Designing a VCE VBLOCK Architecture

Duration: 3.00 Days **Course Code: VCEA**

Overview:

Learn about the tools and process involved in creating a solution design for the VCE Vblock infrastructure platform.
The course examines the tools and process involved in creating a solution design for a VCE Vblock, starting from an analysis of the applications and services the solution is intended to support. Upon completion of this course, you will be able to create a VCE build/implement plan applying the following:
• Architecture governances and methodology
• Data collection and modeling tools
• Reference architecture and solution guidance
• Project documentation You will reinforce your learning experience in 8 lab activities that explore the different facets of Vblock architecture design. You will start by capturing a set of high-level Vblock designs using the VCE ACT tool. From there you will perform several scenario-based activities that create detailed designs for Vblock compute, network, and storage infrastructure. Next, you will capture management and operations requirements for the Vblock and use these to populate architecture documentation for these elements of an overall Vblock design. Finally, you will produce design specifications for a set of vSphere clusters and develop a consolidation plan.

Target Audience:

This course is designed for:VCE, Partner, and Parent Solutions Architects responsible for planning and designing VCE Vblock solutions

Objectives:

- Component architecture and differences between different Vblock Series 300 and 700 models
- How to approach customer requirements gathering for Vblock solutions and services
- Appropriate tool sets to use to inventory application environments and collect utilization metrics for a Vblock solution
- How to size a Vblock compute infrastructure, match blade technologies to application requirements, and capture the logical configuration
- How to create an appropriate core-edge and scale-out design for Vblock network infrastructure, and capture the logical configuration
- How to size a Vblock storage infrastructure, leveraging technologies like virtual provisioning and FAST
- Components of the Vblock AMP, UIM service catalog definition, and how to approach developing an ITSM model for Vblock
- Workload sizing and characterization, and creation of a consolidation plan for Vblock application environments

Prerequisites:

- Participants should have knowledge of Vblock compute, network, and storage technologies, and one of the following:
  •EMC Proven Professional Technology Architect
  •Cisco CCDA and DCUCD
  •VMware VCP4 and VCAP4-DCD

Content:

Introduction

- Comparative overview of Vblock infrastructure packages
- Vblock 300 Series
- Vblock 700 Series
- Vblock deployment model process overview
- Overview of the course agenda

Vblock Overview and Architecture

- Vblock design governances
- Base infrastructure packages and upgrades
- Scale out and aggregation capabilities
- Reference architectures
- Balanced, pre-tested, de-risked infrastructure
- Vblock component architecture
- Compute
- Network
- Storage
- vSphere
- Management
- Rack configurations
- VCE Design Tools and Documentation
- VCE ACT Tool
- BOM Assemblies and documentation

Vblock Requirements Gathering

- Planning and design process
- Requirements gathering
- Data collection and analysis
- Resource modeling and validation
- Gathering and assessing business requirements
- Calculating total cost of ownership
- Calculating return on investment
- Gathering and assessing technical requirement
- Classifying applications and virtualization candidates
- Network requirements (including backup and replication networks)
- Compute and virtual machine requirements
- Storage requirements (front-end, cache, back-end)
- Data center requirements (floor space, power, cooling)

Vblock Data Collection and Analysis

- Data collection process
- Inventory
- Data collection
- Data analysis
- Considerations for consolidation
- Virtual unit sizing
- P2V and V2V migrations
- Data collection tools and metrics
- Inventory tools
- Workload monitoring tools
- Capacity and consolidation planning
- Utilization and capacity planning
- Application placement and consolidation planning

Vblock Compute Design

- Virtual Unit sizing methodology
- Virtual Units
- Virtual Machines
- ESX hosts
- Clusters
- Data centers
- Physical compute planning
- Capacity planning
- Blade selection
- Bare metal considerations
- Chassis activation kits
- Logical compute planning
- Vblock deployment process
- Service profiles and templates
- Pools and policies

Vblock Network Design

- Approach to Vblock network design
- Standardized infrastructure
- Port density and subscription ratios
- Convergence and Workload mobility
- Cisco feature set
- Requirements gathering
- Vblock network sizing
- Network infrastructure components
- Selection of base Vblock model
- Multi-domain configurations
- Storage network considerations
- Mapping logical data flows in Vblock
- Aggregation layer – vPC domains
- Distribution layer – EHV and port channels
- Access layer – 1000v and VIC (including Cisco VN-link)
- Network use cases – application, management
- Designing the logical network architecture
- VLAN design and documentation
- Layer 2 and 3 addressing schemas
- Subscription ratios and QoS
- High availability and link dedication

Vblock Storage Design

- Approach to Vblock storage design
- Vblock model selection
- Storage array configuration
- SAN zoning
- Mapping and masking
- Logical storage planning
- Different types of storage used in Vblock
- Availability requirements (RAID, PowerPath/VE, hot spares)
- Tiered storage requirements (disk technologies)
- Fast Cache
- Data layout – RAID, meta devices, virtual provisioning
- Fully Automated Storage Tiering (FAST VP)
- Storage design considerations
- Virtual provisioning design considerations (pool layout)
- Boot from SAN design considerations
- Data protection and replication design considerations
- Raw capacity storage calculation
- Storage configurations by Vblock model
- Software suite selection by Vblock model
- Fabric design considerations
- VAAI enablement

Vblock Management Design

- Approach to Vblock management design
- Service delivery
- Lifecycle management
- Systems integration and orchestration
- Alignment with business objectives
- Vblock management model selection and sizing
- Advanced Management POD (AMP)
- Management components (mini-AMP and HA-AMP)
- Scale-out management infrastructure
- Management platforms and operational considerations
- Cisco (UCS, MDS, Nexus)
- EMC (VNX, VMAX, Ionix)
- VMware (vCenter)
- Integration of authentication servers
- Roles-based access controls
- Designing a service delivery model for Vblock
- Vblock Cloud Computing management model
- Capturing ITSM requirements
- Capturing service-level objectives
- UIM Service delivery mode
- UIM Provisioning center (IaaS service catalog)
- UIM Operations center (event and incident management)
- UIM Configuration center (compliance and change management)
- Integration Vblock management

infrastructure with third party systems
- Workflow orchestration
- Chargeback and billing
- ESM framework integration
- BPMS integration

Vblock Virtual Infrastructure Design

- Vblock virtual infrastructure design, based on
- Business and service-level objectives
- Architectural and functional requirements
- Performance and scalability requirements
- Availability requirements
- Operational requirements
- Security requirements
- Characterizing application workloads for consolidation
- Identifying application environments
- Inventorying existing application environments
- Collecting utilization and performance metrics
- Characterizing application workloads
- Ranking application workloads in terms of resource utilization
- N-tier applications and application dependencies
- Defining requirements and boundaries for multi-tenancy
- Identifying tenant organizations
- Identifying customer requirements for multi-tenancy
- Developing a model for infrastructure segregation (compute, network, and storage)
- Capturing service-level objectives and defining service tiers
- Performance service tiers and controls (DRS, NIOC, QoS, SIOC)
- Availability service tiers and controls (VMware HA, SRM, vStorage APIs for Data Protection)
- Security tiers and controls (using VMware, Cisco, EMC security platforms)

Further Information:

For More information, or to book your course, please call us on 00 971 4 446 4987

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