VMware Telco Cloud Platform

Specific Program Documentation ("SPD")

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Program Name: *VMware Telco Cloud Platform (TCP)*

1. DEFINITIONS.

All terms defined in the Broadcom Software Glossary located at legaldocs.broadcom.com apply to this SPD unless specified herein.

"**BIOS**" means the Basic Input Output System, a set of routines that boots the operating system and sets up the hardware of the Processor.

"**Cloud Services**" means computing infrastructure and platform services (such as compute resources, storage capabilities, databases or virtual machines and other computing infrastructure and platforms services) that a third party makes available for consumption by customers.

"**Cluster**" is a software grouping of Servers running vSphere and/or vSAN for the purpose of resource sharing.

"**ClusterClass**" means a collection of resources that define a Kubernetes cluster topology and configuration.

"**Core**" means a single physical computational unit of the Processor.

"**G-xNFM**" means a generic NF Workload, Operations Support subsystem ("OSS"), Billing Support Subsystem ("BSS") or CNF Application lifecycle management function.

"**Instance**" means a single installation of the Software on a physical server or Virtual Machine.

"**Internally Developed Application**" means a computer application that: i) Customer has created or developed for use by third parties as ancillary to one of Customer's products or services, ii) is deployed on Software but the third party users cannot access the Software or benefit from the Software's features and functionalities directly, iii) is not ancillary to or a part of a product or services that directly or indirectly is related to, or competitive with, the features or functionalities of the Software (including the management, delivery or hosting thereof), and iv) is unrelated to the internal use of the third party users. Examples of Internally Developed Applications include a financial institution building an application for its retail banking customers to obtain information about their bank accounts, a grocery chain building an application that operates their in-store point of sale machines, an airline company building an application that operates the self-check in kiosks in airports, etc.

"**iSCSI Support**" means using the vSAN datastore as an iSCSI target to present storage to a Server not in the Cluster running vSAN.

"**Network Service**" means a composition of NF Workload, Operations Support subsystem workload, Billing Support Subsystem workload, and/or CNF Application that forms a service.

"**NF Workloads**" means any workloads that support subscriber facing service, including Network Functions - either 'Virtualized Network Functions' or 'Containerized Network Functions' for Mobile (2G/3G/4G/5G and voice, data, text, etc), Cable, Fixed line subscribers (broadband, video, ADSL, dial-up, fiber, co-ax, etc), Operations Support subsystem ("OSS"), Billing Support Subsystem ("BSS"), Applications compliant with Telco Standards (3GPP, ETSI, cablelabs, etc), Wired or Wireless Private Networks, Network Monitoring (probes, taps etc) and Test and Measurement (load generators, network simulators etc) workloads.

"**Processor**" means a single, physical chip that houses at least one Core that can execute computer programs.

"**Server**" means a hardware system capable of running the server software. A hardware partition or blade is considered a separate hardware system.

"**Standard Packages**" means optional open source packages available independently for use with a given Tanzu Kubernetes release.

"**S-xNFM**" means a specific (3rd party) NF Workload, OSS/BSS Workload, or CNF Application lifecycle management function.

"**TiB**" means a unit of physical storage capacity that is equal to 2^40 bytes.

"**Virtual Machine**" means a software container that can run its own operating system and execute applications like a physical machine.

"**vSphere IaaS Control Plane**" means those components that support or form part of the features and capabilities for running containerized applications in vSphere including but not limited to the Supervisor, the TKG Service, Tanzu Kubernetes releases (Tkr), Standard Packages, and associated CLI Plugins.

2. USE RIGHTS AND LIMITATIONS.

License Metrics

- VMware Telco Cloud Platform ("TCP") is subscription software licensed on a per Core license metric with a minimum licensing requirement of 16 Cores per Processor.
- Each Core on the Server where Software is installed must be licensed, including Cores deactivated by the BIOS. The required number of Core licenses equals the number of Cores on the Server, subject to the minimum of 16 Core licenses per Processor.
- TCP is sold as a single product; the integrated components and capabilities can only be utilized on the same physical Cores where the vSphere in TCP Core license is deployed.
- Customer may use TCP on a Server with up to the number of Cores for which Customer has paid the applicable license fees.

- Customer may use its license to TCP as a Migration License (as defined in the Agreement) by using TCP's embedded evaluation mode feature for a maximum period of then-currently supported by Software.

Use Rights and Limitations

- **General License Notes.** If Customer uses VMware Telco Cloud Platform to manage any Core on a Cluster, Customer must purchase a license for all the Cores on the Cluster. A Core is considered under VMware Telco Cloud Automation management if a new NF Workload instance is provisioned under the G-xNFM module or chained to the network service (NS) from an existing S-xNFM connection.

- Customer may use the VMware Telco Cloud Platform software to automate the lifecycle of NF Workloads as a service to third parties via an internal or external network.

- Customer acknowledges that any log files generated to obtain support from Broadcom may contain sensitive, confidential, or personal information. Customer agrees that it is solely responsible for taking the steps necessary to protect such data prior to sending it to Broadcom or any third party, including obfuscating or otherwise guarding such information.

- If Customer has an active support and subscription contract for Advanced Support for Telco, the VMware Telco Cloud Platform bundle includes products with specific versions that have been validated against a reference architecture to maintain Premier Support for Telco. Those product versions might not be the latest available version of that product. Customer must not upgrade or downgrade to product versions that are different from the versions included in the VMware Telco Cloud Platform bundle. Further, Customer will not install any published patches for products in the VMware Telco Cloud Platform bundle unless VMware has confirmed that the applicable patch is allowed as part of the VMware Telco Cloud Platform bundle. Nothing in this paragraph will be interpreted to be a warranty of any kind.

- **Component Specific License Notes.** The following table describes additional component specific license entitlement rights and limitations of TCP:

#	TCP Component	Metric Entitlement	Entitlement Details
1	vSAN	1 TiB	Customer is entitled to 1 TiB of vSAN capacity for each Core licensed for TCP. vSAN can only be aggregated and utilized across Cores where the vSphere in TCP is deployed.
2	Aria Suite Enterprise	1 Core	Aria Suite Enterprise and Aria Operations for Networks ("Aria Capabilities") contained in TCP are entitled to manage TCP Cores only.
3	Aria Operations for Networks	1 Core	
4	vCenter Server	1 Instance	vCenter Server may be used to provide centralized management capabilities to any licensed VMware by Broadcom infrastructure environments with an active subscription to Support and Subscription Services.

- **iSCSI Support.** Customer may only use the iSCSI Support feature in vSAN with physical, non-virtualized Servers. The iSCSI Support feature supports Microsoft clustering with shared disks. Initiators can be either from virtual machines or physical servers. For guest initiators in virtual machines, those virtual machines can be residing on:
  - The same vSAN Cluster that provides this iSCSI Support feature; or
  - An external vSAN or vSphere Cluster.

  The iSCSI Support is limited to a maximum of 128 sessions per Server, a maximum of 128 targets per Cluster, and a maximum of 1024 logical unit numbers (LUNs) per cluster. Raw device mapping (RDMs) for Microsoft Windows Server Failover Clustering (WSFC) using iSCSI target service is not officially supported on vSAN.

- **Export restrictions and restrictions on use of NSX Software.** VMware NSX Software is of United States Origin and contains some features (including features which support network infrastructure) which result in the application of stricter export control classifications pursuant to the United States Export Administration Regulations (EAR). For some uses of the VMware NSX Software, such as for use by "More Sensitive" Government End Users as defined in Part 772 of the EAR, there may be

restrictions or prohibitions applicable to Customer's proposed use of the Software if that use is in or for certain Group D:1 countries (which include China or Russia) where VMware's Bulk Export License may not be used. Customer is responsible for ensuring that Customer's proposed use of the VMware NSX Software is not in violation of applicable United States or local law.

- **Restrictions on Use with Public Cloud Services.** Customer must not (and must not allow Customer's Third-Party Agents to) use or deploy the Software on any Cloud Services.

- **Hosting Rights and Restrictions.** Customer may use the Software to deliver its Internally Developed Application(s) to a third party via an internal or external network. Except as expressly provided in this paragraph, the use of the Software for any other types of hosting or for the benefit of any third party in any manner is strictly prohibited.

- **vSphere IaaS Control Plane Lifecycle Policy**
  - vSphere IaaS Control Plane components have a shorter support life cycle period as compared to the lifecycle period generally applicable to the VVF Software.
  - Tanzu Kubernetes releases work with specific versions of the vSphere IaaS Control Plane components (e.g. the TKG Service, Supervisor) and vCenter. Additional interoperability conditions and upgrade path may be specified in Tkr release notes.
  - Broadcom will support clusters that use images created using the vSphere Tanzu Kubernetes Grid Image Builder when the same issue can be reproduced using a supported Tanzu Kubernetes release provided by Broadcom .
  - Each version of TKG Service and each version of each Standard Package is supported as long as a compatible Tanzu Kubernetes release is supported.
  - Support for Standard Packages is limited to the installation and upgrade of the packages. Broadcom does not provide support for any components of the Standard Packages, including but not limited to the debugging of configuration, bug fixes, feature enhancements, performance related issues, or security fixes not available from the upstream project. Broadcom reserves the right to discontinue the release of any of these packages at our discretion.
  - The TKG Service allows users to define their own ClusterClass. Broadcom will support clusters created using a customer-provided ClusterClass when the same issue can be reproduced using a ClusterClass provided by Broadcom.

- **Support Services.** Software includes Support Services that may only be used for the Software, and its components, licensed hereunder and may not be used for any other software, including former offers of components of Software that Customer may have licensed separately.

Compliance Reporting for Software Versions 9.0 or above.

- **Mandatory Compliance Reporting.** Customer who install, use or deploy versions 9 or above of Software must provide Broadcom with a Compliance Report (as defined above) for that version of Software 180 days from the commencement date of the subscription and every 180 days thereafter by ensuring that the Compliance Report files generated by the Software are either transmitted by the Software or uploaded by Customer in accordance with the product Documentation.

- **Failure to Report.** Customer's failure to transmit or upload a timely, unaltered Compliance Report, in accordance with the Documentation will result in features and functionalities of the management plane of the Software will be degraded and/or blocked in addition to support entitlements for this Software being suspended (including access to Updates or Upgrades).

- **Assumption of Risk of Failure to Report.** Customer assumes any and all risks associated with the loss of any and all functionality and patch access when caused by Customer's failure to provide timely, unaltered Compliance Reports.

3. THIRD PARTY INFORMATION AND TERMS.

Any required third-party software license terms are incorporated by this reference and are set forth in online documentation at techdocs.broadcom.com or legaldocs.broadcom.com.

- **VMware Tools.** VMware Tools is a suite of utilities and drivers that can be installed in a Guest Operating System to enhance the performance and functionality of a Guest Operating System when running in a Virtual Machine in conjunction with a vSphere hypervisor. Customer may not use VMware Tools with any other hypervisor. Customer may distribute the VMware

Tools to third parties solely when installed in a Guest Operating System within a Virtual Machine. Customer is liable for compliance by those third parties with the terms and conditions of the Framework Agreement.