



VSI Update – North American Events January 2019

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VP Sales & Marketing

Reasons customers have stuck around for 40 years

“There are OpenVMS clusters operating with uninterrupted service uptimes in excess of 15 years. OpenVMS is one of the industry’s best-kept secrets.”

TRUST!

20%

of US power output generated by nuclear power plants running OpenVMS

90%

of microprocessors manufactured by processes controlled by disaster tolerant OpenVMS

60%

of world’s SMS messaging is managed by OpenVMS systems

You are not alone!

(Major Organizations use OpenVMS Today)

- Financial Services
- Manufacturing
- Healthcare
- Military
- Retail
- Distribution
- Energy
- Public Transit
- Automotive
- Aerospace
- Education
- Gov't Classified
- & More

Historical Transition for OpenVMS O/S

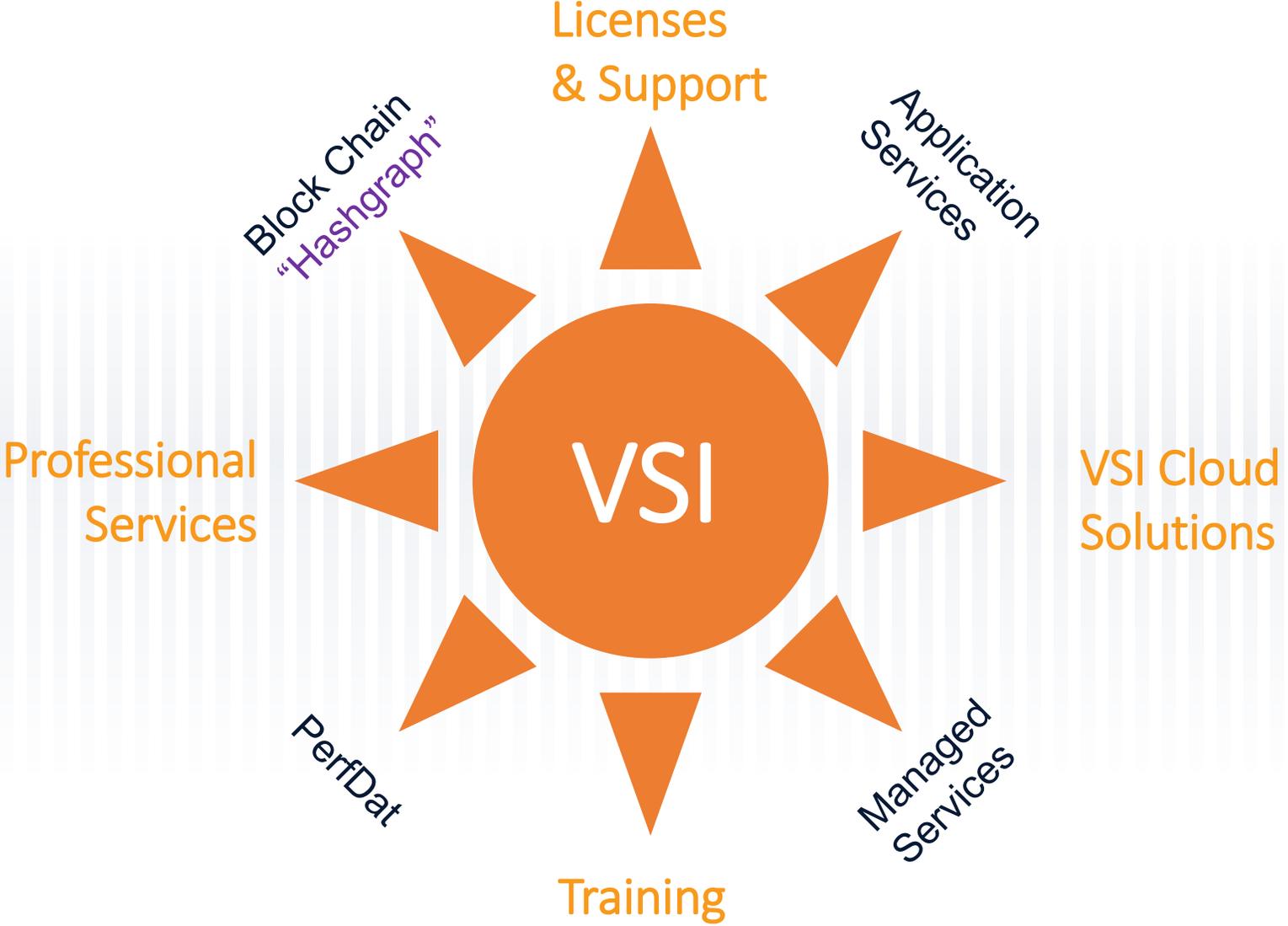
- After HP announces end of support for OpenVMS in 2013, VSI purchases the Rights to OpenVMS in 2014.
- VSI has the Exclusive rights to develop new versions of OpenVMS
- VSI has the Perpetual Worldwide License
- VSI has the Right to use the OpenVMS trademark
- VSI has the Right to release OpenVMS on any hardware (including the mainstream Intel x86 platform)
- VSI / HPE have fundamental agreement to transition customers to VSI (HPE gains new HW business / VSI gains new OpenVMS SW business)
- The transition rate to VSI is accelerating!

Who is VMS Software?

- VMS Software, Inc. was created as a result of its parent company Teracloud, Ltd (European corporation) purchasing from HP in 2014, all Rights to the OpenVMS O/S.
- VSI is headquartered in Bolton, Massachusetts USA just 15 minutes from the original Digital Equipment Corporation (DEC) headquarters.
- VSI has approx. 85 employees with the majority in Bolton, MA but other locations as well.
 - Offices in Malmo, Sweden
 - Locations in The Netherlands, France, Germany, UK, Russia and elsewhere in North America
- The majority of VSI's employees are developers and engineers working on new products and services with the main emphasis on a OpenVMS x86 products due available in late 2020.



OpenVMS Clearinghouse



VSI Licenses:

- VSI is the exclusive company to develop new OpenVMS products since 2014.
- VSI is the only company who offers VAX, Alpha, and Integrity users a way to migrate to the x86 platform.
- VSI is the only company who will offer V9.2 and beyond for Alpha, Integrity and x-86.



VSI Support Offerings

Bronze 9X5 Support

- Standard support phone number provided
- ¹ Right to New Versions (RTNV) of a VSI product
- Access to all software updates/patches provided between numbered releases
- Technical Support 9 hours a day, during 5 business days a week
- Provided periodic VSI updates
- 4 hour response from initial customer contact. This assumes that the customer uses the standard support phone line provided to the customer by VSI.

Silver 24X7 Support

- Standard support phone number provided
- ¹ Right to New Versions (RTNV) of a VSI product
- Access to all software updates/patches provided between numbered releases
- Technical Support 24 hours a day, 7 days a week
- Provided periodic VSI updates
- 2 hour response from initial customer contact. This assumes that the customer uses the standard support phone line provided to the customer by VSI.

Gold 24X7 Support

- Standard support phone number provided
- ¹ Right to New Versions (RTNV) of a VSI product
- Access to all software updates/patches provided between numbered releases
- Technical Support 24 hours a day, 7 days a week
- Assigned a remote Technical Account Manager (TAM)
- VSI software patch analysis
- VSI software system health checks
- Provided periodic VSI updates
- 1 hour response from initial customer contact. This assumes that the customer uses the standard support phone line provided to the customer by VSI.

Platinum 24x7 Support

- Dedicated phone number provided on sign-up
- ¹ Right to New Versions (RTNV) of a VSI product
- Access to all software updates/patches provided between numbered releases
- Technical Support 24 hours a day, 7 days a week
- Assigned a remote Technical Account Manager (TAM)
- Quarterly VSI software patch analysis
- Quarterly VSI software system health checks
- Provided periodic VSI updates
- Immediate response from initial customer contact. This assumes that the customer uses the dedicated phone line provided to the customer by VSI.



VSI Professional Services

Installation &
Migration Services

Managed Services

Remote Monitoring

Application
Modernization

Official VSI OpenVMS Training

- Instructor Led
- Remote instructor Led
- Online Self Paced
- Custom Client Site

OpenVMS
User

OpenVMS
Systems
Management

OpenVMS
Programming

OpenVMS
Certifications

How is VMS Software doing?

- In 2017 VSI sales nearly doubled from 2016
- In 2018 VSI projected Booked Orders more than 2X 2017
- Positive EDITDA projected in 2019
- Focus is the CUSTOMER
 - Customer transition underway
 - Different ways to work with VSI.
 - Need to Accelerate the transition
- Adding VSI Resources
 - Engineering
 - Professional Services
 - Sales Team



VSI Product Improvements Update

VSI Improvements to OpenVMS

Licenses



6

versions

36 months

764

Defect Repairs

195

New Features

16

Open Source
Releases

76

ISV Partners

65

Layered Products

2

Platforms SEP
(IA64 & Alpha)

VSI OpenVMS Releases – To date



- 3 OpenVMS Integrity Releases
- V8.4-1H1 – Bolton
 - June 2015
- V8.4-2 - Maynard
 - March 2016
- V8.4-2L1 – Hudson
 - August 2016



Plus ...

Japanese Version

- DECforms V4.2
- DCPS V2.8
- FMS V2.6
- DECwindows Motif V1.7E



- 2 OpenVMS Alpha Releases
- V8.4-2L1 – February 2017
 - Standard OpenVMS Release (Hudson)
- V8.4-2L2 - April 2017
 - Performance Build - EV6/EV7 (Felton)

OpenVMS Integrity Operating Environment

Released		Planned
BOE Components:		BOE Components
<ul style="list-style-type: none"> • V8.4-2L1 operating system • ANT V1.7-1B • AXIS2 VB1.0-1 • CDSA V2.4-322A • CIFS V1.2ECO1A • CSWS V2.4-3G • CSWS_JAVA V8.5-4 • CSWS_PHP V5.2-17A • DCPS V2.8 • DECnet Phase IV V8.4-2L1 • DECnet Phase V V8.4I • DECram V8.4-2L1 • DECwindows Motif V1.7E • DCE (runtime) V3.2A • ENCRYPT V8.4-2L1 • Enterprise Directory V5.8 • Kerberos V3.2-260 • GNV V3.0-2 	<ul style="list-style-type: none"> • NOTARY V1.0 • OpenSSL V1.02k • PERL V5.20-2A • TCP/IP V5.7-13ECO5F • The Data Collector V2.3-1220A • UDDI V1.0B • VSI Binary Checker V1.2 • WBEM/CIM V3.0-B151019 • WBEM providers V2.2-5D • WSIT 3.4-1 • XML C++ 3.0-1-1 • XML_JAVA V4.0-1 	<ul style="list-style-type: none"> • Availability Manager Base V8.4-2L1 • RMS Journaling V8.4-2L1 • Volume Shadowing V8.4-2L1 • OpenVMS Cluster Client V8.4-2L1 • OpenVMS Cluster Software V8.4-2L1 • RTR V5.3
		<ul style="list-style-type: none"> • CSWS additional modules • GNV Updates • SAMBA (CIFS) 4.6.5 • OpenSSL V1.1 1.x

OpenVMS Integrity Layered Products

Released	Planned
<ul style="list-style-type: none">• ABS / MDMS V4.6• ACMS dev, remote, runtime V5.2• BASIC V1.8-4• C V7.4-1• C++ V7.4-6• COBOL V3.1-7• Datatrieve V7.4-1• DECforms dev, runtime V4.2• DECset V12.9-1 (CMS, DTM, MMS, SCA, LSE, PCA)• DFO V3.3• DEC DFS V2.5• FMS dev, runtime V2.6• FORTRAN V8.3-3	<ul style="list-style-type: none">• Japanese VMS<ul style="list-style-type: none">- DECforms V4.2- DCPS V2.8- FMS V2.6- DECwindows Motif V1.7E• MRU V1.9• PASCAL V6.2• SSM V1.9-1• TDMS dev, runtime V2.1-1• T4 V4.4D• DQS V1.4• GKS V7.3• OMNI V4.1• OSAP V4.1• X.25 <ul style="list-style-type: none">• C updates for C99

OpenVMS Integrity Open Source Products

Available	Investigating
<ul style="list-style-type: none">• ActiveMQ V5.15.0A• cURL & libcurl V7.49.0A (OpenSSL 1.0.2h support)• Lua V5.2.3• Mosquitto V1.3.5 (MQTT broker)• Paho-C V1.0.3 (MQTT client)• PHP V5.6.10B• Ruby V2.2.2I• SCALA V2.11.8• Subversion V1.8-13• SWIG V3.0.5• Vgit2 V0.8• ZeroMQ V4.1.2• gSOAP V2.8.32• GNUplot V5.0-2• Maven V3.3-9• Syslog• Erlang	<ul style="list-style-type: none">• Precision Time Protocol (PTP)• Erlang• SAMBA (CIFS) 4.6.5 (in progress)• PostgreSQL client• New IDE based on Visual Studio Code• Several Others Being Reviewed

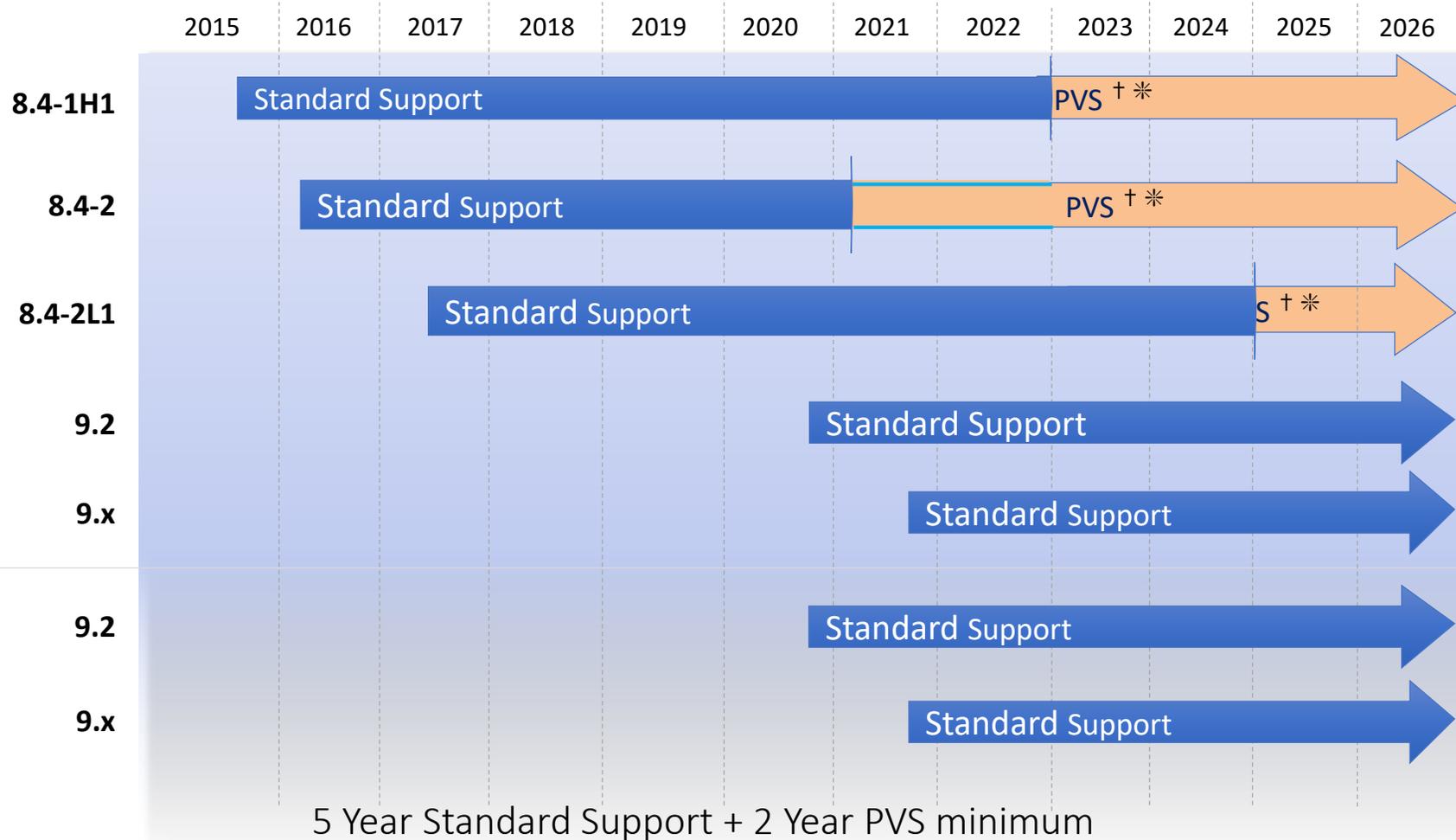
OpenVMS Alpha – OS & Layered Products

Released			Planned
<ul style="list-style-type: none"> • V8.4-2L1/V8.4-2L2 OS • CDSA V2.4-320A • DCPS V2.8-1 • DECnet Phase IV V8.4-2L1 • DECnet Phase V V8.4D • DECram V8.4-2L1 • DECwindows Motif V1.7F • DCE (runtime) V3.2B • ENCRYPT V8.4-2L1 • Enterprise Directory V5.8-2 • Kerberos V3.2-152B • DQS V1.4 • NOTARY V1.0 • OpenSSL V1.02n • TCP/IP V5.7-13ECO5F • The Data Collector V2.3-1220 • VSI Binary Checker V1.1A • AM Base V8.4-2L1 	<ul style="list-style-type: none"> • RMS Journaling V8.4-2L2 • Volume Shadowing V8.4-2L2 • OpenVMS Cluster Client V8.4-2L2 • OpenVMS Cluster Software V8.4-2L2 • RTR V5.4-1 • T4 V4.4D • ABS / MDMS V4.6-1 • ACMS dev, remote, runtime V5.3 • BASIC V1.8-5 • C V7.4-1 • C++ V7.4-8 • COBOL V3.1-7 • Datatrieve V7.4-1 • DECforms dev, runtime V4.2-1 • DECset V12.9-3 (CMS, DTM, MMS, SCA, LSE, PCA) • DFO V3.3-1 • DEC DFS V2.5-1 	<ul style="list-style-type: none"> • FMS dev, runtime V2.6-1 • FORTRAN V8.3-3 • MRU V1.9-1 • PASCAL V6.2-125 • SSM V1.9-1-2 • TDMS dev, runtime V2.1-2 • AM Base V8.4-2L1 • AM Data Analyzer V3.2 • GKS V7.3 • OMNI V4.1 • OSAP V4.1 • X.25 	<ul style="list-style-type: none"> • OpenSSL V1.1 x

VSI OpenVMS Integrity & x86 Support Roadmap

Integrity

x86



5 Year Standard Support + 2 Year PVS minimum

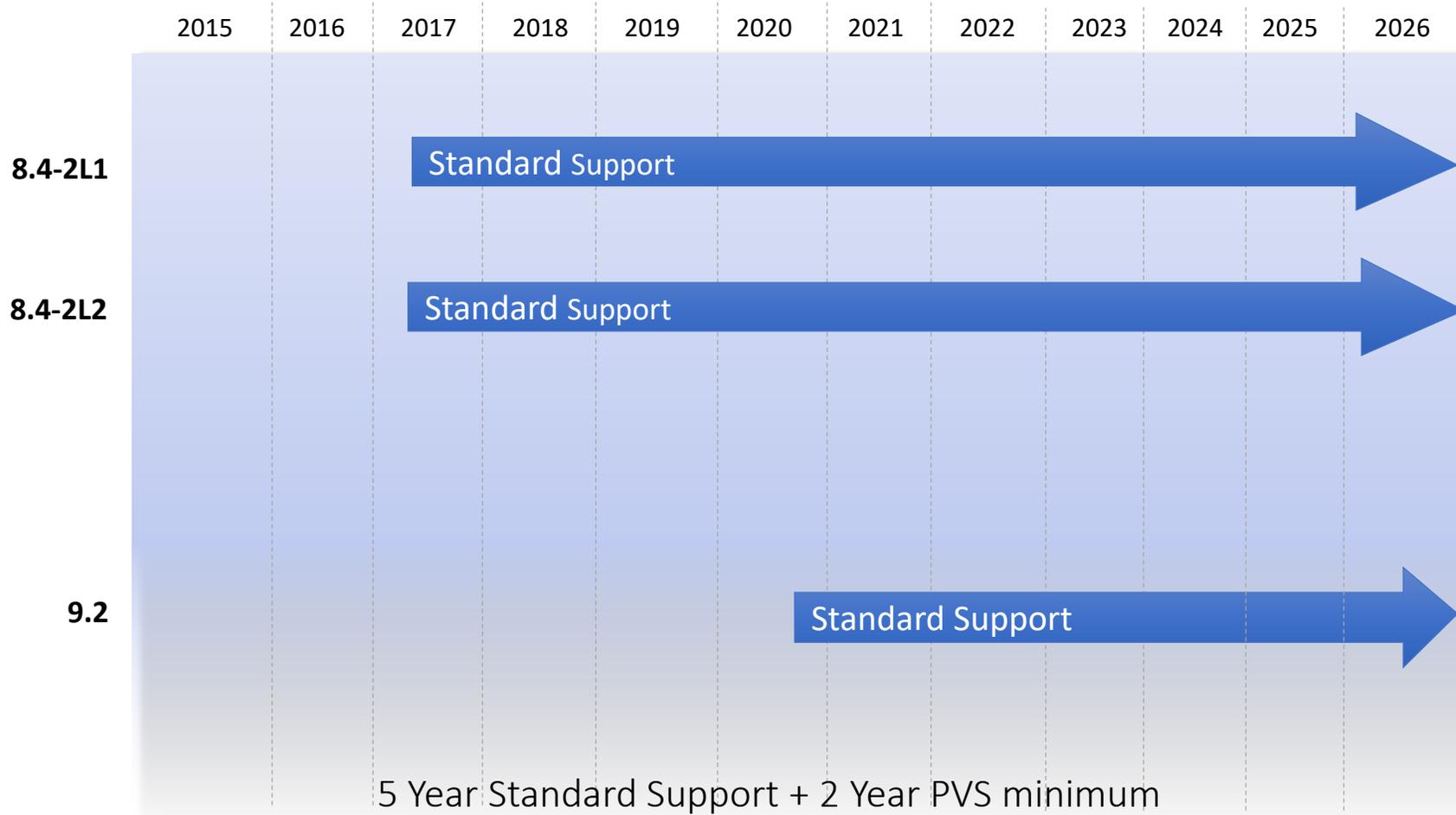
† PVS – Prior Version Support without Sustaining Engineering

24 Month notice will be provided before support is ended

* Extended Engineering Support (EES) contract is available

VSI OpenVMS Alpha Support Roadmap

Alpha



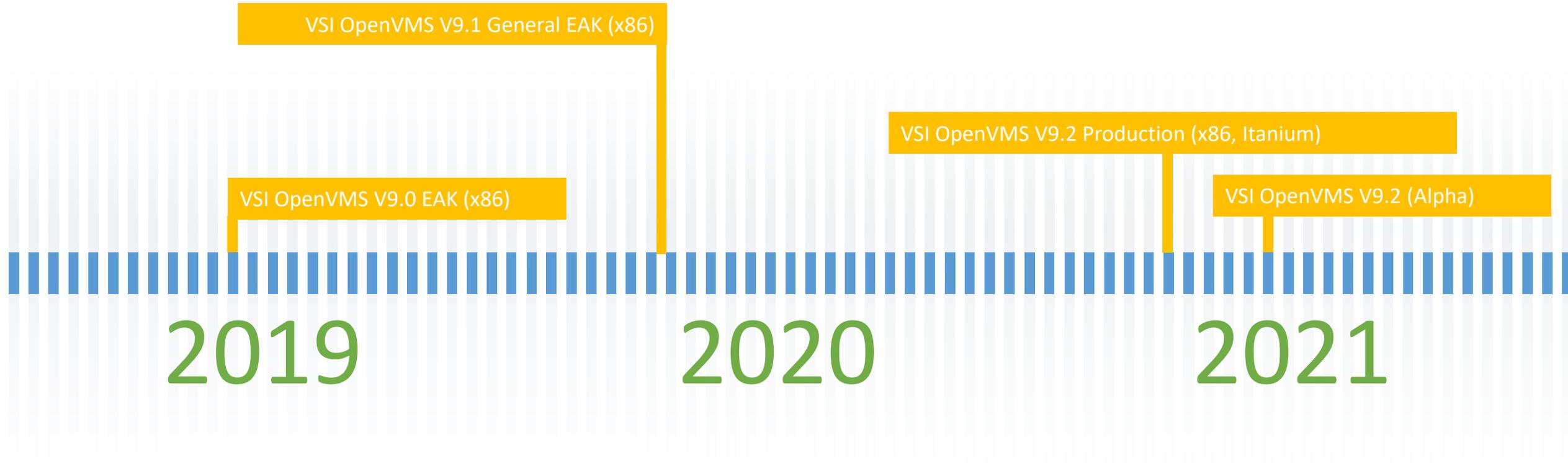
24 Month notice will be provided before support is ended
PVS (Prior version support without sustaining) will be provided at that time

Based on current, best estimates. Subject to change without notice.



X86 Update

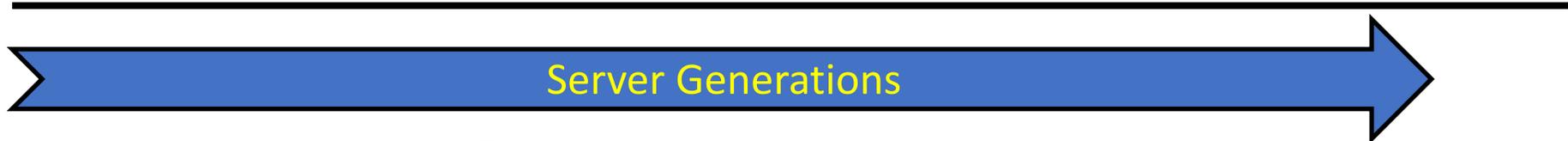
Product Roadmap for 2018 - 2020



VSI OpenVMS Virtualization



HPE X86 Servers



Gen 6

Gen 7

Gen 8

Gen 9

Gen 10

DL160 ML330
 DL170 ML350
 DL180 ML370
 DL320
 DL370
 SL170s
 SL390s

DL165 ML110
 DL360 ML350p
 DL380
 DL385
 DL580
 DL585
 DL980
 BL620c
 BL680c
 BL685c

DL160 ML310
 DL320e ML350
 DL360p
 DL380
 DL385p
 DL560
 BL660c
 SL230s
 SL250s

DL20 ML10
 DL60 ML30
 DL80 ML110
 DL120 ML150
 DL160 ML350
 DL180
 DL360
 DL380
 DL560
 DL580
 DL120 ML110
 DL160 ML350
 DL180
 DL360
 DL380
 DL560
 DL580
 MicroServer
 MC 990X
 (4-32 Socket)

Dell X86 Servers



Generation	14G	13G	12G		11G		10G	9G
Cloud Models	C6420	C4130 C6320	C6220 C6220 II	C8000 C8220 C8220X C8220XD	C410x C1100 C2100	C5000 C5125 C5220 C6100 C6105 C6145		
Modular Models		M630 M830	M420 M520 M620 M820		M610 M610x M710 M710HD	M910 M915	M600 M605 M805 M905	
Rack Models	R640 R740 R740xd R940	R930 R830 R730 R730xd R630 R530 R430 R330 R230	R220 R320 R420 R420xr R520	R620 R720 R720xd R820 R920	R210 R210 II R310 R410 R415 R510 R515	R610 R710 R715 R810 R815 R910	R200 R300 R805 R900 R905	1950 2950 2970 6950
Tower Models		T30 T130 T330 T430 T630	T20 T320 T420 T620		T110 T110 II T310 T410	T610 T710	T100 T105 T300 T605	1900 2900

Expanding OpenVMS Base in 2019



- **Trial Development Licenses & Trial Licenses Program**
 - **New Developers of OpenVMS Applications**
- **Higher Education Licensing Programs**
- **Hobbyist Licenses**
- **More in discussions**

New VSI Products

VSI TCP/IP V10.5

- Replacing the existing OpenVMS TCP/IP stack with a completely updated stack based on software licensed from Process Software
 - Offers advanced features
 - Intrusion Prevention System (IPS)
 - Improved Network Monitoring
 - More Up to date Standards Compliant
- Is currently released as a standalone EAK (Early Adopters Kit) on Integrity
 - Alpha kit available in 2019
- Will be integrated in future releases of OpenVMS
- Will be the Only stack on X86

Comparing VSI TCP/IP to TCP/IP Services...

Feature	TCP/IP Services	VSI TCP/IP
Servers		
DHCP Server Safe-failover	NO	YES
FTP Server Access Controls	NO	YES
DHCP v3 Server	NO	YES
Printing Services		
Internet Printing Protocol	NO	YES
Infrastructure & Other		
Paired Network Interface Load Balancing	NO	YES
DECnet applications over IP (Phase IV)	NO	YES
FTP and SMTP accounting & statistics	NO	YES
Throughput statistics	NO	YES
Compatibility		
New features available on OpenVMS 5.5-2 and higher	NO	YES
Support for other OpenVMS platforms	NO	YES

...Comparing VSI TCP/IP to TCP/IP Services

Feature	TCP/IP Services	VSI TCP/IP
Security Services		
• FTP Over TLS	NO	YES
• IPSEC	Limited	YES
• Intrusion Prevention System	NO	YES
• Outgoing access restrictions	NO	YES
• Kerberos 5 Server/Client Authentication & Encryption	NO	YES
• SFTP text file transfer from VMS to non-VMS systems	NO	YES
• SSH, SFTP, and SCP support other OpenVMS platforms	NO	YES
• SSH interoperability w/third-party support for SFTP v3 & 4	NO	YES
• SSH expired password management	NO	YES
• Single sign-on support for Kerberos 5 and PKI certificates	NO	YES
• SSH public key assistant & server	NO	YES
• CERTTOOL utility for X.509 certificate manipulation	NO	YES
• Single sign-on access to LDAP and RSA SecurID authentication	NO	YES

VSI TCP/IP V10.5 Summary

- **What it is:**

- A new product from VSI
- Installed with PCSI
- Based on MultiNet, but better
- Enabled with VSI OE licenses
- Able to co-exist with TCP/IP Services or MultiNet on the same system
- Easily switchable to and from other IP stacks
- Will be the Only stack on X86
- Expected Delivery V10.6 – May, 2019

- **Benefits**

- More Up to Date Standards Compliant
- More Secure
 - IPSEC Support
 - IPS (Intrusion Prevention system)
 - Suite-B Elliptical Curve SSH Cryptography
 - 2FA Support (Coming)
 - CAC Card Support (Coming)
- IPv6 Enabled
- Internet File, Print & Terminal Services
- Execute DECnet Apps over TCP/IP w/o mods
- CKO – Hardware Support (Coming)
- & More 😁

Password Management

- Increases password security on OpenVMS
- Patch kit now available
- Available on Integrity and Alpha
- Standard with all new VSI license releases
- Expected Delivery Date – March, 2019



New Product - PerfDat

- VSI purchased this products from HPE in January, 2019
 - Bolt-On Strategy
 - SAAS Model
 - New VSI Customers
- An integrated performance monitoring, management and capacity planning solution for OpenVMS
- Available as a stand alone product for your OpenVMS environment
- Available as a VSI Professional Service offering
 - Capacity planning
 - Performance monitoring
 - Performance troubleshooting



New Product - PerfDat

- Key Features and Benefits
 - Performance Lifecycle Management
 - Benchmarking Stress Testing
 - System Sizing Tuning
 - Troubleshooting Validation of Performance Changes
 - Capacity Analysis & More
 - Complete Performance Information
 - Allows Management Systems Performance
 - Provides Trend Analysis and Performance Prediction
 - Performance Data Management and Analysis
- Supported Environments
 - OpenVMS Alpha V7.2-2 and higher
 - OpenVMS IA64 V8.2 and higher



VSI SAN Storage Array Focus

(VSI HCL)

VSI Supported



In Progress

To Be Named

Status

Figure 1. Magic Quadrant for General-Purpose Disk Arrays



As of October 2017 © Gartner, Inc
Source: Gartner (October 2017)

VSI ISV Partners Include

(At A Glance)



This slide contains information that is confidential and is provided solely for your convenience. While the information is based on our current activities, such information is subject to change without notice.

VSI Announcements

Swirlds Hashgraph Partnership

“Next Generation of Blockchain Technology”

- Swirlds
 - Company that owns Hashgraph IP and implement Hashgraph platform.
 - Hashgraph is next generation distributed ledger.
- Swirlds is partnering with VSI to run Hashgraph on VSI OpenVMS.
- Support partners and customers to implement and operate next generation distributed applications.
- Partnership improves speed, security, costs and availability.



Thank You

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