Inc.	Communication Equipment Semiconductors
BSQR BSTI	BSQUARE Corporation BEST Inc. American Depositary Shares each representing one Class A	Software - Application F Software - Infrastructure F	FTNW FTE Networks Inc. FTV Fortive Corporation	Communication Equipment Scientific & Technical Instruments	MEI MFGP	Methode Electronics Inc. Micro Focus Intl PLC ADS each representing One Ord Sh	Electronic Components Software - Application	RNG RNWK	Ringcentral Inc. Class A RealNetworks Inc.	Software - Application Electronic Gaming & Multimedia	VSLR Vivint Solar Inc. VTSI VirTra Inc.	Solar Electronic Gaming & Multimedia
BV BVSN	BrightView Holdings Inc. BroadVision Inc. Behacek & Wileex Enterprises Inc.	Software - Application	FTV-A Fortive Corporation 5.00% Mandatory Convertible Preferred Stock Series A GDDY GoDaddy Inc. Class A GDI Gardner Denver Holdings Inc.	Scientific & Technical Instruments Internet Content & Information	MGIC MIME	Magic Software Enterprises Ltd. Mimecast Limited Mitchen Industries Inc.	Software - Application Software - Infrastructure	ROG RP	Rogers Corporation RealPage Inc.	Electronic Components Software - Application	VUZI Vuzix Corporation VVPR VivoPower International PLC WATT Energous Corporation	Consumer Electronics Solar Electronic Components
CACI CA BW	Babcock & Wilcox Enterprises Inc. CA Inc. CACI International Inc. Class A	Electronic Components Software - Infrastructure Information Technology Services	GDI Gardner Denver Holdings Inc. GDS GDS Holdings Limited GIB CGI Inc.	Scientific & Technical Instruments Data Storage Information Technology Services	MIND MINDP MITK	Mitcham Industries Inc. Mitcham Industries Inc. Series A 9.00% Series A Cumulative Preferred Stock Mitek Systems Inc.	Scientific & Technical Instruments Scientific & Technical Instruments Software - Application	RPD RST RSYS	Rapid7 Inc. Rosetta Stone Inc. RadiSys Corporation	Software - Application Software - Application Computer Systems	WATT Energous Corporation WB Weibo Corporation WDAY Workday Inc.	Electronic Components Internet Content & Information Software - Application
CALX CAMP	Calix Inc CalAmp Corp.		GIGM GigaMedia Limited GILT Gilat Satellite Networks Ltd.	Electronic Gaming & Multimedia Communication Equipment	MITL MIXT	Mitel Networks Corporation MiX Telematics Limited American Depositary Shares each representing 25	Communication Equipment Software - Infrastructure	RTEC RUBI	Rudolph Technologies Inc. The Rubicon Project Inc.	Scientific & Technical Instruments Software - Infrastructure	WDC Western Digital Corporation WEB Web.com Group Inc.	Data Storage Internet Content & Information
CAMT CANG	Camtek Ltd. Cango Inc. American Depositary Shares each representing two (2) Class A	Semiconductor Equipment & Materials Internet Content & Information	GLOB Globant S.A. GLUU Glu Mobile Inc.	Information Technology Services Electronic Gaming & Multimedia	MJCO MKSI	Majesco MKS Instruments Inc.	Software - Application Scientific & Technical Instruments	RUN RVLT	Sunrun Inc. Revolution Lighting Technologies Inc.	Solar Electronic Components	WIRE Encore Wire Corporation WISA Summit Wireless Technologies Inc.	Electronic Components Semiconductors
CARB CARG	Carbonite Inc. Casa Systems Inc.	Internet Content & Information	GLW Corning Incorporated GOOG Alphabet Inc. GOOGL Alphabet Inc.	Electronic Components Internet Content & Information Internet Content & Information	MLAB MLNX MNDO	Mellanox Technologies Ltd.	Scientific & Technical Instruments Semiconductors Software - Infrastructure	SABR SAIC SAIL	Sabre Corporation SCIENCE APPLICATIONS INTERNATIONAL CORPORATION SailPoint Technologies Holdings Inc.	Information Technology Services Information Technology Services Software - Infrastructure	WIT Wipro Limited WIX Wix.com Ltd. WK Workiya Inc. Class A	Information Technology Services Internet Content & Information Software - Application
CASA CAVM CBAK	Casa Systems Inc. Cavium Inc. CBAK Energy Technology Inc.	Semiconductors	GOOGL Alphabet Inc. GPRO GoPro Inc. GRMN Garmin Ltd.	Internet Content & Information Consumer Electronics Scientific & Technical Instruments	MNDO MOBL MODN	MobileIron Inc.	Software - Infrastructure Software - Application Software - Application	SAIL SANM SAP		Software - Infrastructure Electronic Components Software - Application	WK Workiva Inc. Class A WORX SCWorx Corp. WSO Watsco Inc.	Software - Application Leisure Electronics Distribution
CBAT CBLK	CBAK Energy Technology Inc. Carbon Black Inc.	Electronic Components Software - Application	GRPN Groupon Inc. GRUB GrubHub Inc.	Internet Content & Information Internet Content & Information	MOMO MOSY	Momo Inc.	Internet Content & Information Semiconductors	SATS SCKT	EchoStar Corporation Socket Mobile Inc.	Communication Equipment Computer Systems	WSO.B Watsco Inc. Class B WSTG Wayside Technology Group Inc.	Electronics Distribution Computer Distribution
CCIH CCMP	ChinaCache International Holdings Ltd. Cabot Microelectronics Corporation	Internet Content & Information Content & Inf	GRVY GRAVITY Co. Ltd. GSB GlobalSCAPE Inc.	Electronic Gaming & Multimedia Software - Application	MOXC MPWR	Moxian Inc. Monolithic Power Systems Inc.	Internet Content & Information Semiconductors	SCON	Superconductor Technologies Inc. ScanSource Inc.	Semiconductor Equipment & Materials Computer Distribution	WSTL Westell Technologies Inc. WTT Wireless Telecom Group Inc.	Communication Equipment Communication Equipment
CDAY CDK	Ceridian HCM Holding Inc. CDK Global Inc. Cardivises Inc.		GSIT GSI Technology Inc. GSKY GreenSky Inc. GSUM Grideum Holding Inc.	Semiconductors Software - Infrastructure	MRAM MRCY	Mercury Systems Inc	Semiconductor Memory Computer Systems	SCWX SE	SecureWorks Corp. Sea Limited American Depositary Shares each representing one Class A	Software - Application Electronic Gaming & Multimedia Software - Application	WUBA 58.com Inc. American Depositary Shares each representing 2 Class A WYY WidePoint Corporation YCRA Years Corporation	Internet Content & Information Information Technology Services Semiconductor Equipment & Materials
CDLX CDNS CDW	Cardlytics Inc. Cadence Design Systems Inc. CDW Corporation	Software - Application	GSUM Gridsum Holding Inc. GVP GSE Systems Inc. GWRE Guidewire Software Inc.	Software - Application Software - Application Software - Infrastructure	MRIN MRVL MSFT	Marin Software Incorporated Marvell Technology Group Ltd. Microsoft Corporation	Software - Application Semiconductors Software - Infrastructure	SEAC SEDG SEND	SeaChange International Inc. SolarEdge Technologies Inc. SendGrid Inc.	Software - Application Solar Software - Infrastructure	XCRA Xcerra Corporation XELA Exela Technologies Inc. XGTI XG Technology Inc	Semiconductor Equipment & Materials Software - Infrastructure Communication Equipment
CERN CEVA	Corporation Cerner Corporation CEVA Inc.	Health Information Services Semiconductors	HBB Hamilton Beach Brands Holding Company Class A HDP Hortonworks Inc.	Consumer Electronics Software - Infrastructure	MSI MSN	Microsoπ Corporation Motorola Solutions Inc. Emerson Radio Corporation	Communication Equipment Consumer Electronics	SEND SFET SFUN	SendGrid Inc. Safe-T Group Ltd. Fang Holdings Limited American Depositary Shares	Software - Infrastructure Software - Application Internet Content & Information	XGTIW XG Technology Inc XGTIW XG Technology Inc Warrants (1 Wt & 824.40 to purchase 1 shr). XLNX Xilinx Inc.	Communication Equipment Communication Equipment Semiconductors
CGNX CHKP	Cognex Corporation Check Point Software Technologies Ltd.	Scientific & Technical Instruments Software - Application	HEAR Turtle Beach Corporation HIMX Himax Technologies Inc.	Communication Equipment Semiconductors	MSTR MTBC	MicroStrategy Incorporated MTBC Inc.	Software - Application Health Information Services	SGH SGLB	SMART Global Holdings Inc. Sigma Labs Inc.	Semiconductor Memory Information Technology Services	XNET Xunlei Limited XOXO XO Group Inc.	Software - Application Internet Content & Information
CIEN CISN	Ciena Corporation Cision Ltd.	Software - Application	HIVE Aerohive Networks Inc. HLIT Harmonic Inc.	Communication Equipment Communication Equipment	MTBCI MTCH	Match Group Inc.	Health Information Services Internet Content & Information	SGMA SGOC	SigmaTron International Inc. SGOCO Group Ltd	Contract Manufacturers Consumer Electronics	XPER Xperi Corporation XPLR Xplore Technologies Corp	Semiconductor Equipment & Materials Computer Systems
CLDR CLFD CLPS	Cloudera Inc. Clearfield Inc. CLPS Incorporation	Software - Application Communication Equipment Information Technology Services	HMI Huami Corporation American Depositary Shares each representing four Class A HMNY Helios and Matheson Analytics Inc HPE Hewlett Packard Enterprise Company	Scientific & Technical Instruments Information Technology Services Communication Equipment	MTLS MTSC MTSI		Software - Application Scientific & Technical Instruments Semiconductors	SHOP SIGM SILC	Shopify Inc. Class A Subordinate Sigma Designs Inc. Silicom Ltd	Software - Application Semiconductors Communication Equipment	XRX Xerox Corporation YELP Yelp Inc. YEXT Yext Inc.	Information Technology Services Internet Content & Information Software - Infrastructure
CLPS CLRO CLS	CLPS incorporation ClearOne Inc. Celestica Inc.	Communication Equipment	HPE Hewlett Packard Enterprise Company HPJ Highpower International Inc HPQ HP Inc.	Electronic Components Computer Systems	MU MVIS	MACOM Technology Solutions Holdings Inc. Micron Technology Inc. MicroVision Inc.	Semiconductors Semiconductor Memory Electronic Components	SIMO SINA	Silicom Ltd Silicon Motion Technology Corporation Sina Corporation	Semiconductors Internet Content & Information	YGE Yingli Green Energy Holding Company Limited ADR YNDX Yandex N.V.	Solar Internet Content & Information
CMCM CMTL	Cheetah Mobile Inc. American Depositary Shares each representing 10 Class Comtech Telecommunications Corp.	Software - Application Formunication Equipment F	HQCL Hanwha Q CELLS Co. Ltd. HQY HealthEquity Inc.	Solar Health Information Services	MX MXIM	MagnaChip Semiconductor Corporation Maxim Integrated Products Inc.	Semiconductors Semiconductors	SLAB SLGG	Silicon Laboratories Inc. Super League Gaming Inc.	Semiconductors Electronic Gaming & Multimedia	YY YY Inc. ZAYO Zayo Group Holdings Inc.	Internet Content & Information Communication Equipment
CNTF CNXN	China TechFaith Wireless Communication Technology Limited PC Connection Inc.	Communication Equipment Formula Formul	HRS Harris Corporation HSTM HealthStream Inc.	Communication Equipment Health Information Services	MXL MXWL	<u>-</u>	Semiconductors Electronic Components	SLP SMAR	Simulations Plus Inc. Smartsheet Inc. Class A	Health Information Services Software - Application	ZDGE Zedge Inc. Class B ZEN Zendesk Inc.	Software - Application Software - Application
COHR COHU COMM	Coherent Inc. Cohu Inc. CommScone Holding Company Inc.	Semiconductor Equipment & Materials	HUBB Hubbell Inc HUBS HubSpot Inc. HUBC Hurco Companies Inc	Electronic Components Software - Application Scientific & Technical Instruments	MYSZ NANO NATI	Nanometrics Incorporated	Software - Application Semiconductor Equipment & Materials Software - Application	SMCI SMI SMIT	Super Micro Computer Inc. Semiconductor Manufacturing International Corporation ADR Schmitt Industries Inc.	Communication Equipment Semiconductors Scientific & Technical Instruments	ZIXI Zix Corporation ZNGA Zynga Inc. ZS Zscaler Inc.	Software - Application Electronic Gaming & Multimedia Software - Infrastructure
COMM COTV COUP	CommScope Holding Company Inc. Cotiviti Holdings Inc. Coupa Software Incorporated	Communication Equipment Software - Infrastructure Software - Infrastructure	HURC Hurco Companies Inc. IAC IAC/InterActiveCorp IBM International Business Machines Corporation	Internet Content & Information Information Technology Services	NATI NCR NCTY	National Instruments Corporation NCR Corporation The9 Limited	• •	SMII SMSI SMTC	Smith Micro Software Inc.	Scientific & Technical Instruments Software - Application Semiconductors	ZS Zscaler Inc. ZUO Zuora Inc. Class A	Software - Infrastructure Software - Infrastructure
CPAH CPSH	CounterPath Corporation CPS Technologies Corp.	Software - Application leading Electronic Components	iCAD iCad Inc. ICHR Ichor Holdings	Software - Application Semiconductor Equipment & Materials	NEON NETE	Neonode Inc. Net Element Inc.	Electronic Components Internet Content & Information	SMTX SNAP	SMTC Corporation Snap Inc. Class A	Contract Manufacturers Internet Content & Information		
CPSI CRAY	Computer Programs and Systems Inc. Cray Inc	Health Information Services Computer Systems	IDEX Ideanomics Inc. IDN Intellicheck Inc.	Software - Application Software - Application	NEWR NH	New Relic Inc. NantHealth Inc.	Software - Infrastructure Health Information Services	SNCR SNE	Synchronoss Technologies Inc. Sony Corporation	Software - Application Consumer Electronics		
CRCM CREE	Care.com Inc. Cree Inc. Creative Realities Inc.	Semiconductors	IDSY I.D. Systems Inc. Integrated Device Technology Inc. IEC IEC Flostropics Corp	Communication Equipment Semiconductors Contract Manufacturers	NICE NLST		Software - Application Semiconductor Memory Computer Systems	SNPS SOFO	Sonic Foundry Inc Ordinary Shares	Software - Application Software - Application Internet Content & Information		
CREX CRM CRNT	Creative Realities Inc. Salesforce.com Inc Ceragon Networks Ltd.	Software - Application Software - Application Communication Equipment	IEC IEC Electronics Corp. IFON Cool Holdings Inc. IIIV i3 Verticals Inc.	Contract Manufacturers Communication Equipment Software - Infrastructure	NNDM NOK NOVT		Computer Systems Communication Equipment Scientific & Technical Instruments	SOGO SOHU SOL	Sogou Inc. American Depositary Shares each representing one Class A Sohu.com Limited Renesola Ltd. ADR	Internet Content & Information Internet Content & Information Solar		
CRTO CRUS	Ceragon Networks Ltd. Criteo S.A. Cirrus Logic Inc.	Internet Content & Information Semiconductors	IIIV IS VERTICALS INC. IIJI Internet Initiative Japan Inc. IIN IntriCon Corporation	Communication Equipment Electronic Components	NOVI NOW NPTN	ServiceNow Inc.	Software - Application Semiconductors	SONO SPA		Consumer Electronics Electronic Components		
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