



QUENCH
YOUR THIRST
FOR KNOWLEDGE



MODERNIZE. OPTIMIZE. LEARN.

Customer Education Catalog

MAY 2016

EMC²

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* This learning path has been enhanced with new or updated courses and/or delivery modes.

LEVERAGING LEARNING PATHS

Take the guesswork out of your education plan.

Learning paths are structured road maps of courses that help you develop a thorough understanding of your selected technologies. They ensure the gradual introduction of complex technologies and challenging concepts from foundation through expert levels. Self-paced modules are a great way to learn the concepts and principles, enabling students in the classroom to spend more time on discussions and hands-on lab activities.

Maximize your storage expertise with advanced-level training.

If you have the knowledge and experience, go straight to the advanced levels. You will learn increasingly complex integration scenarios and application-centric solution best practices.



Validate your knowledge.

Our learning paths are conveniently aligned to EMC Proven Professional certifications. If you choose to take the next step, you already have the knowledge and access to the supporting study materials to prepare for the exam. Free practice tests are available online for all EMC Proven Professional exams.

Utilize blended learning.

Not everybody learns the same way, or at the same pace. Some prefer a classroom environment, others do well with self-paced methods that are easier on their time and budget. EMC Education Services has a highly “blended” approach to learning, offering several training modalities. Some curriculum is offered in more than one way. Choose from traditional classroom training (with hands-on labs) or online learning where the pace of instruction is up to you.

Delivery Modes

The key advantage of blended learning is *flexibility*. Choose the learning mode that best fits your learning style, time constraints, and budget.



Instructor-Led Training (ILT)—Traditional classroom training, with hands-on labs or case-studies, delivered at one of our many training centers worldwide, by a highly qualified EMC instructor.



Online Instructor-Led Training (Online ILT)—A real-time interactive training experience where students participate online to access the instructor-led virtual classroom. Lecture, discussion, questions and answers, and lab exercises make this a rich and flexible training experience.



Video Instructor-Led Training (Video ILT)—Top-instructor-delivered, Instructor-Led Training (ILT), delivered online, on-demand in streaming format, with an intuitive navigation menu. Lecture content, recorded walk-through lab demonstrations, and student materials are identical to the ILT.



e-Learning—Self-paced training, generally one to three hours which can be accessed directly over the Internet or downloaded to your PC for use at your convenience. Also includes downloadable and printable student guides that can be taken anywhere, anytime.

WELCOME TO EMC EDUCATION SERVICES

We are here to enable your team to meet tomorrow's IT challenges, today. Maximize the return on your technology investments by developing and validating your expertise in information storage and management.

Find training by product/technology and based on your role.



1 Plan and Architect—Build Your Team of Trusted Advisors

Leverage training and certification ideal for companies and organizations planning to implement private cloud or provide cloud-based IT services.



Cloud Architect Track

Cloud Architects bring cross-domain expertise to virtualization and cloud designs—including IT as a Service considerations—and are likely to lead the business-interfacing role within the team.

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| Cloud Infrastructure Planning and Design | page 11 |
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Service Management for ITaaS

Gain knowledge of critical roles and strategies for establishing service management.

| | |
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Data Center Architect

Data Center Architects play a crucial role on the team, providing information storage domain-specific expertise to complement, expand, and complete the cloud-ready virtualized infrastructure designs.

| | |
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| Enterprise Storage Networking Design | page 15 |
| Enterprise Backup Recovery Design | page 15 |

Federation Enterprise Hybrid Cloud

Gain knowledge to deliver IT services in a flexible, efficient, and proactive manner by allowing resource provisioning on-demand.

| | |
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| FEHC Management and Orchestration | page 14 |
|-----------------------------------|---------|

2 Deploy and Manage—Leverage the Full Range of Technologies Found in Today's Cloud and Virtualized Information Infrastructure

Rapid evolution of distinctly different technologies is impacting IT professionals and organizations.

Storage and Data Replication

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Archiving

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Backup and Recovery

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Business Continuity and Disaster Recovery

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| TimeFinder® and SRDF® | page 28-30 |
| RecoverPoint and RecoverPoint for Virtual Machines | page 35 |
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Big Data

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TRANSFORM YOUR BUSINESS AND IT ORGANIZATION WITH CLOUD, ITAAS, AND BIG DATA ANALYTICS.

See [page 9](#) and [page 17](#) for details.



3 Integrate and Optimize—Applying Best Practices

The following advanced-level courses and workshops provide best practices and hands-on experiences to build your technology integration expertise. To understand the content and successfully complete the exercises, the student must have taken the ‘Management’ courses or have equivalent experience.



Performance Optimization and Capacity Utilization

| | | | | | |
|--------|-------------------------|-------------------|-------------------------|-----|-------------------------|
| VNX | page 23 | VMAX 1&2 | page 28 | SAN | page 25 |
| Avamar | page 39 | VMAX ³ | page 30 | | |

Integrate VMware vSphere, SRM, and EMC Storage, Including Data Replication Technologies

| | | | | | |
|-----|-------------------------|----------|-------------------------|---------|-------------------------|
| VNX | page 55 | VMAX 1&2 | page 55 | XtremIO | page 21 |
|-----|-------------------------|----------|-------------------------|---------|-------------------------|

Integrate EMC Storage with OpenStack, Oracle, Exchange, and SQL Server

| | | | | | |
|---------|-------------------------|----------|-------------------------|---------|-------------------------|
| VNX | page 55 | VMAX 1&2 | page 55 | AppSync | page 36 |
| XtremIO | page 21 | | | | |

IT/storage teams continue to cite an information storage knowledge gap, requiring further skills development. Address your knowledge gap and increase your productivity, while enhancing overall team capability. Take the opportunity to expand your knowledge and skills today.



Cloud

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| ViPR Controller | page 48 |
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Infrastructure Management

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Converged Infrastructure

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VMware Virtualization and Cloud Solutions

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| Integration with EMC Storage, Replication | page 55 |
| VMware® vCenter™ | page 57 |
| VMware® vCloud™ and VMware® vRealize | page 57 |
| VMware® vSphere™ | page 56 |
| VMware® Horizon View™ | page 56 |

Security

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Cisco and Brocade

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| Cisco Unified Computing Systems | page 27 |
| Cisco MDS and Nexus Switches | page 27 |
| Brocade | page 27 |

PURCHASE OPTIONS

We offer several convenient methods to purchase training from EMC Education Services. Purchase options are aligned with how many people require training, whether you or your teams are preparing for EMC Proven Professional certification, or whether your team of eight or more employees require the same class. If you have any questions about payment or your account, please contact an Education Registration Consultant or your EMC account representative.

Are you working with a particular EMC product or solution?

ValuePaks and **Video ValuePaks** are the right choice. They offer a streamlined curriculum that aligns to our learning paths, and prepares learners for EMC Proven Professional certification. ValuePaks are blended and include e-Learning and one or more Instructor-Led or Online ILT classes.

Video ValuePaks, in addition to being our “green” option, offer a blend of e-Learning courses and videotaped instructor-led classes. Train without traveling!

Do you want to broaden and/or advance your expertise on EMC products and solutions?

| | |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Subscription* | Provides one individual access to the entire EMC training library (Instructor-Led, e-Learning, Online ILT and Video ILTs) for one year from the date of purchase. |
| V-Subscription* | Provides one individual access to the entire EMC training library (e-Learning and up to five Video ILTs) for one year from the date of purchase. |
| e-Subscription | Offers unlimited access to our entire library of self-paced e-Learning courses. |

Subscription Options**

| | | |
|--------------|-----------------------|-------------------|
| CE-SUBCUS01 | Customer Subscription | 1 person, 1 year |
| CE-SUBCUS02 | Customer Subscription | 1 person, 2 years |
| CE-SUBCUSEV | V-Subscription | 1 person, 1 year |
| CE-SUBCUSELN | e-Subscription | 1 person, 1 year |

* One-year subscriptions are valid for one (1) year from date of activation with activation not to exceed 60 days from the invoice date. Subscription options do not apply to Content Management.

Teams requiring additional skills development.

Training units are EMC Education currency. Upon purchase, TUs are deposited into your company’s training account and made available for general consumption by your organization’s employees. Valid for one year from date of purchase, pre-paid training units provide maximum flexibility to ensure your team’s readiness.

Training Unit (TU) Options**

| | | | |
|-----------|-------------------|-----------|--------------------|
| CE-TU0001 | 1 Training Unit | CE-TU0100 | 100 Training Units |
| CE-TU0050 | 50 Training Units | CE-TU0110 | 110 Training Units |
| CE-TU0055 | 55 Training Units | CE-TU0300 | 300 Training Units |

Unable to travel? Take advantage of onsite engagements.

We deliver our Instructor-Led training experience at your site or at the closest EMC facility. For more information on onsite training engagements, please contact EMC Education Services or ask your EMC account representative for details.

** For local pricing and purchase options, please contact your EMC account representative. Pricing is subject to change without notice.

Please refer to <http://education.EMC.com/Terms> for up-to-date information.

Contact Us

Online: <http://education.EMC.com/Contact>

Phone: 1-888-EMC-TRNG (1-888-362-8764)

You can find contact details for your regional EMC Education Services office at <http://education.EMC.com/Contact>.

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EMEA

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Greater China

+86 10 8434 6192

India

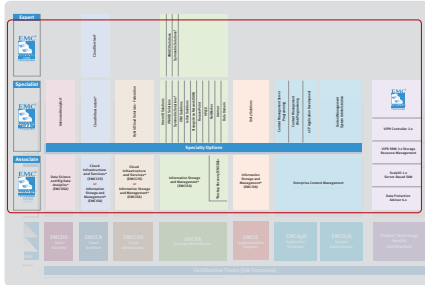
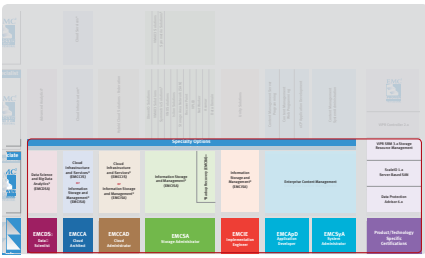
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EMC PROVEN PROFESSIONAL EDUCATION AND CERTIFICATION FRAMEWORK

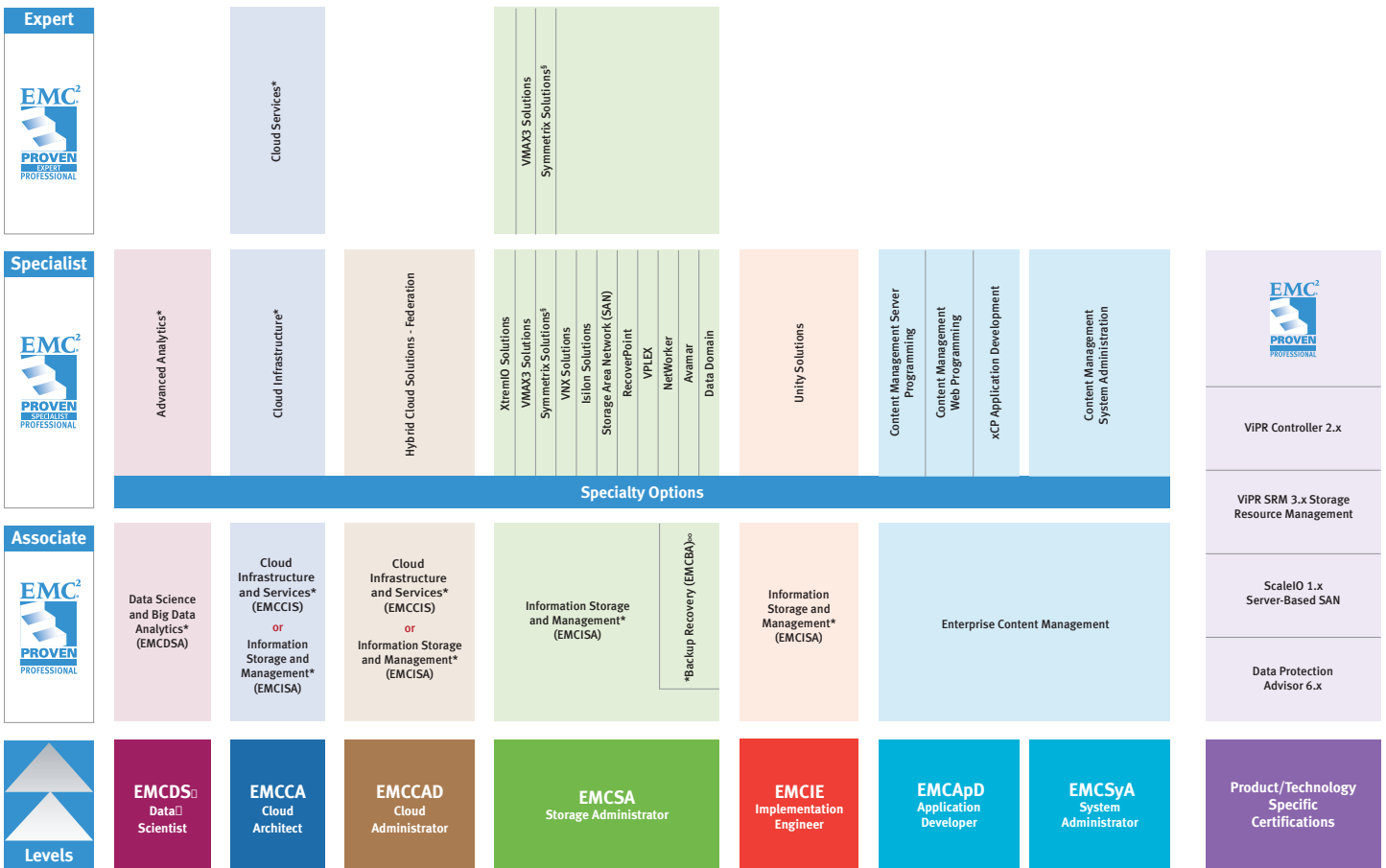
Broad and relevant technology coverage—ensures wider application of your knowledge

- Develop information storage knowledge and skills that will enable you to respond to the challenges of evolving IT infrastructures. Learn information storage and management concepts and principles that can be applied in many IT scenarios.
- Evaluate and recommend information storage solutions based on broad technology considerations.
- Adapt to changing requirements in evolving IT infrastructures.

Role-based specialization—develops expertise based on best practices

- The complexity of evolving IT infrastructures drives a greater need for IT professionals with specialized information storage knowledge and skills. Leverage our modularized curriculum to suit your individual learning needs based on your job role.
- Better understand EMC products, software, and solutions.
- Use more features and functions, maximizing investment in EMC products and technologies.

EMC PROVEN™ PROFESSIONAL CERTIFICATION FRAMEWORK



As of May 2016

Certification Tracks (Job Functions)

* Unique 'Open' Courses - Content focused on technology concepts, principles, and case studies that can be applied in many IT environments.
 ** If you are focusing only on Backup Recovery, we recommend pursuing EMCBA. If you are responsible for broader technology domains, pursue EMCISA.
 † VMAX 1 & 2

Additional credentials are available including CLARiiON and NAS (Celerra). For more information, please visit <http://education.EMC.com>

Information Storage and Management v3



TARGET AUDIENCE: Benefits storage architects, administrators, or managers; CIOs or project managers; or recent additions to information and storage management teams.

You will learn to make informed decisions about storing, managing, and protecting digital information in classic, virtualized, and cloud environments.

Prepare for your Information Storage Associate (EMCISA) Certification.

Certification Alignment

| | |
|------------|--------------------------------------|
| Expert | N/A |
| Specialist | Specialist Level Exams as applicable |
| Associate | E05-001 Exam |



Associate Course

Information Storage and Management v3

Information Storage and Management (ISM) is a unique course that provides a comprehensive understanding of the various storage infrastructure components in data center environments. It enables participants to make informed decisions on storage-related technologies in an increasingly complex IT environment, which is fast changing with the adoption of software-defined infrastructure management and third platform technologies (cloud, Big Data, social, and mobile technologies). It provides a strong understanding of storage technologies and prepares participants for advanced concepts, technologies, and processes.



This course contains the following modules:

Module 1: Introduction to Information Storage

- Digital data and its types
- Information storage
- Key characteristics of data center
- Evolution of computing platforms

Module 2: Third Platform Technologies

- Cloud computing and its essential characteristics
- Cloud services and cloud deployment models
- Big data analytics
- Social networking and mobile computing
- Characteristics of third platform infrastructure
- Imperatives for third platform transformation

Module 3: Data Center Environment

- Building blocks of a data center
- Compute systems and compute virtualization
- Software-defined data center

Module 4: Intelligent Storage Systems

- Components of an intelligent storage system
- Components, addressing, & performance of hard disk & solid state drives
- RAID
- Types of intelligent storage systems
- Scale-up and scale-out storage architecture

Module 5: Block-based Storage System

- Components of block-based storage system
- Storage provisioning and storage tiering

Module 6: File-based Storage System

- Components and architecture of NAS
- NAS file sharing methods
- File-level virtualization and tiering

Module 7: Object-based and Unified Storage

- Components of object-based storage device (OSD)
- Key features of OSD
- Storage and retrieval process in OSD system
- Unified storage architecture

Module 8: Software-defined Storage

- Attributes of software-defined storage
- Architecture of software-defined storage
- Functions of the control plane
- Software-defined storage extensibility

Module 9: Fibre Channel SAN

- Software-defined networking
- FC SAN components and architecture
- FC SAN topologies, link aggregation, and zoning
- Virtualization in FC SAN environment

Module 10: Internet Protocol SAN

- iSCSI protocol, network components, and connectivity
- Link aggregation, switch aggregation, and VLAN
- FCIP protocol, connectivity, and configuration

Module 11: Fibre Channel over Ethernet SAN

- Components of FCoE SAN
- FCoE SAN connectivity
- Converged Enhanced Ethernet
- FCoE architecture

Module 12: Introduction to Business Continuity

- Impact of information unavailability
- Business continuity planning lifecycle
- Eliminating single points of failure
- Application resiliency

Module 13: Backup and Archive

- Backup architecture
- Backup targets and methods
- Data deduplication
- Cloud-based and mobile device backup
- Data archive

Module 14: Replication

- Uses of replication and its characteristics
- Compute-based, storage-based, and network-based replication
- Data migration
- Disaster Recovery as a Service (DRaaS)

Module 15: Securing the Storage Infrastructure

- Information security goals
- Storage security domains
- Threats to a storage infrastructure
- Security controls to protect a storage infrastructure
- Governance, risk, and compliance

Module 16: Managing the Storage Infrastructure

- Storage infrastructure management functions
- Storage infrastructure management processes

[Click here for more details >>](#)

Purchase Options

ISM v3 VILTS

Includes one Video ILT course

CE-VILTISM



Information Storage & Mgmt. v3 eValuePak

Includes five self-paced e-Learning courses.

CE-eVALPAKISM



▲ BEST VALUE ▲

Information Storage and Management v3

Includes one Instructor-Led course.

CE-VALPAKSTF



ISM Onsite

If you are interested in having a qualified instructor to deliver this course at your company's location, or EMC's closest training facility, please contact your EMC sales representative or a Training Registrar.

CE-ONSITEISM



Cloud and IT as a Service for Business Transformation

TARGET AUDIENCE: Benefits business leaders, directors, and managers who are responsible for strategic planning related to the transformation of their business and IT organizations.

Gain the skills needed to take advantage of cloud computing and IT-as-a-Service to help drive innovation, agility, and efficiency. This course is targeted at business leaders, directors, and managers who are responsible for strategic planning related to the transformation of their business and IT organizations.



Course

Cloud and IT as a Service for Business Transformation

Businesses are increasingly challenged to stay competitive, increase profits, and work more efficiently. This course shows business leaders and their teams how to leverage cloud computing and IT-as-a-Service to help drive innovation, agility, and efficiency. It provides the definitions, concepts, core elements, skills, and a strategy for developing a plan to implement a services-centric IT organization. The course takes a practical approach and addresses the key focus areas of services governance, finance, organization, and technology to enable the business to achieve its goals. To understand the content, derive value, and successfully complete this course, you should be a manager who has functional awareness in the following areas: governance principles, corporate finance metrics, organization models, and IT infrastructure.



This course contains the following modules:

Module 1: IT Transformation—A Business Impact

- Business – key challenges
- Technology – leveraging cloud and ITaaS to address business challenges
- ITaaS strategy – key focus areas

Module 2: Governance

- Critical elements of a services governance strategy
- Service governance functions
- Service governance transformation planning

Module 3: Finance

- Critical elements of a financial strategy
- New functions and processes to support financial transformation
- ITaaS financial transformation planning

Module 4: Organization

- Critical elements of an organizational strategy
- New functions required in the organization
- Communication and skills development
- ITaaS organizational transformation planning

Module 5: Technology

- Critical elements of a technology strategy
- Tools to implement a service catalog, orchestration, metering and chargeback
- ITaaS technology transformation planning

Module 6: Course Summary

[Click here for more details](#) >>

Purchase Options

Cloud ITaaS-Biz Trans VILTS
Includes one Video ILT

CE-VILTBTCLOUD

Cloud ITaaS for Biz Transf. ILT
Includes one Instructor-Led course (by request only)

CE-ILTBTCLOUD

May 2016: To see special offers, search our full course library, and to purchase online: visit <http://education.EMC.com>.

For local pricing and purchase options, contact your EMC account representative.

Cloud Infrastructure and Services (CIS) v2

TARGET AUDIENCE: Benefits IT professionals responsible for architecting and managing the cloud.

Gain the skills needed to make informed decisions on building and managing cloud infrastructure. The course is ideal for gaining a broad understanding of the cloud computing reference model and the fundamental principles of building a cloud infrastructure.

Prepare for your Cloud Infrastructure and Services Associate (EMCCIS) Certification.



| Certification Alignment | |
|-------------------------|-------------------------|
| Expert | E20-920 Exam |
| Specialist | E20-020 Exam or E20-266 |
| Associate | E10-002 Exam |

- Instructor-Led Training
- Online ILT
- Video ILT (VILT)
- e-Learning

Course

Cloud Infrastructure and Services v2

This course educates participants on building cloud infrastructure based on a cloud computing reference model. The reference model includes five fundamental layers (physical, virtual, control, orchestration, and service) and three cross-layer functions (business continuity, security, and service management) for building a cloud infrastructure. For each layer and cross-layer function, this course covers the comprising technologies, components, processes, and mechanisms. This course takes an open-approach to describe the concepts and technologies, which are further illustrated and reinforced with EMC-related product examples. The course follows the U.S. National Institute of Standards and Technology as a guide for all definitions of cloud computing. Upon completing this course, participants will have the knowledge to make informed decisions on technologies, processes, and mechanisms required to build a cloud infrastructure.



This course contains the following modules:

Module 1: Introduction to Cloud Computing

- Essential characteristics of cloud computing
- Cloud service models and cloud service brokerage

Module 2: Building the Cloud Infrastructure

- Cloud computing reference model
- Deployment options and solutions for building cloud infrastructure
- Considerations for building cloud infrastructure

Module 3: Physical Layer

- Compute system
- Storage system architecture
- Network connectivity

Module 4: Virtual Layer

- Virtual layer functions
- Virtualization software
- Resource pool and virtual resources

Module 5: Control Layer

- Control layer functions
- Control software
- Software-defined approach for managing IT infrastructure
- Resource optimization techniques

Module 6: Service and Orchestration Layers

- Service layer functions
- Cloud portal
- Cloud interface standards
- Protocols for accessing cloud services
- Service orchestration
- Cloud service lifecycle

Module 7: Business Continuity

- Business continuity and service availability
- Fault tolerance mechanisms
- Backup and replication
- Cloud application resiliency

Module 8: Security

- Cloud security threats
- Cloud security mechanisms
- Governance, risk, and compliance

Module 9: Service Management

- Service portfolio management processes
- Service operation management processes

[Click here for more details >>](#)

Purchase Options

| | | | |
|-----------------------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| CIS v2 VILTS Includes one Video ILT | CE-VILTCIS | Cloud Infrastructure and Services ILT Includes one Instructor-Led course. | CE-ILTCIS |
| ▲ BEST VALUE ▲ | | | |
| | | Cloud Infra. Services Onsite If you are interested in having a qualified instructor to deliver this course at your company's location, or EMC's closest training facility, please contact your EMC sales representative or a Training Registrar. | CE-ONSITECIS |

Cloud Infrastructure Planning and Design

TARGET AUDIENCE: Benefits architects, designers, and consultants involved in planning and designing cloud infrastructure that supports multiple types of services.

Design cloud infrastructures, maintaining the most robust and elastic compute, storage, and network environments.

Prepare for your Specialist-level Cloud Architect (EMCCA) Certification.



| Certification Alignment | |
|-------------------------|-------------------------|
| Expert | E20-920 Exam |
| Specialist | E20-020 Exam |
| Associate | E10-002 or E05-001 Exam |

- Instructor-Led Training
- Online ILT
- Video ILT (VILT)
- e-Learning

Course

Cloud Infrastructure Planning and Design

This course provides technical professionals with the knowledge and skills to successfully design a cloud infrastructure that supports multiple types of services. It uses an open approach to planning and design, focusing on core concepts and practices and citing examples from multiple vendors, products, and cloud technologies. This course highlights the benefits, challenges, and considerations of design choices and emphasizes the importance of proper requirements gathering in the design process..

- Apply relevant design processes and techniques when producing an effective cloud infrastructure design.
- Create a cloud infrastructure design that addresses business requirements and constraints that were identified during an assessment.
- Communicate the benefits, challenges, and considerations of various cloud-enabling technologies as well as their relevance in meeting a business requirement or constraint.
- Develop a cloud infrastructure design that includes components such as cloud management, consumer resources, elasticity, metering, hybrid capabilities, and disaster recovery.

(5 days)

This course contains the following modules:

Module 1: Introduction to Cloud Design

Module 6: Elasticity and Metering

Module 2: Cloud Management

Module 7: Hybrid Cloud Capabilities

Module 3: Compute Resources

Module 8: Disaster Recovery

Module 4: Storage Resources

Module 8: Planning and Design Review

Module 5: Network Resources

Recommended Pre-requisites for the Course

- Three or more years of design experience in storage, operating systems, networking, business continuity and disaster recovery
- Strongly recommend certifications or skills equivalent to: EMC Information Storage and Management (EMCISA), EMC Cloud Infrastructure and Services (EMCCIS), VMware Certified Professional (VCP) and/or Cisco Certified Network Associate (CCNA)

[Click here for more details](#) >>

Purchase Options

The courses listed above can be purchased individually with a subscription, training units, or credit card. See page 6 for details.

Cloud Services Planning and Design

TARGET AUDIENCE: Benefits those responsible for the design, development, and implementation of a cloud strategy and cloud services.

Become an IT professional who demonstrates the skills necessary to plan and design robust cloud services in a cloud and IT as a service environment.

Prepare for your Expert-level Cloud Architect (EMCCAE) Certification.



Certification Alignment

| Expert | E20-920 Exam |
|------------|-------------------------|
| Specialist | E20-020 Exam |
| Associate | E10-002 or E05-001 Exam |



Course

Cloud Services Planning and Design

This expert-level course provides technical professionals the knowledge and skills necessary to plan and design for robust cloud services in a cloud and IT as a Service environment. Building on the skills acquired in the Cloud Infrastructure Planning and Design specialist-level course, it focuses on governance, organizational, financial, and technology aspects as well as the management and operation of cloud services. Through lecture, discussions, case studies, design examples, and a series of interactive labs, students learn to design solutions which transform business operations and cloud environments to support a cloud services model. The course is applicable to enterprise, service provider, and existing data center operations considering cloud and cloud services.

- Explain ITaaS concepts and benefits as well as various elements helping drive institutions to an ITaaS delivery model.
- Define, assess, and plan for cloud services from the perspective of Governance, Finance, Organization, and Technology (GFOT).
- Summarize the planning and design strategies for cloud services and describe the significance of the service catalog, templates, service level agreements, orchestration, provisioning, and automation when building and deploying cloud services.



This course contains the following modules:

Module 1: Understanding IT Transformation and Cloud Services

Module 5: Organizational Planning for Cloud Services

Module 2: Technology Planning for Cloud Services

Module 6: Services Creation and Management

Module 3: Governance Planning for Cloud Services

Module 7: Cloud Services Trends and Future

Module 4: Financial Planning for Cloud Services

Recommended Pre-requisites for the Course

- Five or more years of design experience in compute, network and storage, including the design of virtualized infrastructures in support of key cloud attributes.
- Understanding of cloud delivery and service models, as well as services lifecycle.
- Strongly recommend certifications or skills equivalent to EMC Information Storage and Management EMCISA, EMC Cloud Infrastructure and Services EMCCIS.

[Click here for more details >>](#)

Purchase Options

The courses listed above can be purchased individually with a subscription, training units, or credit card. See page 6 for details.

Establishing Service Management for ITaaS

TARGET AUDIENCE: Benefits those responsible for design, development, and implementation of services management strategy within their organization.

Gain in-depth knowledge of the critical roles and strategies for establishing a service management front office to support the development of services. Review the foundational back office processes to understand the operational framework necessary to support the delivery of services. Throughout the course, lab exercises, case studies and real world examples will reinforce concepts of service management design and implementation.



Course

Establishing Service Management for ITaaS

Service Management Overview; Service Management Planning; Service Management Considerations; Service Management Front Office; Service Management Back Office; Measuring Success and Planning for the Future.

- Discuss service management business drivers and benefits
- Discuss ITaaS transformation program planning and outcomes
- Define service management terminology and lifecycle
- Apply a practical approach to the phases of the service lifecycle from a front and back office perspective
- List measures of success and plan for the future



This course contains the following modules:

Module 1: Service Management Overview

- Define service management business drivers
- Summarize the benefits of service management
- Discuss essential service management concepts and the service lifecycle
- Discuss the transformational framework of ITaaS from a service

Module 2: Service Management Planning

- Discuss the ITaaS program for establishing service management
- Discuss the program initiation steps and program strategy
- Discuss IT maturity model and baseline
- Review sample program structure and essential work streams
- Discuss program implementation considerations and outcomes

Module 3: Service Management Considerations

- Discuss popular IT management frameworks
- Explain the service lifecycle used for this course
- Discuss the aspects of service lifecycle within the ITaaS framework
- Review sample services and introduce the chosen service for this course

Module 4: Service Management Front Office

- Discuss components of the Strategy phase of the service lifecycle
- Discuss components of the Design phase of the service lifecycle

Module 5: Service Management Back Office

- Discuss components of the Build phase of the service lifecycle
- Discuss components of the Launch phase of the service lifecycle
- Discuss components of the Operate phase of the service lifecycle

Module 6: Measuring Success and Planning for the Future

- List contributors and methods used to determine and quantify service success.
- Discuss measuring and reporting attributes and capabilities
- Discuss the impact of emerging trends on Service Management

[Click here for more details](#) >>

Purchase Options

EstServMgmtForITaaS VILTS
Includes one Video ILT

CE-VIDVPKESMITAAS

Est Serv Mgmt for ITaaS ValuePak
Includes one Instructor-Led or Online ILT course

CE-VALPAKESMITAAS

May 2016: To see special offers, search our full course library, and to purchase online: visit <http://education.EMC.com>.

For local pricing and purchase options, contact your EMC account representative.

Federation Enterprise Hybrid Cloud Solutions



TARGET AUDIENCE: Benefits those responsible for service management, capacity planning and management, process automation, tenant management, chargeback, data protection and monitoring of the Federation Enterprise Hybrid Cloud.

Gain in-depth knowledge of the Federation Enterprise Hybrid Cloud and deliver IT services in a flexible, efficient, and proactive manner by allowing consumers to provision their own resources on-demand. Prepare for your Cloud Administrator (EMCCAD) Certification.

Certification Alignment

| | |
|-------------------|-------------------------|
| Expert | N/A |
| Specialist | E20-266 Exam |
| Associate | E10-002 or E05-001 Exam |



Courses

Federation Enterprise Hybrid Cloud Management and Orchestration

Solution Overview and Architecture, Administrative Tasks, Multi-Machine Blueprints in vRealize Automation, Multi-tiered Application in Application Services, Virtual Machine Encryption, Chargeback, Public Cloud Integration, Troubleshooting.

- Manage the Federation Enterprise Hybrid Cloud to efficiently utilize its resources
- Automate application deployments to provide consumers the ability to provision applications on-demand
- Configure the chargeback system to provide pricing information to consumers, allowing them to make informed decisions about resource utilization
- Integrate a Public cloud provider to support workloads greater than what can be hosted on the Private cloud infrastructure
- Reclaim unused or underused resources to make them available for other consumers
- Troubleshoot performance issues within the cloud environment to ensure that consumers receive the best possible service levels



EMC Enterprise Hybrid Cloud, Federation SDDC Edition Fundamentals Start here

EMC Enterprise Hybrid Cloud Introduction, Architecture, Features and Capabilities, Management.



Additional Courses

Federation Enterprise Hybrid Cloud 3.1 Virtual Machine Encryption

CloudLink SecureVM installation, administration, and integration in the Federation Enterprise Hybrid Cloud



[Click here for more details >>](#)

Purchase Options

Fed Ent Hybrid Cloud Ops ValuePak
Includes one Instructor-Led course and one e-Learning course.

CE-VALPAKFEHC

Enterprise Backup Recovery

TARGET AUDIENCE: Benefits architects and consultants with experience in enterprise backup and recovery domains who plan, architect, and deploy backup recovery solutions in physical and virtual environments.

Learn design practices and considerations for backup and recovery solution in both physical and virtualized environments as well as design practices for deduplication, data archive and replication solutions.

 Instructor-Led Training  Online ILT  Video ILT (VILT)  e-Learning

Course

Enterprise Backup Recovery Design

The Enterprise Backup Recovery Design (EBRD) course educates participants on considerations and practices to design backup recovery solution for classic and virtualized data center environments. The course also focuses on design considerations for data deduplication, Cloud backup, data archiving, and replication solutions. It takes an 'open' approach focusing on technologies, concepts and practices rather than specific products. To provide context, the course utilizes best-of-breed EMC product examples and case studies. Upon completing this course, participants will have the knowledge to design more robust and efficient backup recovery infrastructure for their organization, customers, and partners.

 (5 days)

[Click here for more details >>](#)

Enterprise Storage Networking

TARGET AUDIENCE: Benefits architects and consultants with experience in enterprise storage who plan and design storage networking solutions in both physical and virtual environments.

You will learn design practices and considerations for storage networking projects and solutions (FC SAN, IP SAN, and FCoE) as well as design for storage, compute and replication in physical and virtual environments.

Course

Enterprise Storage Networking Design

The Enterprise Storage Networking Design (ESND) course educates participants about considerations and practices to design storage networking solution for classic and virtualized data center environments. The course also focuses on design practices for storage, compute, and replication solutions. It takes an 'open' approach focusing on technologies, concepts and practices rather than specific products. To provide context, the course utilizes best-of-breed EMC product examples and case studies. Upon completing this course, participants will have the knowledge to design more robust and efficient storage networking infrastructure for their organization, customers, and partners.

 (5 days)

[Click here for more details >>](#)

Purchase Options

Enterprise BR Design VILTS
Includes one Video ILT.

CE-VILTAD


Enterprise StrNetwkg Dgn VILTS
Includes one Video ILT

CE-VILTSND


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For local pricing and purchase options, contact your EMC account representative.

Data Science and Big Data Analytics for Business Transformation

TARGET AUDIENCE: Benefits leaders of functional areas wanting to enhance analytics-driven decision-making, business leaders looking to build a new analytics or Data Science capability, and leaders of business intelligence or operations teams looking to raise the level of analytics.

Gain the skills and knowledge to better manage analytical efforts, requirements to effectively run projects that leverage Big Data analytics, and deriving business value from big data using data analytics lifecycle and driving innovation using analytics.



Course

Data Science and Big Data Analytics for Business Transformation

Businesses are increasingly looking to take advantage of Big Data to be competitive. In addition to Data Scientists, organizations need data-savvy business leaders who can identify opportunities to solve business problems using advanced analytics and who have the expertise to lead an analytical team. This course gives business leaders the skills and knowledge to better manage such analytical efforts. It describes how to get started and what is required to effectively run projects which leverage Big Data analytics. Specifically, it addresses: deriving business value from Big Data, leading Data Science projects using a data analytics lifecycle, developing Data Science teams, and driving innovation using analytics. To understand the content, derive value, and successfully complete this course, you should have experience managing teams or leading initiatives and high-level understanding of quantitative methods used in business performance measures.



(1 day)

This course contains the following modules:

Module 1: Introduction

- Overview of Data Science and Big Data analytics
- Business drivers for advanced analytics
- Stages of analytical maturity in an organization

Module 2: Deriving Business Value from Big Data

- Business value of a Data Science project
- Overview of key advanced analytic techniques and their applications
- Big Data tools and technologies

Module 3: Leading Analytic Projects

- Overview of data analytics lifecycle
- Frame a business problem as an analytics problem
- Four main deliverables in an analytics project

Module 4: Developing Data Science Teams

- Develop an analytic team, roles and skill sets
- Four approaches to develop Data Science capabilities
- Three organizational models for Data Science teams

Module 5: Driving Innovation via Analytic Projects

- Cultivate characteristics of visionary thinking to apply to Data Science team
- Incorporate change management as part of implementing a data-driven approach to decision-making
- Leverage small wins to change how the organization approaches problems

[Click here for more details](#) >>

Purchase Options

Data Sci-Biz Trans VILTS
Includes one Video ILT

CE-VILTBTDATA


Data Science for Biz Transf. ILT
Includes one Instructor-Led course (by request only)

CE-ILTBTDATA


Data Science and Big Data Analytics

TARGET AUDIENCE: Benefits managers of business intelligence, analytics, big data professionals, data and database professionals adding big data analytics to their skills, recent college graduates and graduate students in related disciplines looking to move into Data Science.

You will learn basic and advanced analytic methods, get an introduction to Data Analytics Lifecycle to address business challenges that leverage big data; big data analytics technology and tools, including MapReduce and Hadoop.

Prepare for your Data Science Associate (EMCDSA) Certification.



| Certification Alignment | |
|-------------------------|--------------|
| Expert | N/A |
| Specialist | E20-065 Exam |
| Associate | E20-007 Exam |

- Instructor-Led Training
- Online ILT
- Video-ILT (VILT)
- e-Learning

Course

Data Science and Big Data Analytics

This course provides practical foundation level training that enables immediate and effective participation in big data and other analytics projects. It establishes a baseline of skills that can be further enhanced with additional training and real-world experience. The course provides an introduction to big data and a Data Analytics Lifecycle Process to address business challenges that leverage big data. It provides grounding in basic and advanced analytic methods and an introduction to big data analytics technology and tools, including MapReduce and Hadoop. The course has extensive labs throughout to provide practical opportunities to apply these methods and tools to real-world business challenges and includes a final lab in which students address a big data analytics challenge by applying the concepts taught in the course in the context of the Data Analytics Lifecycle. The course prepares the student for the Proven™ Professional Data Scientist Associate (EMCDSA) certification exam.

- Immediately participate and contribute as a Data Science Team Member on big data and other analytics projects by:
 - Deploying the Data Analytics Lifecycle to address big data analytics projects
 - Reframing a business challenge as an analytics challenge
 - Applying appropriate analytic techniques and tools to analyze big data, create statistical models, and identify insights that can lead to actionable results
 - Selecting appropriate data visualizations to clearly communicate analytic insights to business sponsors and analytic audiences
 - Using tools such as: R and RStudio, MapReduce/Hadoop, in-database analytics, Window and MADlib functions
- Explain how advanced analytics can be leveraged to create competitive advantage and how the data scientist role and skills differ from those of a traditional business intelligence analyst

(5 days)

This course contains the following modules:

Module 1: Introduction to Big Data Analytics

- Big Data Overview
- State of the Practice in Analytics
- The Data Scientist
- Big Data Analytics in Industry Verticals

Module 2: Data Analytics Lifecycle

- Discovery
- Data Preparation
- Model Planning
- Model Building
- Communicating Results
- Operationalizing

Module 3: Review of Basic Data Analytic Methods Using R

- Using R to Look at Data – Introduction to R
- Analyzing and Exploring the Data
- Statistics for Model Building and Evaluation

Module 4: Advanced Analytics – Theory And Methods

- K Means Clustering
- Association Rules
- Linear and Logistic Regression
- Naïve Bayesian Classifier
- Decision Trees
- Time Series Analysis
- Text Analysis

Module 5: Advanced Analytics - Technologies and Tools

- Analytics for Unstructured Data - MapReduce and Hadoop
- The Hadoop Ecosystem:
 - In-database Analytics – SQL Essentials
 - Advanced SQL and MADlib for In-database Analytics

Module 6: The Endgame, or Putting it All Together

- Operationalizing an Analytics Project
- Creating the Final Deliverables
- Data Visualization Techniques
- Final Lab Exercise on Big Data Analytics

The Course above requires the following prerequisites:

Given below is a list of specific prerequisites (or refresher) training and reading to be completed prior to enrolling for or attending this course. Having this requisite background will help ensure a positive experience in the class, and enable students to build on their expertise to learn many of the more advanced tools and analytical methods taught in the course.

- A strong quantitative background with a solid understanding of basic statistics, as would be found in a statistics 101 level course.
- Experience with a scripting language, such as Java, Perl, or Python (or R). Many of the lab examples taught in the course use R (actually RStudio), which is an open source statistical tool and programming language
- Experience with SQL

[Click here for more details >>](#)

Purchase Options

| | | | |
|----------------------------------------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| DSBDA VILTS Includes one Video-ILT | CE-VILTSBDA | Data Science and Big Data Analytics ILT Includes one Instructor-Led course. | CE-ILTSBDA |
| ▲ BEST VALUE ▲ | | DSBDA Onsite If you are interested in having a qualified instructor to deliver this course at your company's location, or EMC's closest training facility, please contact your EMC sales representative or a Training Registrar. | CE-OSDSBDA |

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For local pricing and purchase options, contact your EMC account representative.

Advanced Methods in Data Science and Big Data Analytics



| Certification Alignment | |
|-------------------------|--------------|
| Expert | N/A |
| Specialist | E20-065 Exam |
| Associate | E20-007 Exam |

TARGET AUDIENCE: Benefits aspiring Data Scientists, data analysts that have completed the Associate level Data Science and Big Data Analytics course, and computer scientists wanting to learn MapReduce and methods for analyzing unstructured data.

Learn Hadoop (including Pig, Hive, and HBase), Natural Language Processing, Social Network Analysis, Simulation, Random Forests, Multinomial Logistic Regression, and Data Visualization.  Instructor-Led Training  Online ILT  Video-ILT (VILT)  e-Learning

Prepare for your Data Scientist, Advanced Analytics Specialist (EMCDS) Certification.

Course

Advanced Methods in Data Science and Big Data Analytics

This course takes an 'open' or technology-neutral approach and utilizes several open-source tools to address big data challenges. The course builds on skills developed in the Data Science and Big Data Analytics course.

- Develop and execute MapReduce functionality
- Gain familiarity with NoSQL databases and Hadoop Ecosystem tools for analyzing large-scale, unstructured data sets
- Develop a working knowledge of Natural Language Processing, Social Network Analysis, and Data Visualization concepts
- Use advanced quantitative methods, and apply one of them in a Hadoop environment
- Apply advanced techniques to real-world datasets in a final lab


(5 days)

This course contains the following modules:

Module 1: MapReduce and Hadoop

- The MapReduce Framework
- Apache Hadoop
- Hadoop Distributed File System
- YARN

Module 2: Hadoop Ecosystem and NoSQL

- Hadoop Ecosystem
- Pig
- Hive
- NoSQL - Not only SQL
- HBase
- Spark

Module 3: Natural Language Processing

- Introduction to NLP
- Text Preprocessing
- TFIDF
- Beyond Bag of Words
- Language Modeling
- POS Tagging and HMM
- Sentiment Analysis and Topic Modeling

Module 4: Social Network Analysis

- Introduction to SNA and Graph Theory
- Most Important Nodes
- Communities and Small World
- Network Problems and SNA Tools

Module 5: Data Science Theory and Methods

- Simulation
- Random Forests
- Multinomial Logistic Regression

Module 6: Data Visualization

- Perception and Visualization
- Visualization of Multivariate Data

The Course above requires the following prerequisites:

- Completion of the Associate-level Data Science and Big Data Analytics course
- Proficiency in at least one programming language such as Java or Python

[Click here for more details >>](#)

Purchase Options

Adv Analytics DSBD VVPk VILTS
Includes one Video ILT course

CE-VIDPKDSAA


Advanced Analytics DSBD ValuePak
Includes one Instructor-Led course

CE-VALPAKDSAA


Isilon Solutions

TARGET AUDIENCE: Benefits storage professionals involved with administration of Isilon storage cluster.

Configure network, physical and logical layout, basic and advanced SMB, NFS client access; gain the knowledge for FTP, HTTP configurations; data protection/replication in single and multi-cluster implementations, archive deployment, snapshots and replication, SNMP integration, data protection, analytics, support and monitoring, and troubleshooting. Prepare for your Isilon Solutions Specialist (EMCSA) certification.



| Certification Alignment | |
|-------------------------|---------------------|
| Expert | N/A |
| Specialist | E20-559 Exam |
| Associate | E05-001 Exam |

- Instructor-Led Training
- Online ILT
- Video ILT (VILT)
- e-Learning

Specialist Courses

Isilon Administration and Management

Isilon cluster; Cluster Layout and Access; File Access; Storage Management; Application Integration; Monitoring; Troubleshooting

- Understand the overall Isilon cluster architecture
- Explain the cluster layout and different types of access
- Navigate the details of file access
- Demonstrate an understanding of storage management
- Understanding iSCSI in an Isilon environment, SmartPools, SmartConnect Advanced, SyncIQ, Isilon Backup options, virtualization in an Isilon environment
- Execute application integration
- Utilize the tools to perform cluster monitoring
- Identify the situations, symptoms, and resolutions to troubleshooting a cluster

(5 days)

Isilon Installation and Initial Configuration

Product documentation, tools, and support; node installation and cabling; initial cluster configuration; cluster testing and verification; Isilon remote support.

(1.5 hrs)

Isilon Fundamentals ◀ Start here

This course provides an introduction and basic understanding of the EMC Isilon scale-out Storage Platform. It includes an overview of the Isilon architecture, features, and functionality.

(1 hr)

Advanced Courses

Isilon Advanced Administration

System commands, log analysis, sound practices, advanced cluster monitoring, network troubleshooting, SmartConnect issues, disaster recovery, upgrades, data layout and protection, performance issues.

- Use notifications and events to identify and diagnose issues
- Navigate the system log structure
- Perform log analysis
- Identify and resolve networking and SmartConnect issues
- Perform trend analysis to find anomalies
- Establish sound administrative practices
- Identify disaster recovery options for Isilon clusters
- Differentiate between and explain upgrade options
- Understand the overhead and impact of different data protection options
- Understand latency and performance issues

(5 days)

[Click here for more details >>](#)

Purchase Options

Isilon Solution VVPK VILTS

Includes one Video ILT and two e-Learning courses.

CE-VIDVPKISAM



Isilon Solutions ValuePak

Includes one Instructor-Led or Online-ILT and two e-Learning courses.

CE-VPISILONAM



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For local pricing and purchase options, contact your EMC account representative.

Unity Solutions

TARGET AUDIENCE: Benefits storage professionals who plan to install, configure, and manage EMC Unity Systems.

Students will learn the key elements of EMC Unity storage systems features and functionalities, implementation, configuration, storage provisioning, data protection, benefits and use cases, and performance. The curriculum includes hands-on labs.

Prepare for your Unity Solutions Specialist (EMCIE) certification.



Certification Alignment

| | |
|------------|--------------|
| Expert | N/A |
| Specialist | E20-393 Exam |
| Associate | E05-001 Exam |



Specialist Courses

Unity Deep Dive

An instructor-led training offering for those who desire a structured learning experience including hands-on labs. Content includes an introduction to EMC Unity storage systems benefits and use cases, performance, architecture overview, detailed description of features and functionality, implementation and configuration, hands-on storage provisioning, data protection, storage management and monitoring, UnityVSA implementation and configuration.

- Discuss the Unity solutions offered by EMC
- Describe key use cases and associated performance characteristics of the Unity platform
- Describe features and hardware/software options
- Initialize the storage system and configure settings and features
- Provision block and file storage to hosts using the Unisphere GUI
- Configure and perform data protection operations
- Manage and monitor the storage system using Unisphere GUI
- Implement and configure the UnityVSA


 (2 days)

Unity Learning Center Start here

A self-paced training offering for those who desire flexibility and on-demand access to training topics. Content covers an introduction to EMC Unity storage systems benefits and use cases, architecture overview, detailed description of features and functionality, implementation and configuration, storage provisioning, data protection, storage management and monitoring, UnityVSA implementation and configuration

- Discuss the Unity solutions offered by EMC
- Identify key use cases supported by the Unity platform
- Describe features and hardware/software options
- Initialize the storage system and configure settings and features
- Provision block and file storage to hosts using the Unisphere GUI
- Configure and perform data protection operations
- Manage and monitor the storage system using Unisphere GUI
- Implement and configure the UnityVSA

 (12 hrs)

[Click here for more details >>](#)

Purchase Options

The courses listed above can be purchased individually with a subscription, training units, or credit card. See page 6 for details.

XtremIO Solutions

TARGET AUDIENCE: Benefits storage professionals who plan to manage, monitor, and support XtremIO storage arrays.

Students will learn the key elements of provisioning storage from XtremIO arrays to hosts, performing operations on live volumes, and measuring performance. You will also learn monitoring and supporting XtremIO storage arrays.

Prepare for your XtremIO Solutions Specialist (EMCSA) certification.



| Certification Alignment | |
|-------------------------|---------------------|
| Expert | N/A |
| Specialist | E20-568 Exam |
| Associate | E05-001 Exam |

Instructor-Led Training
 Online ILT
 Video ILT (VILT)
 e-Learning

Specialist Courses

Optimizing Storage Services for Applications with XtremIO

XtremIO product overview; cluster management interface; storage presentation, snapshots, features and integration, performance and reporting, data protection, application integration, advanced management operations.

- Describe proper configuration and integration of XtremIO systems for end to end communication and all points in between
- Obtain maximum availability from a solution by properly configuring replication and proactive monitoring through alerts and basic troubleshooting
- Analyze workloads and optimize for maximum performance thresholds
- Create custom reports to determine patterns and confirm with SLA guidelines
- Describe data protection capabilities of XtremIO using RecoverPoint, VPLEX, and AppSync
- Describe integration best practices for VDI and Oracle environments

(3 days)

XtremIO Fundamentals Start here

Introduction, Architecture, Features, Management Overview

(1.5 hrs)

Connectrix Fundamentals

Storage connectivity overview, SAN architecture and components, SAN fabric topologies, EMC's Connectrix range, securing a SAN, SAN management tools, IP-based SAN extension, SAN technical positioning

(1.5 hrs)

PowerPath Fundamentals

Terminology, features, architecture, theory of operations and management

(1 hr)

PowerPath Configuration and Administration

Theory of Operations, Operations and Administration, Performance Monitoring and Troubleshooting, Interoperability Concepts

(2.5 hrs)

RecoverPoint Fundamentals

Overview of EMC RecoverPoint, architecture of EMC RecoverPoint, planning and design considerations implementation overview

(1 hr)

AppSync Fundamentals

Introduction to AppSync, installation of AppSync, Management and Configuration, Alerts, Reports, and Logging

(1 hr)

[Click here for more details >>](#)

Purchase Options

XtremIO 4.x Video VPK VILTS

Includes one Video ILT and six e-Learning courses.

CE-VIDVPKXTIO



XtremIO 4.x ValuePak

Includes one Instructor-Led or Online-ILT and six e-Learning courses.

CE-VALPAKXTIO



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For local pricing and purchase options, contact your EMC account representative.

VNX Solutions

TARGET AUDIENCE: Benefits storage professionals who are deploying and managing VNX Unified Storage (VNX with MCx and First Generation VNX) in a Windows, Linux, and VMware ESXi environments.

Configure and manage VNX Series Block based SAN solutions (FC, iSCSI, and FCoE) and File based NAS solutions (NFS and CIFS) in heterogeneous, virtualized, and open systems environments, including array, host access, VNX SnapView, VNX SnapShot and VNX SnapSure solutions. Prepare for your Specialist-level Storage Administrator VNX Solutions Certification.



Certification Alignment

| | |
|------------|--------------|
| Expert | N/A |
| Specialist | E20-547 Exam |
| Associate | E05-001 Exam |



Specialist Courses for Unified (Block and File) Deployment

VNX Unified Storage Management

Unisphere security and basic management; storage provisioning and management; managing host access to Block storage; host integration basics; Windows host installation and integration for Block; host installation and integration for Linux; host installation and integration for ESXi; advanced storage concepts; VNX Block local replication principles; SnapView Snapshot configuration; VNX SnapView Clone configuration; VNX Snapshots; basic network configuration; configuring File systems; exporting File systems to Linux and ESXi; Configuring CIFS; virtual data movers; Networking features; Data Mover Failover; VNX SnapSure

- Implement Unisphere security
- Provision and manage host access to Block storage
- Perform basic host integration tasks for Block storage
- Integrate Microsoft Windows, Linux, and ESXi hosts to VNX Block storage
- Configure and manage advanced storage features such as FAST VP and FAST Cache
- Configure basic networking for VNX file-level access
- Configure VNX file systems
- Export VNX file systems for NFS and CIFS access
- Create and manage Virtual Data Movers
- Configure & manage VNX local replication solutions—SnapView, Snapshots, SnapSure



The Instructor-Led Course above is supported by the following e-Learning prerequisites:

VNX Fundamentals

Start here

Overview on VNX system features and functions, business use cases, architecture and theory of operations, VNX hardware/software options and suites, management options and capabilities



VNX Local Protection Suite Fundamentals

Local Protection Suite Components, VNX SnapView, VNX SnapSure, RecoverPoint/SE features, functionality, and management



VNX Remote Protection Suite Fundamentals

VNX Remote Protection Suite, VNX MirrorView, VNX Replicator & RecoverPoint/SE Remote Protection architecture, functions, and theory of operation.



VNX Application Protection Suite Fundamentals

Replication Manager – Overview and Feature & Functionality, AppSync – Overview and Feature & Functionality



VNX FAST Suite Fundamentals

Feature, functionality and use cases for FAST Cache and FAST VP



VNX Events and Retention Suite Fundamentals

Events and Retention suite components, Features and use cases for VNX File Level Retention, and Event Enabler



VNX Unified Storage Provisioning using Wizards

Overview on block and file storage provisioning for Windows, UNIX/Linux, and Virtualized environments using Unisphere LUN provisioning Wizards



EMC Storage Integration with VMware vSphere Best Practices

VMware storage environment, ESXi networking and storage, generic VMware storage considerations, specific VNX and Symmetric considerations, tools, APIs, plug-ins.



Alternative Courses for Block Only or File Only Management

VNX Block Storage Management

This course provides participants with hands on experience integrating VNX block access for open systems hosts (Linux, Windows, and VMware ESXi) through FC, iSCSI, and, FCoE connectivity options.



VNX File Storage Management

This course provides participants with hands-on experience integrating VNX file-level access configured for Windows, Unix, and VMware user/application environments via NFS and CIFS environments.



Additional credentials related to CLARiiON and NAS (Celerra) are available. Visit <http://education.EMC.com> for details.

[Click here for more details](#) >>

Purchase Options

VNX Unified Sol VVPK VILTS

Includes one Video ILT and 8 self-paced e-Learning courses.

CE-VIDVPKVN



VNX Unified Solutions ValuePak

Includes one Instructor-Led or Online ILT course and 8 self-paced e-Learning courses.

CE-VALPAKVN



VNX FileOrBlock Sol VVPK VILTS

Includes one Video ILT and 8 self-paced courses. Choose either File or Block course

CE-VIDPKVNFB



VNX File or Block Solutions ValuePak

Includes one Instructor-Led or Online ILT course and 8 self-paced e-Learning. Choose either File or Block course.

CE-VALPKVNFB



VNX Solutions—Advanced Courses

TARGET AUDIENCE: Benefits storage professionals who focus on VNX Unified performance and VNX Unified replication technologies.

-  Instructor-Led Training
-  Online ILT
-  Video ILT (VILT)
-  e-Learning

Replication for VNX

VNX Block Storage Remote Protection with MirrorView

SAN Copy and Incremental SAN Copy, MirrorView/A and MirrorView/S, Remote Replication Hardware, FC/IP Protocols, Replication Manager

- Manage SAN Copy and Incremental SAN Copy operations
- Manage MirrorView/A and MirrorView/S operations
- Discuss Replication Manager Operations

 (2 days)

VNX File Storage Remote Protection with Replicator

CIFS DR Solution Overview, Usermapper in a Replication Environment, VDMs in a Replication Environment, Replication for a CIFS DR Solution

- Plan for Disaster Recovery in a Microsoft Windows environment
- Configure a Microsoft Windows DR plan using EMC VNX for File VDMs & Replicator
- Implement and test a Microsoft Windows DR plan using EMC VNX for File VDMs and Replicator

 (2 days)

Note: Also see pages 34 and 35: VPLEX curriculum for enterprise data mobility solution and RecoverPoint curriculum for Block remote replication solution; see page 36 for application (MS SQL, Microsoft Exchange, Oracle) protection of replicas using AppSync.

Performance Management for VNX

VNX Unified Storage Performance Workshop

Analysis of Performance Data, Disk Type and LUN Layout Impact on Performance, VNX File System Impact on Performance, Data Compression and Block Deduplication Performance Considerations, File Deduplication Performance Considerations, FAST Suite Performance Considerations, VNX SnapSure, VNX Snapshots, SnapView Snapshot, and SnapView Clone Performance considerations, VNX Replicator, SAN Copy, and MirrorView Performance Considerations, Host Performance, EMC Xtrem Performance, Storage Performance Planning and Sizing for Desktop-as-a-Service

- Determine VNX Unified performance using metrics and workload analysis
- Use Block and File performance tools for analysis and troubleshooting
- Describe the performance implications regarding different drive types and LUN Layout, and AVM performance considerations
- Describe the performance implications of data compression and deduplication, FAST VP and FAST cache
- Explain the performance impact of local and remote replication solutions
- Size and validate a VDI (Virtual Desktop Infrastructure) storage solution for application performance



(5 days)

VNX Block Storage Performance Workshop

Analysis of Performance Data, Disk Type and LUN Layout Impact on Performance, Data Compression and Block Deduplication Performance Considerations, FAST Suite Performance Considerations, VNX Snapshots, SnapView Snapshot, and SnapView Clone Performance considerations, SAN Copy, and MirrorView Performance Considerations, Host Performance, EMC Xtrem Performance, Storage Performance Planning and Sizing for Desktop-as-a-Service

- Determine VNX Block performance using metrics and workload analysis
- Use Block performance tools for analysis and troubleshooting
- Describe the performance implications regarding different drive types and LUN Layout
- Describe the performance implications of data compression and deduplication, FAST VP and FAST Cache
- Identify performance impact of Block local and remote replication solutions
- Size and validate a VDI (Virtual Desktop Infrastructure) storage solution for application performance



(3 days)

Storage Performance Fundamentals

Performance Introduction, Terminology, Disk, Cache and, Application Workload Considerations, RAID, SAN and NAS Performance Differences, Performance Benchmarking, and Benchmarking Tools

 (2 hrs)

VNX Performance Monitoring and Analysis Tools

Unisphere Statistics and Secure CLI, Performance Monitoring with server_stats, Unisphere Analyzer, Host-based Performance Tools, Iometer Implementation

 (2 hrs)

Note: Refer to page 55 for courses on EMC Storage Integration Best Practices with Microsoft Exchange, Microsoft SQL, and Oracle.










VNXe Solutions (VNXe 3200)

TARGET AUDIENCE: Benefits IT generalists deploying, managing, and supporting VNXe storage solutions (VNXe2) in open system and virtual host environments.

Install, implement, manage, and perform basic troubleshooting on VNXe storage system in Block-based SAN solutions (FC and iSCSI), and File-based NAS solutions (NFS and CIFS), including data protection using Unified Snapshots and performance and capacity optimization using FAST suite.



e-Learning Courses

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| VNXe Fundamentals Start here Overview on VNXe system features and functions, use cases, architecture and theory of operations, VNXe hardware/software options and suites, management options and capabilities |  (1.5 hrs) |
| VNXe Installation and Initial Configuration Hardware components; unpacking the system; preparing the environment; rack and installation; cabling the system; initial system configuration. |  (1 hr) |
| Host to VNXe SAN Implementation Host Configuration – ESXi, Linux, and Windows, SAN Configuration, Configuring B-Series and MDS-Series Zoning, Volume Access Configuration. |  (2 hrs) |
| VNXe Block Storage Implementation Block storage interface implementation; FAST configuration; VNXe logical storage resources; FC Host connectivity; iSCSI Host connectivity. |  (1 hr) |
| VNXe File Storage Implementation VNXe network environment implementation; NAS Server implementation; file storage provisioning. |  (1 hr) |
| VNXe Storage Implementation for VMware Environments VMware host configuration; VMFS Datastore creation and presentation; NFS Datastore creation and presentation. |  (0.75 hrs) |
| VNXe Management Block and file storage provisioning in Microsoft Windows, UNIX/Linux, and virtualized environment using Unisphere, managing Unisphere security, basic monitoring, FAST, and configuring Unified Snapshots. |  (2 hrs) |
| VNXe Security and Data Protection Management VNXe security management; storage protection. |  (1.5 hrs) |
| VNXe Maintenance VNXe online support resources, identifying failed hardware, system health and alerts, CRU and FRU replacement guidelines, CRU and FRU replacement demos, Software upgrades and licenses. |  (3 hrs) |

Note: Also see page 34: VPLEX Virtual Edition (VPLEX/VE) for VNXe data mobility.

[Click here for more details >>](#)

Purchase Options

VNXe eLearning ValuePak
Includes nine self-paced e-Learning courses.

CE-EVALPAKVNXE
 

Storage Area Network (SAN Connectrix)

TARGET AUDIENCE: Benefits any storage professional who deploys and manages multi-site, multi-vendor SAN environments.

Focus on Connectrix family of switches and host to storage connectivity through single and multi-vendor fabrics, Fibre Channel and iSCSI environment scenarios, as well as virtualized environments, and troubleshooting of common management issues. Prepare for your Specialist-level Storage Administrator Storage Area Network (SAN) Certification.



| Certification Alignment | |
|-------------------------|--------------|
| Expert | N/A |
| Specialist | E20-532 Exam |
| Associate | E05-001 Exam |

- Instructor-Led Training
- Online ILT
- Video ILT (VILT)
- e-Learning

Courses

SAN Management

Overview, MDS-Series Switch Tools, B-Series Switch Tools, SAN Management, Fabric Configuration, Interoperability Management, Virtualization, SAN Transformation, Troubleshooting and Monitoring

- Describe the tools and methods for effective SAN Management
- List the steps to configure a Fibre Channel, FCIP and iSCSI SAN
- Configure SAN switches for single and multi-switch fabrics
- Perform basic maintenance and troubleshooting tasks
- Connect and configure Inter-Switch Links
- Demonstrate zoning and other SAN tasks using CLI and GUI-based tools
- Configure an Interoperable fabric
- Configure NPIV for virtualization of SAN hosts
- Troubleshoot and correct common SAN management issues

(5 days)

The Instructor-Led Course above is supported by the following e-Learning prerequisites:

VNX Fundamentals Start here

Overview on VNX system features and functions, business use cases, architecture and theory of operations, VNX hardware/software options and suites, management options and capabilities

(1.5 hrs)

Symmetrix VMAX Fundamentals

VMAX 1/2 architecture, Enginuity and I/O operations, volume types, features, management and business benefits

(1.5 hrs)

PowerPath Fundamentals

Terminology, features, architecture, theory of operations and management

(1 hr)

Connectrix Fundamentals

Storage connectivity overview, SAN architecture and components, SAN fabric topologies, EMC's Connectrix range, securing a SAN, SAN management tools, IP-based SAN extension, SAN technical positioning

(1.5 hrs)

Connectivity Protocols

Fibre Channel, iSCSI, FCIP, FCoE

(4 hrs)

PowerPath Configuration and Administration

Features and functionality of PowerPath across multiple UNIX and Windows platforms, for both VMAX 1/2 and CLARiiON storage platforms

(2.5 hrs)

Connectrix B-Series Architecture & Management Overview

Connectrix B-Series product overview, installation and configuration, FCoE product overview, FCoE installation and configuration

(2 hrs)

Connectrix MDS-Series Architecture & Management Overview

MDS configuration, basic implementation, and ongoing management interfaces, switch segmentation with VSANs and scalability with SAN extension

(2 hrs)

[Click here for more details >>](#)

Purchase Options

SAN VVPK VILTS

Includes one Video ILT and eight self-paced e-Learning courses.

CE-VIDVPKSAN



SAN ValuePak

Includes one Instructor-Led or Online ILT and eight self-paced e-Learning courses.

CE-VALPAKSAN



Storage Area Network—Advanced Courses

TARGET AUDIENCE: Benefits storage professionals responsible for architecting and implementing SAN solutions.

This includes SAN implementation activities on EMC Storage Arrays in an Open system host environment, setting up advanced SAN configurations, diagnosing and troubleshooting SAN performance, and the troubleshooting and maintenance of storage area networks. These are advanced courses and require previous training or experience in a SAN environment and benefit any storage professional who deploys and manages multi-site, multi-vendor SAN environments.



Advanced Courses

SAN Performance Workshop

SAN performance overview, protocol performance, performance tools and methods, node performance, fibre channel SAN performance, IP SAN performance, virtualized SAN performance

- Diagnose and troubleshoot SAN performance issues related to poor node layout, ISL bottlenecks, network problems, and EMC features
- Identify performance bottlenecks and poorly configured components
- Make performance-oriented recommendations for virtualized SANs

 (5 days)

Host to Storage SAN Implementation

Pre-implementation tasks, SAN and switch configuration, host configuration, storage configuration, advanced topics, post-implementation tasks

- Configure a SAN switch and perform basic operations
- Connect and configure a host to a storage array
- Perform host configuration for drivers, multipathing, and volume and file management



 (5 days)

Advanced SAN Implementation

Heterogeneous Fabric Migration, Fibre Channel Boot from SAN, Fibre Channel Routing, Virtualizing a SAN Environment, Securing a Fibre Channel SAN, Trace Analysis, Advanced iSCSI Configuration, Fibre Channel over Ethernet (FCoE), Connectrix Encryption, Fibre Channel over IP (FCIP)

- Describe start to end configuration of an advanced multiprotocol fabric
- Configure VSANs and Virtual Fabrics
- Configure B-Series and MDS-Series Fibre Channel Routing
- Secure iSCSI with CHAP, IPSEC and IKE
- Describe functionality, benefits and hardware requirements of Connectrix Encryption


 (5 days)

Troubleshooting Storage Area Networks

SAN, Fibre Channel, iSCSI, FCIP Extension, and FCoE SAN Troubleshooting. This course should be completed after Advanced SAN Implementation Workshop

- Analyze and correct ISL issues and fabric merge failures
- Show how to find and resolve virtualized SAN issues
- Analyze and correct Virtual Fabric and VSAN and iSCSI Discovery issues
- Analyze and correct IP Bridging devices


 (5 days)

Additional PowerPath Courses

PowerPath Migration Enabler Implementation

Overview, performing PowerPath migration, troubleshooting, advanced topics.

 (1 hr)

PowerPath/VE Implementation and Configuration

Overview, performing PowerPath migration, troubleshooting, advanced topics.

 (1.5 hrs)

Storage Area Network—Cisco and Brocade

TARGET AUDIENCE: Benefits data center professionals who work with Cisco—data center unified computing and Cisco MDS 9000 switches—and Brocade—CFA200 and CFP300.



Cisco Course

DCUCI—Data Center Unified Computing Implementation

Implement Cisco Unified Computing System (UCS) B-Series Blade Servers and Cisco UCS C-Series Rack-Mount Servers

- How Cisco UCS addresses key management challenges in data center server environments
- Cisco UCS B-Series and C-Series system architectures, hardware components, and field-installable options
- Connect to and manage Cisco Unified Computing System components
- Configure Cisco UCS B-Series blade servers with Cisco UCS Manager
- Configure Cisco UCS C-Series blade servers with Cisco IMC
- Connectivity requirements for the Cisco UCS platform
- Configure server profiles to allocate physical resources
- Configure maintenance tasks
- Configure high availability at the LAN, SAN, and server NIC level
- Common deployment scenarios
- Troubleshoot common LAN and SAN connectivity issues and service profile issues
- Configure Cisco Nexus 1000V in a VMware vSphere 4.1 environment
- Configure Cisco UCS Manager to support VMware PTS and DirectPath I/O



Configuring Cisco MDS 9000 Switches (DCMDS)

Cisco MDS 9000 Series switch platform, system installation and initial configuration, building a SAN fabric, intelligent SAN Fabric services, Fibre Channel over Ethernet implementation, implementing security and FBIP

- Identify the components, services, and features of the Cisco MDS 9000 Series switch platform that can be used to improve the availability, scalability, performance, and manageability of the SAN.
- Describe how to install and configure the Cisco MDS 9000 switch and perform the initial software configuration process.
- Explain how to implement the logical topology that is specified by a SAN design, so that connectivity between end devices can be verified.
- Describe the traffic management features associated with Intelligent Network Services for the Cisco MDS 9000 switches to configure basic traffic management services for the SAN.
- Describe how to configure Fibre Channel over Ethernet (FCoE), modules on Cisco MDS 9500 Series switches.
- Explain how to implement security so that management access is secure, and that only trusted devices are allowed to connect to the fabric.
- Describe how to use FCIP to implement appropriate solutions for SAN extension solutions



Brocade Courses

Brocade: Core Gen 5 SAN Administration (CFA200)

Introduction to Fibre Channel, switch installation and configuration, zoning, Inter-Switch Links (ISLs), ISL Trunking, Layer 2 routing, updating switch firmware, backing up switch configurations, and basic troubleshooting. Switch management tasks are performed using the CLI and Brocade Network Advisor v12.1.0.

- Install, configure, and verify Brocade switch functionality
- Perform maintenance tasks that include downloading firmware, validating firmware download, and backing up switch configurations; discuss Fibre Channel concepts
- Configure, verify, administer, and describe Brocade zoning
- Describe Layer 2 fabric routing and trunking functionality
- Perform basic troubleshooting processes and use Brocade error messages, commands, and diagnostics
- Identify management tools used to manage Brocade fabrics, such as Brocade Network Advisor, Host Connectivity Manager, Web Tools, and the CLI



Brocade: Advanced Gen 5 SAN Administration (CFP300)

Fibre Channel-to-Fibre Channel Routing (FC-FC Routing), Fibre Channel over Internet Protocol (FCIP), Adaptive Networking, Access Gateway, Virtual Fabrics (VF), Monitoring and Alerting Policy Suite (MAPS), Flow Vision, and Brocade management tools. Switch management tasks are performed using Telnet and Brocade Network Advisor v12.1.3.

- Implement Brocade Fibre Channel-to-Fibre Channel Routing (FC-FC Routing)
- Discuss Brocade Fibre Channel over Internet Protocol (FCIP)
- Use the Monitoring and Alerting Policy Suite (MAPS) to monitor a fabric switch
- Configure and use Flow Vision flows to track fabric activity
- Discuss virtual connectivity using NPIV and Brocade Access Gateway
- Implement Virtual Fabrics
- Managing advanced features using Brocade Network Advisor v12.1.3.



Symmetrix VMAX 1 & 2 Solutions

TARGET AUDIENCE: Benefits storage professionals implementing EMC VMAX 1/2-based solutions in heterogeneous open systems environments.

Drive efficient utilization of your storage resources using Unisphere for VMAX and Solutions Enabler (command line interface). Configure and manage the local and remote data replication capabilities offered by TimeFinder, SRDF, FAST, FTS, and Open Replicator on VMAX 1/2 systems. Prepare for your Specialist-level Storage Administrator Symmetrix Solutions Certification.



Certification Alignment

| | |
|-------------------|---------------------|
| Expert | E20-814 Exam |
| Specialist | E20-517 Exam |
| Associate | E05-001 Exam |



Specialist Courses

Symmetrix VMAX Configuration Management *

Configuration and device masking overview; device creation and mapping; VMAX 1/2 and device attributes; autoprovisioning groups; Virtual Provisioning concepts and planning; Virtual Provisioning with Solutions Enabler; Virtual LUN migration; monitoring Thin Pools; FAST and FAST VP with SYMCLI; Federated Tiered Storage (FTS); VMAX 1/2 configuration with Unisphere for VMAX. Based on Engenuity 5876 with SYMCLI and Unisphere for VMAX

- Provide an overview of VMAX 1/2 configuration and device masking
- Create and map VMAX 1/2 devices
- Describe how to set VMAX 1/2 and device attributes
- Map and mask devices using autoprovisioning
- Describe Virtual Provisioning concepts; manage it with Solutions Enabler
- Monitor thin pools; migrate devices non-disruptively using Virtual LUN Migration
- Describe FAST and FAST VP concepts; manage them with SYMCLI
- Describe Federated Tiered Storage
- Describe VMAX 1/2 configuration with Unisphere for VMAX



Symmetrix VMAX Business Continuity Management †

TimeFinder/Clone operations, TimeFinder/VP Snap operations, SRDF/Synchronous operations, SRDF/Asynchronous operations, Open Replicator for VMAX 1/2 operational details. Based on Engenuity 5876 with SYMCLI and Unisphere for VMAX.

- Describe and perform TimeFinder/Clone and TimeFinder/Snap operations
- Describe and perform SRDF operations in Synchronous (SRDF/S) and Asynchronous (SRDF/A) modes using SYMCLI and Unisphere for VMAX
- Describe and perform SRDF/Automated Replication (SRDF/AR) operations
- Describe and perform Open Replicator for Symmetrix (ORS) data replication in
- Hot/Cold, Push and Pull scenarios



The Instructor-Led Course above is supported by the following e-Learning prerequisites:

Symmetrix VMAX Fundamentals * † [Start here](#)

VMAX 1/2 architecture, Engenuity and I/O operations, volume types, features, management and business benefits



Connectrix Fundamentals †

SAN Architecture and Components, SAN Fabric Topologies, EMC's Connectrix Range, Securing a SAN, SAN Management Tools, IP-Based SAN Extension



PowerPath Fundamentals †

Terminology, features, architecture, theory of operations and management



Symmetrix VMAX TimeFinder Fundamentals * †

TimeFinder terminology, features, architecture, theory of operations and management, TimeFinder Mirror, Clone, and Snap local replication solutions



Symmetrix VMAX SRDF Fundamentals * †

SRDF connections and configurations, modes of operation and SRDF family options, SRDF management software and basic operations



Symmetrix VMAX Open Replicator and Federated Live Migration Fundamentals *

Open Replicator fundamentals, overview of Federated Live Migration



Symmetrix VMAX Solutions Enabler Implementation *

Installation, options and environment variables, gatekeeper management, Solutions Enabler Daemons



Unisphere for Symmetrix VMAX Implementation and Management *

Overview and architecture; documentation and installation; Unisphere for VMAX interface; UNIVMAX administration



EMC Storage Integration with VMware vSphere Best Practices *

VMware storage environment, ESXi networking and storage, generic VMware storage considerations, specific VNX and Symmetrix considerations, tools, APIs, plug-ins.



* Included in Symmetrix Management ValuePak

† Included in Symmetrix Business Continuity ValuePak

[Click here for more details](#) >>

Purchase Options

Symmetrix Mgmt VVPK VILTS

Includes one Video ILT (*) and 7 self-paced e-Learning courses (*).

CE-VIDVPKSMGT



Symmetrix Management ValuePak

Includes one Instructor-Led or one Online ILT (*) course and 7 self-paced e-Learning courses (*).

CE-VALPAKSMGT



Symmetrix BC VVPK VILTS

Includes one Video ILT (†) and five self-paced e-Learning courses (†).

CE-VIDVPKBC



Bus. Cont for Symmetrix ValuePak

Includes one Instructor-led or one Online ILT (†) and five self-paced e-Learning courses.

CE-VALPAKBC



VMAX 1&2 Solutions—Expert Courses

Gain the knowledge and skills required to design, size and configure highly available and automated EMC VMAX 1&2-based solutions in heterogeneous open system environments; including SRDF/Star and integration with Oracle, Exchange and SQL Server applications for point-in-time recoverability. The track also focuses on best practices integrating EMC VMAX 1&2 storage systems with VMware vSphere vCenter and ESXi.

Prepare for your Expert-level Storage Administrator Symmetrix Solutions Certification.



| Certification Alignment | |
|-------------------------|--------------|
| Expert | E20-814 Exam |
| Specialist | E20-517 Exam |
| Associate | E05-001 Exam |

- Instructor-Led Training
- Online ILT
- Video ILT (VILT)
- e-Learning

Expert Courses

| | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| <p>Symmetrix VMAX Performance Workshop Introduction, Measurements, Tools, Analysis, VMAX 1&2 Front-End, VMAX 1&2 Cache, VMAX 1&2 Back-End, Business Continuance</p> | <ul style="list-style-type: none"> • Relate the architecture and I/O handling processes to their performance benefits • Performance impact different types of workloads have on architectural components • Performance Manager metrics to identify performance bottlenecks & over utilization • Make performance-oriented recommendations when allocating new storage or migrating applications | (4 days) |
| <p>Symmetrix VMAX Security Concepts Start here Conceptual approach to VMAX 1&2 storage data security, methods of securing VMAX 1&2 data, understanding the terminology used in the security of information in distributed VMAX 1&2 storage systems and the methods to prevent unauthorized access</p> | | (1.5 hrs) |
| <p>Symmetrix VMAX SRDF Star and Cascaded SRDF Solutions Cascaded SRDF, SRDF/EDP and SRDF/Star in Open Systems environments, implement Star, SRDF/Star using concurrent and cascaded SRDF, positioning, architecture and operations of SRDF/Star</p> | | (1.5 hrs) |
| <p>EMC Storage Integration with Microsoft Exchange Best Practices Microsoft Exchange Server 2010 Overview, storage design, virtualization best practices</p> | | (1.5 hrs) |
| <p>EMC Storage Integration with Microsoft SQL Best Practices SQL server overview, SQL server sizing and array based replication, SQL server virtualization</p> | | (1 hr) |
| <p>EMC Storage Integration with Oracle Best Practices The Oracle environment, Oracle storage layout best practices, virtualization best practices/considerations</p> | | (1.5 hrs) |

Additional Courses

| | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <p>Symmetrix VMAX SRDF/Star and Cascaded SRDF-Implementation and Management Consistency and the role of the SRDF daemon, cascaded SRDF and SRDF/EDP, concurrent SRDF/Star normal operation, dealing with transient faults and workload site disaster while running concurrent Star, recovery from faults in a cascaded Star configuration, maintenance activities</p> | <ul style="list-style-type: none"> • List SRDF Three Data Center Solutions • Describe Cascaded SRDF solutions including SRDF/EDP • Set up an SRDF/Star configuration • Operate an SRDF/Star configuration under normal and fault conditions • Perform routine maintenance work on a Star configuration | (4 days) |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|

Note: Also see page 34: VPLEX curriculum for enterprise data mobility solution.

VMAX³ Solutions

TARGET AUDIENCE: Benefits storage professionals who deploy and manage the VMAX³ cloud data platform.

You will learn the architecture, features, functions, and management options of VMAX³. You will also learn to implement Solutions Enabler and Unisphere for VMAX to manage VMAX³ arrays.

Prepare for your Specialist-level Storage Administrator VMAX³ Solutions certification.



Certification Alignment

| | |
|-------------------|---------------------|
| Expert | E20-807* |
| Specialist | E20-507 Exam |
| Associate | E05-001 Exam |



Specialist Courses

VMAX³ Configuration Management

Configuration management overview, virtual provisioning and FAST concepts, device creation and port management, storage allocation using autoprovisioning groups, monitoring and workload planning with Unisphere for VMAX, eNAS overview and management, management in a virtualized environment

- Provide an overview of VMAX³ configuration and storage provisioning
- Describe virtual provisioning concepts & automated tiering in VMAX³ arrays
- Create VMAX³ thin devices; Manage ports and port characteristics
- Perform service level objective based provisioning to hosts
- Set/change Host I/O limits, SLO and Workload Type; Monitor Storage Resource Pools and SLO Compliance; Use Unisphere for VMAX for Workload Planning; Provide an overview of the eNAS solution for VMAX³ Arrays
- Manage eNAS; Provide an overview of VMAX³ storage management in a virtualized environment



VMAX³ Business Continuity Management

TimeFinder SnapVX operations, SRDF/Synchronous operations, SRDF/Asynchronous operations

- Describe and perform TimeFinder SnapVX operations with SYMCLI and Unisphere for VMAX – in physical and virtualized environments
- Describe and perform SRDF operations in Synchronous (SRDF/S) and Asynchronous (SRDF/A) modes using SYMCLI and Unisphere for VMAX – in physical and virtualized environments



The Instructor-Led Courses above are supported by the following e-Learning prerequisites:

VMAX³ Fundamentals

[Start here](#)

Introduction to VMAX³ storage systems, overview of architecture, features, and functionality



VMAX³ Solutions Enabler Implementation

Overview of installation of Solutions Enabler on Windows & UNIX platforms, usage of common options & environment variables that govern its behavior.



VMAX³ Unisphere for VMAX Implementation and Management

Configuration, management, and performance monitoring of VMAX family arrays using Unisphere for VMAX, a simple, intuitive, browser-based user interface.



VMAX³ Local Replication Fundamentals

Introduction to VMAX³ family Local replication offerings, overview of Timefinder architecture, features, and functionality.



VMAX³ Remote Replication Fundamentals

Introduction to VMAX³ family Remote replication offerings, overview of SRDF architecture, features, and functionality.



VMAX³ Solutions—Expert Courses*

* Curriculum and E20-807 exam will be available in mid-May 2016

Expert Courses

VMAX³ Performance Workshop

Architecture and configuration best practices; performance analysis basics; performance analysis with Unisphere for VMAX, performance analysis of Front End Directors, Cache, Backend Directors, considerations for TimeFinder SnapVX and SRDF

- Describe the architecture of the VMAX³ from a performance perspective
- Articulate VMAX³ configuration best practices for optimal performance
- Use Unisphere for VMAX for performance analysis of VMAX³ arrays
- Identify the performance impact different types of workloads
- Use key metrics to identify performance bottlenecks & components over utilization
- Make performance-oriented recommendations when allocating new storage or migrating applications



VMAX³ Security Concepts

[Start here](#)

Security system, D@RE, authentication and authorization, host-based access controls.



VMAX³ FAST.X Solutions

Introduction to FAST.X, connectivity requirements, eDisk management, FAST.X use cases.



VMAX³ Multi-site SRDF Solutions

Overview, concurrent and cascaded SRDF, underlying technologies for SRDF/Star. concurrent and cascaded SRDF/Star.



VMAX³ SRDF/Metro Solutions

Overview, theory of operations, configuration and management.



[Click here for more details](#) >>

Purchase Options

VMAX³ Management and Business Continuity Video ValuePak
Includes two Video ILT and five self-paced e-Learning courses.

CE-VIDVPKVMAX3MAN

VMAX³ Management and Business Continuity ValuePak
Includes two Instructor-Led or Online ILT course, and five self-paced e-Learning courses.

CE-VALPAKVMAX3MAN

VMAX All Flash

VMAX All Flash Fundamentals

Overview, benefits and use cases, models and corresponding software options, all flash benefits.

 (0.5 hrs)

Mainframe (VMAX 1 & 2 , Disk Library for Mainframe)

TARGET AUDIENCE: Benefits any storage professional responsible for management and administration of Symmetrix-based local and/or remote replication using the TimeFinder and/or SRDF suite of products in z/OS environments

The Mainframe learning path expands knowledge, skills, and expertise in configuring and managing VMAX 1/2 business continuity solutions in a z/OS environment.

 Instructor-Led Training  Online ILT  Video ILT (VILT)  e-Learning

Mainframe Specialist Courses

Symmetrix VMAX Mainframe Business Continuity Management

Introduction to Business Continuity, TimeFinder/Mirror, Introduction to TimeFinder Clone and Snap Capabilities, TimeFinder Clone and Snap Capabilities, Common TimeFinder Clone and Snap Features, TimeFinder Utility, Introduction to Remote Replication Solutions, SRDF/S (Synchronous), SRDF/CG (Consistency Groups), SRDF/AR (Automated Replication), SRDF/A (Asynchronous), SRDF/A with MSC (Multi-Session Consistency)

- Describe and demonstrate TimeFinder management operations, including TimeFinder/Mirror, TimeFinder Snap/Clone Facility and TimeFinder Utility
- Explain important host considerations for successful implementations of local and replication solutions using TimeFinder and SRDF in z/OS environments
- Describe and demonstrate SRDF configuration, management and recovery operations for the SRDF/S and SRDF/A base products and the add-on products SRDF/CG and SRDF/AR
- Describe the advanced SRDF/A features of Transmit Idle, Delta Set Extension, Write Pacing and Automated Recovery
- Describe the architecture and operations of Cascaded SRDF as well as SRDF/EDP

 (3 days)

The Instructor-Led Course above is supported by the following e-Learning prerequisites:

Unisphere for VMAX Mainframe Fundamentals

Introduction, architecture, features and capabilities, management overview

 (1.5 hrs)

AutoSwap Architecture and Operations *

Introduction, Considerations, Swap Operations, AutoSwap Parameters

 (2 hrs)

Introduction to Mainframe ResourcePak Base *

Installation, starting and stopping, group name services, save device monitor, SCF recovery services, pool management, quality of service, disk compare

 (2 hrs)

Symmetrix VMAX TimeFinder Fundamentals *

TimeFinder terminology, features, architecture, theory of operations and management, TimeFinder Mirror, Clone, and Snap local replication solutions

 (1 hr)

Symmetrix VMAX SRDF Fundamentals *

SRDF connections and configurations, modes of operation and SRDF family options, SRDF management software and basic operations

 (2 hrs)

Symmetrix VMAX Fundamentals *

VMAX 1/2 platforms and architecture, VMAX 1/2 I/O operations and volume types, VMAX 1/2 features and management

 (2 hrs)

Disk Library for Mainframe Courses

Disk Library for Mainframe (DLm) Management

DLm overview, VTEC Hardware, VTEC Software, DLm Operations and Implementation, z/OS configuration and utilities, Command Processors and GENSTATS, DLm Replication

- Describe the configuration options, components, and features of the product
- Setup and configure a DLm
- Execute the mainframe batch utilities
- Explain use of Command Processors and GENSTATS

   (2 days)

Disk Library for Mainframe (DLm) Fundamentals

Tape on Disk, DLm product family overview, DLm hardware, software, replication, and Command Processors and GENSTATS

 (2 hrs)

[Click here for more details >>](#)

Purchase Options

Mainframe Vid VVPK VITLS

Includes one Video ILT and six self-paced e-Learning courses.

CE-VIDVPKMF



Disk Library for Mainframe ValuePak

Includes one Instructor-Led or one Online ILT, and one self-paced e-Learning course.

CE-VALPAKDLm



ScaleIO 1.x Server-based SAN



Certification Alignment

Product Technology Specific

E22-214 Exam

TARGET AUDIENCE: Benefits professionals who plan and design, install, implement, and manage and monitor an end-to-end ScaleIO solution with integrated components (VMware, alternate hypervisors and OpenStack).

Prepare for your Product Technology Specific ScaleIO 1.x Server-Based SAN certification.

Instructor-Led Training
 Online ILT
 Video ILT (VILT)
 e-Learning

Courses

| | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| ScaleIO 1.30 Introduction <p>Customer use case: Current scenario, introduction to ScaleIO, details of ScaleIO core components and features.</p> | <ul style="list-style-type: none"> • Introduce the ScaleIO technology • Identify challenges that can be addressed with ScaleIO • Describe the ScaleIO components and interactions at a basic level • Explain the core product features and how they address typical data center challenges | (0.5 hrs) |
| ScaleIO 1.30 Overview <p>Product vision and value proposition, fundamental concepts of ScaleIO, core components: MDM, SDS, SDC; core constructs: Protection domains, fault sets, storage pools; theory of operation</p> | <ul style="list-style-type: none"> • Explain the ScaleIO product, solution architecture and benefits at a high level • Describe the core components and constructs, data layout, I/O processing and data flows within ScaleIO at a high level • Perform preliminary presales design and detailed post sales design, covering all the major aspects of a ScaleIO 1.30 solution | (3.5 hrs) |
| ScaleIO 1.30 Installation <p>Installation of ScaleIO 1.30, Expansion: Dynamically adding a node to a ScaleIO 1.30 cluster</p> | <ul style="list-style-type: none"> • Describe the installation procedures for ScaleIO 1.30 on physical and virtual platforms (Linux, Windows, VMware) • Explain how a functional 1.30 cluster can be expanded by adding nodes | (1.5 hrs) |
| ScaleIO 1.30 Configuration and Management <p>ScaleIO configuration & management: user interfaces; managing protection domains and fault sets; managing storage pools; creating & provisioning volumes; thin vs thick provisioning; snapshots, role-based access</p> | <ul style="list-style-type: none"> • Explain how to perform various basic configuration and management operations in ScaleIO 1.30 • Describe the tools available to perform these operations in both physical (Linux, Windows) and virtual (VMware) environments | (1.5 hrs) |
| ScaleIO 1.30 Monitoring, Performance, and Troubleshooting <p>Monitoring and troubleshooting; performance tuning</p> | <ul style="list-style-type: none"> • Describe how to use the ScaleIO GUI to perform routine monitoring and active management of a large, production ScaleIO 1.30 cluster • Explain the ScaleIO event logging mechanism and how to use it to perform basic troubleshooting • Describe the features available for performance tuning in a ScaleIO 1.30 cluster | (1.5 hrs) |
| ScaleIO 1.30 REST API and OpenStack Integration <p>ScaleIO REST API; OpenStack integration</p> | <ul style="list-style-type: none"> • Describe the scope and operational details of the ScaleIO REST API • Explain the capabilities, implementation and use of the ScaleIO OpenStack driver package | (1.5 hrs) |
| ScaleIO 1.31 Technical Differences <p>Differences and benefits of ScaleIO; ESXi enhancement; 1.31 management features; integration enhancements; qualifications.</p> | <ul style="list-style-type: none"> • Explain the ScaleIO 1.31 differences in product and benefits at a high level • Describe the ESXi enhancements • Understand and perform the ScaleIO 1.30 to 1.31 upgrade • Implement and use ScaleIO v1.31 management features, including SNMP | (1.5 hrs) |

Additional Course

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| ScaleIO 1.32 Technical Differences <p>ScaleIO 1.32 features and benefits, free and frictionless installation, background device scanning, Installation Manager Wizard, enhanced OS support</p> | (0.75 hrs) |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|

[Click here for more details](#)

Purchase Options

ScaleIO ValuePak
Includes seven self-paced e-Learning courses.

CE-VPKSCALEIO

Atmos

TARGET AUDIENCE: Benefits any storage professional who deploys and manages an Atmos cloud storage environment.

You will learn to configure, monitor, and manage EMC Atmos tenants, policies, access protocols, data protection options, security, and performance.



Courses

Atmos Implementation and Management

Reviewing of Atmos resources, Atmos security model, configuring Atmos tenants, Atmos policy planning and configuration, Atmos access protocol configuration, Atmos monitoring and management tools

- Describe dataflow during standard read and write
- Differentiate between data and metadata
- Describe the purpose of Atmos policies
- Describe the high level layout of the Atmos security model
- Explain the hierarchy of tenancy
- Describe the relationship between tenants and policy
- Describe the relationship between tenants and access protocols
- Explain the role of policies
- Explain the relationship of tenant and policies
- Explain how policy effects system performance
 - Distribution
 - Protection
- Describe how data protect options and describe how full replicas, erasure coding, dedupe, compression and green drive options effect capacity and performance
- Describe the association of nodes and access protocols
- Describe tools to monitor and configure EMC Atmos



(2 days)

The Instructor-Led Course above is supported by the following e-Learning prerequisites:

Atmos Fundamentals

[Start here](#)

Introduction to EMC Atmos, Atmos architecture, features and capabilities, management overview


(1.5 hrs)

[Click here for more details >>](#)

Purchase Options

Atmos ValuePak

Includes one Instructor-Led or Online ILT and one self-paced e-Learning course.

CE-VALPAKATMS



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For local pricing and purchase options, contact your EMC account representative.

VPLEX

TARGET AUDIENCE: VPLEX learning path benefits storage professionals and IT managers involved in managing EMC VPLEX.

You will learn management of VPLEX systems, including configuration requirements, architecture, and theory of operations.

Prepare for your Specialist-level Storage Administrator VPLEX certification.



| Certification Alignment | |
|-------------------------|---------------------|
| Expert | N/A |
| Specialist | E20-562 Exam |
| Associate | E05-001 Exam |

- Instructor-Led Training
- Online ILT
- Video ILT (VILT)
- e-Learning

VPLEX Courses

VPLEX Management

VPLEX product and technology details, management interfaces, installation and setup, management and operations, planning and design, maintenance, monitoring, and troubleshooting

- Describe common VPLEX terms, configuration options, hardware and software architecture
- Describe data flow within a VPLEX system at a high level
- Install and configure VPLEX in a SAN environment
- Manage VPLEX using the Management Console GUI and CLI
- Provision virtual volumes to hosts
- Encapsulate existing SAN storage volumes into VPLEX volumes one-for-one
- Perform VPLEX mobility
- Describe integration and interoperability considerations that apply when preparing to deploy VPLEX into a new or existing data center
- Perform routine VPLEX monitoring tasks

(3 days)

VPLEX Fundamentals Start here

Product Overview, System Architecture, VPLEX Management

(1 hr)

Advanced VPLEX Courses

VPLEX Troubleshooting

Issue discovery and resolution in VPLEX environments— VPLEX operations, definition of potential faults, common mis-configurations, and connectivity requirements, troubleshooting techniques, tools and procedures

- Define the basic troubleshooting process
- Describe the key data points to gather information for troubleshooting
- List the tools used in VPLEX troubleshooting
- Show how to find and resolve virtualized SAN issues

(2 days)

VPLEX Performance

VPLEX performance metrics, monitoring tools, and performance analysis

(1.5 hrs)

VPLEX VE

TARGET AUDIENCE: VPLEX learning path benefits storage professionals and IT managersVPLEX/VE to enhance enterprise data mobility and access between and across data centers

VPLEX VE (VPLEX Virtual Edition) Courses

VPLEX Fundamentals

Product Overview, System Architecture, VPLEX Management

(1 hr)

VPLEX VE Implementation

Preparing for install, deploying VPLEX/VE.

(1 hr)

VPLEX VE Management

VPLEX/VE architecture, management activity, monitoring, non-disruptive upgrade.

(1 hr)

[Click here for more details >>](#)

Purchase Options

VPLEX VVPK VILTS

Includes one Video ILT and one self-paced e-Learning course.

CE-VIDVPKVPX

VPLEX ValuePak

Includes one Instructor-Led or Online ILT and one self-paced e-Learning course.

CE-VALPAKVPX

VPLEX VE eValuePak

Includes three self-paced e-Learning courses.

CE-EVALPAKVPLXVE

RecoverPoint

TARGET AUDIENCE: RecoverPoint learning path benefits any storage professional who manages EMC RecoverPoint local and remote replication.

Prepare for your Specialist-level Storage Administrator RecoverPoint Certification.



| Certification Alignment | |
|-------------------------|--------------|
| Expert | N/A |
| Specialist | E20-575 Exam |
| Associate | E05-001 Exam |

- Instructor-Led Training
- Online ILT
- Video ILT (VILT)
- e-Learning

RecoverPoint Courses

RecoverPoint Management

RecoverPoint overview, consistency groups, failover and failback operations, advanced configurations (SANTap and Cluster), event notification, and troubleshooting

- Articulate and explain both design and architecture principles of the RecoverPoint platform
- Implement the RecoverPoint appliance/solution in complex EMC SAN environments
- Provide details and knowledge transfer on conducting both Local Protection and Remote Protection configuration and operations

(3 days)

RecoverPoint Fundamentals

[Start here](#)

Overview of EMC RecoverPoint, architecture of EMC RecoverPoint, planning and design considerations implementation overview

(1 hr)

RecoverPoint for Virtual Machines

The RecoverPoint for Virtual Machines courses prepare you for implementation and management of RecoverPoint Virtual Machines clusters into a VMware environment.

RecoverPoint for Virtual Machines Courses

RecoverPoint Fundamentals

[Start here](#)

Overview of EMC RecoverPoint, architecture of EMC RecoverPoint, planning and design considerations implementation overview

- Describe the RecoverPoint solution and its benefits
- Explain how RecoverPoint provides a recovery solution for a virtualized Data Center
- Describe RecoverPoint application support and integration
- Describe the RecoverPoint architecture and terms

(1 hr)

RecoverPoint for Virtual Machines Implementation

This course prepares you for the implementation of RecoverPoint for Virtual Machines into a VMware environment. It covers the steps required to install RecoverPoint for Virtual Machine clusters including vSphere environment preparation, installing the ESXi host splitter, configuring the necessary networks, and deploying the virtual RecoverPoint Appliances (vRPA).

- Plan for and prepare a vSphere environment for a successful RecoverPoint for Virtual Machine implementation
- Install the Hypervisor splitter and virtual RecoverPoint appliances for RecoverPoint for Virtual Machines
- Deploy the RecoverPoint for Virtual Machine cluster using the Deployment Manager
- Verify the RecoverPoint for Virtual Machine implementation was successful

(1 hr)

RecoverPoint for Virtual Machines Management

This course covers how to manage and monitor RecoverPoint for Virtual Machines clusters. Management activities using the vSphere Web Client and RP plugin include using the Protect VM Wizard, testing images for remote access, creating bookmarks, and failover and production recovery operations.

- Manage RecoverPoint for Virtual Machines using the vSphere plugins
- Configure VM protection using the vSphere RecoverPoint plugin
- Test VM remote copy access using the vSphere RecoverPoint plugin
- Perform Failover and Recovery of production using the vSphere RP plugin
- Dynamically add or remove storage, memory or networking to a VM while protected by RecoverPoint for Virtual Machines

(1.5 hrs)

[Click here for more details](#) >>

Purchase Options

RecoverPoint VVPK VILTS

Includes one Video ILT and one self-paced e-Learning course.

CE-VIDVPKRP



RecoverPoint ValuePak

Includes one Instructor-Led or one Online ILT and one self-paced e-Learning course.

CE-VALPAKRP



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For local pricing and purchase options, contact your EMC account representative.

AppSync

TARGET AUDIENCE: Benefits implementation engineers and SAN/Database administrators who are involved in installing, configuring, and managing AppSync.

-  Instructor-Led Training
-  Online ILT
-  Video ILT (VILT)
-  e-Learning

AppSync Courses

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| AppSync Fundamentals Start here Introduction to AppSync, installation of AppSync, Management and Configuration, Alerts, Reports, and Logging |  (1 hr) |
| AppSync Implementation and Management AppSync Installation, Configuration, Management, and Monitoring. |  (1.5 hrs) |
| AppSync Integration with Microsoft Exchange Exchange Server and AppSync configuration, AppSync protection options for Exchange Server, Mounting Exchange Server replicas, Restoring Exchange Server replicas |  (1 hr) |
| AppSync Integration with MS SQL SQL Server & AppSync Configuration, AppSync Protection Options for SQL Server, Mounting SQL Server Replicas, Restoring SQL Server Replicas |  (1 hr) |
| AppSync Integration with Oracle Configuration, Protection options, mount options, Restore considerations |  (1.5 hrs) |
| AppSync Integration with VMware vSphere Considerations for using AppSync to protect VMware datastores and virtual machines in NFS and VMFS environments |  (1.5 hrs) |

[Click here for more details >>](#)

Purchase Options

AppSync eValuePak CE-EVALPAKAPP
 Includes six self-paced e-Learning courses.

Replication Manager

TARGET AUDIENCE: Benefits professionals who manage integrated and automated data replication using Replication Manager.

With Replication Manager, you will learn to integrate and automate TimeFinder, SRDF, SnapView, MirrorView, RecoverPoint and other replication technologies into application environments. Working knowledge of array-based local and remote data replication technologies is a prerequisite to this Learning Path.

-  Instructor-Led Training
-  Online ILT
-  Video ILT (VILT)
-  e-Learning

Replication Manager Courses

Replication Manager Workshop

Overview, planning and installation, administration, configuration and operations on VMWare, remote replications

- Install Replication Manager software
- Configure a Replication Manager environment
- Perform administrative functions using Replication Manager software
- Perform operational functions using Replication Manager software
- Utilize the Replication Manager Command Line Interface
- Perform administration, configuration, and operations on VMWare hosts using Replication Manager software

 (2 days)

The Instructor-Led Course above is supported by the following e-Learning prerequisite:

Replication Manager Fundamentals Start here

Replication Manager introduction, architecture, features and capabilities, and management overview

- Describe Replication Manager's value proposition
- Identify the components of Replication Manager architecture
- Describe supported features and functions of Replication Manager
- Discuss basic Replication Manager administration and management

 (1 hr)

[Click here for more details](#) 

Purchase Options

Replication Mngr VVPK VILTS

Includes one Video ILT and one self-paced e-Learning course

CE-VIDVPMRM



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For local pricing and purchase options, contact your EMC account representative.

Backup Recovery Systems and Architecture



| Certification Alignment | |
|-------------------------|-------------------------------|
| Expert | N/A |
| Specialist | E20-597 or E20-598 or E20-585 |
| Associate | E20-005 Exam |

TARGET AUDIENCE: Benefits IT professionals responsible for architecting and managing the backup and recovery environment.

You will learn to make informed decisions about backup and recovery in classic, virtualized, and cloud environments. Prepare for your Backup Recovery Associate (EMCBA) Certification.

- Instructor-Led Training
- Online ILT
- Video ILT (VILT)
- e-Learning

Course

Backup Recovery Systems and Architecture

Backup theory, information storage concepts, backup client, backup storage node, backup and recovery planning

- Describe backup and recovery terminology
- Describe backup and recovery operations
- Describe various types of storage systems, concepts, and components
- Identify major sources of backup data
- Describe the different types of backup storage media, their advantages and disadvantages
- Examine various factors to be considered in backup and recovery planning
- Describe the EMC portfolio of backup products

(5 days)
OR
 (11 hrs)

OR receive the same content in the following self-paced e-Learning courses:

Backup Recovery Systems and Architecture—Theory

- Backup and recovery concepts and terms
- Client/server backup architecture and backup restore data flow

Backup Recovery Systems and Architecture—Information Storage Concepts Part 1 and Part 2

- Disk architecture
- Storage systems
- RAID levels
- SAN components and terminology
- NAS components and terminology
- Replication and continuous data protection technologies

Backup Recovery Systems and Architecture-Client Part 1 and Part 2

- Major sources of backup data
- Storing and data protection for file system and application data including Oracle, SQL Server, Exchange, SharePoint, VSS, NDMP, virtualization and VMware
- Considerations and challenges impacting client backup environments

Backup Recovery Systems and Architecture—Storage Node

- Storage node components, related network considerations and file sharing protocols
- Advantages and disadvantages of various types of backup storage media including tape, disk and virtual tape
- Types of data deduplication and related considerations
- Uses and benefits of cloud computing and cloud deployment models

Backup Recovery Systems and Architecture—Planning

- Planning considerations including testing and disaster recovery
- Introduction to products in the EMC Backup Recovery portfolio including Data Protection Advisor, Data Domain, Avamar and NetWorker

[Click here for more details](#) >>

Purchase Options

| | | | |
|--------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------------|--------------------------|
| BR Sys&Arch VILTS Includes one Video ILT | CE-ePROSTARBA | Backup Recovery Systems eValuePak Includes seven self-paced e-Learning courses. | CE-eVALPAKBRS |
| ▲ BEST VALUE ▲ | | | |

Avamar

TARGET AUDIENCE: Benefits any storage professional who administers and monitors an EMC Avamar backup solution in single and multi-node environments.

You will learn to configure EMC Avamar, including Avamar Data Store and Avamar Virtual Edition, and Avamar integration with database applications, NDMP and clustered environments.

Prepare for your Specialist-level Storage Administrator Avamar Certification.



| Certification Alignment | |
|-------------------------|-------------------------|
| Expert | N/A |
| Specialist | E20-598 Exam |
| Associate | E20-005 or E05-001 Exam |

- Instructor-Led Training
- Online ILT
- Video ILT (VILT)
- e-Learning

Specialist Courses

Avamar Management

Avamar fundamentals, Avamar administration, Avamar backups, Avamar restores, Enterprise Manager and replication, system monitoring and maintenance, logs, troubleshooting, and reporting

- Describe the Avamar advantage over traditional backup systems
- Define Avamar terminology
- Describe Avamar system components and processes
- Describe the Avamar deduplication backup process
- Install Avamar Administrator and Client software
- Create a group policy
- Run on-demand backups from the Avamar Administrator and Avamar Client interfaces
- Restore files using Avamar Administrator and client interfaces
- Describe the types of Avamar replication and configure Avamar standard replication
- Configure and use Avamar Activation Manager and Desktop/Laptop interfaces
- Describe Avamar server daily maintenance activities: checkpoints, HFS checks, and garbage collection
- Use Avamar tools to perform system monitoring, maintenance, capacity management, and troubleshooting

(3 days)

The Instructor-Led Course above is supported by the following e-Learning prerequisites:

Avamar Fundamentals ▶ Start here

Avamar fundamentals, Avamar backups and restores, maintaining, monitoring, and reporting

(1.5 hrs)

Avamar Virtual Edition Overview

EMC Avamar fundamentals, Avamar editions, Avamar Virtual Edition configurations and requirements

(1 hr)

Additional Courses

Avamar Integration and Performance Management

Configuring Avamar Server and Clients, Performance Management, Avamar Integration with EMC NetWorker, with Data Domain, with Microsoft Applications, with Databases, and with NDMP, Virtual Environments, Avamar Tape-out Options

- Describe Avamar client, initialization, and security best practices
- Install, configure, and run backups and restores of supported database applications, NDMP appliances, and VMware environments
- Install, configure, and run backups and restores in environments integrated with NetWorker and Data Domain
- Describe recommended practices for Avamar performance management including sizing client caches and recovering from server capacity issues

(5 days)

[Click here for more details >>](#)

Purchase Options

Avamar Mgmt VVPK VILTS

Includes one Video ILT and two self-paced e-Learning courses.

CE-VIDVPKAV



EMC Avamar ValuePak

Includes one Instructor-Led or one Online ILT and two self-paced e-Learning courses.

CE-AVAXIADMIN



NetWorker

TARGET AUDIENCE: Benefits any storage professional who deploys and manages NetWorker-based backup and recovery in Windows and/or UNIX environments.

Conduct backups over LAN and/or SAN to targets including tape libraries, disk, and cloud storage systems. Gain insight to recoverability and performance.

Prepare for your Specialist-level Storage Administrator NetWorker Certification.



| Certification Alignment | |
|-------------------------|-------------------------|
| Expert | N/A |
| Specialist | E20-597 Exam |
| Associate | E20-005 or E05-001 Exam |

- Instructor-Led Training
- Online ILT
- Video ILT (VILT)
- e-Learning

Specialist Courses Supporting NetWorker 9.0

NetWorker Implementation and Management

Overview, Planning and Installation, Media Tracking and Management, Performing Backups, Configuring and Managing Devices, Database Management, Performing Recoveries, Cloning, and Staging, Security, Administering NetWorker, Recovering Windows Hosts and Cluster Environments, Recovering NetWorker and NMC Servers

- Install NetWorker and NetWorker Management Console
- Use NetWorker resources and administrative interfaces
- Configure and perform backup and restore operation
- Manage NetWorker media and devices, NetWorker databases
- Perform cloning and staging, generate NetWorker reports
- Describe how to back up Windows hosts for disaster recovery
- Explain how to configure NetWorker in a cluster environment
- Backup and recover the NetWorker Management Console and NetWorker servers

(5 days)

The Instructor-Led Course above is supported by the following e-Learning prerequisites:

NetWorker Fundamentals Start here

NetWorker overview, operations and capabilities, management, security, features and functions

(1 hr)

NetWorker Modules Overview

Introduction to NetWorker Modules, NetWorker Module Architecture, NetWorker Module for Database Applications, NetWorker Module for Microsoft Applications, Other NetWorker Application Modules, NetWorker Snapshot Modules

(1 hr)

Additional Courses

NetWorker Integration Workshop

NetWorker performance management, NetWorker integration with Avamar, Data Domain, Microsoft SQL, Microsoft Exchange, Microsoft SharePoint, Microsoft Hyper-V, Oracle, VMware and SAP, NetWorker snapshot management

- Configure NetWorker servers, storage nodes and clients following best practices; Describe configuration backup and recovery of MS SQL, SharePoint, Exchange, Hyper-V; Describe configuration, backup and recovery of Oracle, SAP, SAP HANA, VMware ESXi
- Describe configuration and use cases for NetWorker Snapshot Management

(5 days)

NetWorker 9.0 Technical Differences Courses

NetWorker 9.0 Technical Differences Overview

Management console changes; licensing and security enhancements; installation and upgrade process changes; database and performance improvements.

(1 hr)

NetWorker 9.0 Technical Differences: NetWorker Core

Administration changes; licensing, authentication, and core changes; installation, migration, and databases.

(3 hrs)

NetWorker 9.0 Technical Differences: NSM, NAS, and Virtualization Enhancements

Virtual Edition; NSM enhancements, other 9.0 enhancements

(1.5 hr)

NetWorker Module for Microsoft (NMM) 9.0 Technical Differences

NMM 9.0 enhancements; backward compatibility; Exchange enhancements; Hyper-V enhancements.

(2 hrs)

NetWorker 8.2 Course

NetWorker Installation, Configuration and Administration

NetWorker overview, planning and installation, resources and interfaces, performing backups, media management, configuring and managing devices, database management, performing recoveries, cloning and staging, security and administering NetWorker, VSS backups and cluster environments, and recovering a NetWorker server

- Install NetWorker and the NetWorker Management Console
- Use NetWorker administrative interfaces to manage the NetWorker server
- Configure and perform backups and recoveries
- Manage media and devices in NetWorker ; Manage NetWorker databases
- Configure cloning and staging ; Configure and run NetWorker reports
- Describe how to configure VSS and cluster environments for backup and recovery; Perform a disaster recovery of the NetWorker server

(5 days)

[Click here for more details >>](#)

Purchase Options

NetWorker VVPK VILTS

Includes one Video ILT and two self-paced e-Learning courses.

CE-VIDVPKBR



NetWorker ValuePak

Includes one Instructor-Led or one Online ILT course and two self-paced e-Learning courses.

CE-VALPAKBR



Data Domain

TARGET AUDIENCE: Benefits any storage professional who installs, integrates, and administers Data Domain systems.

Implement a Data Domain system with key technologies, including NFS, CIFS, DD Boost, VTL, link aggregation and failover, replication, snapshots, fast copy, and recovery functionalities. Monitor Data Domain system activity and performance.

Prepare for your Specialist-level Storage Administrator Data Domain Certification.



| Certification Alignment | |
|-------------------------|-------------------------|
| Expert | N/A |
| Specialist | E20-585 Exam |
| Associate | E20-005 or E05-001 Exam |

- Instructor-Led Training
- Online ILT
- Video ILT (VILT)
- e-Learning

Specialist Courses

Data Domain System Administration

Data Domain system concepts, verifying system configuration, managing network interfaces, configuring and managing a VTL, performing data backups and recoveries, managing data security, DD Boost and replication, planning for capacity and throughput, and monitoring and upgrading a Data Domain system

- Describe deduplication
- Describe the Data Domain operating environment, including Data Domain deduplication
- Identify and configure Data Domain data paths
- Perform a Data Domain system initial setup
- Access and copy data to a Data Domain system
- Configure and manage Data Domain network interfaces
- Describe and configure a VTL
- Customize and manage a Data Domain deduplication file system
- Describe and perform data replication and recovery
- Describe DD Boost
- Perform a DD Boost backup
- Describe capacity and throughput planning
- Monitor a Data Domain system

(4 days)

The Instructor-Led Course above is supported by the following e-Learning modules:

Data Domain Fundamentals ◀ Start here

Introduction to Data Domain inline deduplication systems, product overview, system capacities, common hardware features, and system differences, Data Domain operating system including: system login, management and licensing options overview, data protection features including: hardware redundancy, autosupports, alerts and file protection, and data integrity features

(2.5 hrs)

Data Domain Implementation with Application Software

Data Domain system as a file system and VTL to common Application Software; EMC NetWorker, Symantec's NetBackup, Symantec's Backup Exec and IBM Tivoli Storage Manager. Data Domain BOOST integration with EMC NetWorker, Symantec's NetBackup and Symantec's Backup Exec.

(1 hr)

Data Domain Extended Retention—Installation, Configuration and Administration

DD Extended Retention overview, installation, configuration and administration, upgrading to Extended Retention, Extended Retention administration

(1 hr)

Additional Course

ProtectPoint Fundamentals

Introduction, architecture, features and capabilities, management overview.

(1 hr)

[Click here for more details >>](#)

Purchase Options

Data Domain VVPK VILTS

Includes one Video ILT and three self-paced e-Learning courses.

CE-VIDPKDDD



Data Domain ValuePak

Includes one Instructor-Led or one Online ILT and three self-paced e-Learning courses.

CE-VALPAKDD



Backup Recovery Solutions

TARGET AUDIENCE: Benefits professionals who integrate various applications and technologies in solutions using EMC backup and recovery products into backup and recovery environments.

This set of courses emphasizes design considerations and product-specific best practices.



Advanced Courses

| | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| <p>Backup Recovery Solutions—Avamar to Data Domain Integration Avamar to Data Domain Capabilities and Considerations, Integrating Data Domain with Avamar</p> | <ul style="list-style-type: none"> Identify design considerations and product specific best practices for Avamar to Data Domain integration Describe how to integrate Data Domain with Avamar in a backup and recovery environment |  (1 hr) |
| <p>Backup Recovery Solutions—NetWorker to Avamar Integration NetWorker to Avamar Integration Capabilities and Use Cases, Configuring NetWorker to Avamar Integration</p> | <ul style="list-style-type: none"> Identify design considerations and best practices for NetWorker to Avamar integration Describe how to integrate Avamar with NetWorker in a backup and recovery environment |  (1 hr) |
| <p>Backup Recovery Solutions—NetWorker to Data Domain Integration NetWorker to Data Domain Integration Capabilities and Use Cases, Configuring NetWorker Integration with Data Domain</p> | <ul style="list-style-type: none"> Identify design considerations and best practices for NetWorker to Data Domain integration Describe how to integrate Data Domain with NetWorker in a backup and recovery environment |  (1 hr) |
| <p>Backup Recovery Solutions—Microsoft Exchange Integration Microsoft Exchange Data Protection Fundamentals, NetWorker Integration with Microsoft Exchange, Avamar Integration with Microsoft Exchange</p> | <ul style="list-style-type: none"> Identify design considerations and product specific best practices for Microsoft Exchange database backup and recovery Describe how to integrate a Microsoft Exchange database backup and recovery environment with EMC backup products |  (1 hr) |
| <p>Backup Recovery Solutions—Microsoft SharePoint Integration Application Data Protection Fundamentals, NetWorker Integration with Microsoft SharePoint, Avamar Integration with Microsoft SharePoint</p> | <ul style="list-style-type: none"> Identify design considerations and product specific best practices for Microsoft SharePoint application backup and recovery Describe how to integrate a Microsoft SharePoint backup and recovery environment with EMC backup products |  (1 hr) |
| <p>Backup Recovery Solutions—Microsoft SQL Integration Microsoft SQL Backup Fundamentals, Options for Integrating with EMC Products, NetWorker Integration with Microsoft SQL, Avamar Integration with Microsoft SQL</p> | <ul style="list-style-type: none"> Identify design considerations and product specific best practices for Microsoft SQL database backup and recovery Describe how to integrate a Microsoft SQL database backup and recovery environment with EMC backup products |  (1.5 hrs) |
| <p>Backup Recovery Solutions—Oracle Integration Oracle Data Protection Fundamentals, NetWorker Integration with Oracle, Avamar Integration with Oracle, Data Domain Integration with Oracle</p> | <ul style="list-style-type: none"> Identify design considerations and product specific best practices for Oracle database backup and recovery Describe how to integrate an Oracle database backup and recovery environment with EMC backup products |  (1.5 hrs) |
| <p>Backup Recovery Solutions—NDMP Integration NAS and NDMP Data Protection Fundamentals, Options for Integration with EMC Products, NetWorker Integration with NDMP, Avamar Integration with NDMP</p> | <ul style="list-style-type: none"> Define the NDMP protocol Identify NAS specific design considerations and best practices for backup and recovery of NAS devices Describe how to integrate NAS devices with NDMP and EMC backup products |  (1 hr) |
| <p>Backup Recovery Solutions—VMware Integration Application Data Protection Fundamentals, Options for Integration with EMC Products, NetWorker Integration with VMware, Avamar Integration with VMware</p> | <ul style="list-style-type: none"> Identify design considerations and product specific best practices for VMware backup and recovery Describe how to integrate VMware backup and recovery environments with EMC backup products |  (1.5 hrs) |

[Click here for more details >>](#)

Purchase Options

Backup Recov. Sol. Integration eValuePak
Includes nine self-paced e-Learning courses.

CE-EVPBRINTG


Data Protection Advisor

TARGET AUDIENCE: Benefits any storage professional who is responsible for implementing and managing the Data Protection Advisor product.

Learn to implement and manage tasks related to the backup option of the Data Protection Advisor product.

Prepare for your Data Protection Advisor 6.x Product/Technology-specific Certification.



| |
|--------------------------------|
| Certification Alignment |
| Product Technology Specific |
| E22-247 Exam |

- Instructor-Led Training
- Online ILT
- Video ILT (VILT)
- e-Learning

Courses

| | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| <p>Data Protection Advisor Custom Reporting Configuring Reports, Creating Custom Reports, Customizing the Appearance of a Report, Advanced Report Writing</p> | <ul style="list-style-type: none"> • Create custom reports by modifying existing ones or working from scratch • Describe the use of common operators and data sources | (2 days) |
| <p>Data Protection Advisor Implementation and Management Overview, Installation, Configuration and Administration, Management, Advanced Administration, and Troubleshooting</p> | <ul style="list-style-type: none"> • Install and configure the different DPA components • Manage the product through the GUI • Run and customize reports | (3 days) |
| The Instructor-Led Course above is supported by the following e-Learning prerequisite: | | |
| <p>Data Protection Advisor Fundamentals Start here Overview, DPA architecture, DPA licensing overview, DPA web console, reporting capabilities</p> | | (1.5 hrs) |

Additional Course

| | |
|-----------------------------------------------------------------------------------------------------------------------------------|-------------------|
| <p>Data Protection Search Fundamentals Introduction, architecture, features and capabilities, management overview.</p> | (1 hr) |
|-----------------------------------------------------------------------------------------------------------------------------------|-------------------|

[Click here for more details >>](#)

Purchase Options

| | | | |
|--------------------------------------------------------------------------------------------------------------|------------------------------|------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| <p>Data Prot Adv 6.x VVPK VILTS Includes two Video ILT and one self-paced e-Learning courses.</p> | <p>CE-VIDVPKDPROA</p> | <p>Data Protection Advisor 6.x ValuePak Includes two ILT or Online ILT and one self-paced e-Learning courses.</p> | <p>CE-VALPAKDPROA</p> |
|--------------------------------------------------------------------------------------------------------------|------------------------------|------------------------------------------------------------------------------------------------------------------------------|------------------------------|

SourceOne

TARGET AUDIENCE: Benefits administrators of EMC SourceOne who will configure and administer the SourceOne Email Management software.

You will learn to configure SourceOne Email Management, capture and archive email messages, and perform basic searches with EMC SourceOne.

-  Instructor-Led Training
-  Online ILT
-  Video ILT (VILT)
-  e-Learning

Courses

SourceOne Email Management Administration for Exchange

SourceOne Email Management overview, architecture and planning, administration console, configuring archives, configuring mapped folders, managing organizational policies, configuring and managing activities, journaling activities, managing jobs, managing worker servers, SourceOne search, configuring and managing rules, PST processing activities, shortcut processing activities, SourceOne offline access, user-directed archive activities, debugging and troubleshooting, maintaining SourceOne, configuring single sign-on, SourceOne auditing and reports, and Discovery Manager Express Edition

- Configure worker servers and repositories
- Manage archives, activities, and Jobs
- Perform basic searches
- Perform shortcutting and personal mail file archiving operations
- Configure and run SourceOne reports
- Maintain and troubleshoot typical operations




(5 days)

The Instructor-Led Course above is supported by the following e-Learning prerequisite:

SourceOne Archiving Family Fundamentals

 Start here

Introducing archiving and SourceOne, SourceOne product overview, SourceOne processing and components


(1.5 hrs)

Additional Courses

SourceOne Discovery Manager Management

Discovery Manager introduction, preparing for discovery, performing an investigation with Discovery Manager


(1 hr)

SourceOne Email Supervisor Management

Email Supervisor fundamentals, planning and configuring Email Supervisor, performing supervisor tasks, reviewing messages


(2 hrs)

[Click here for more details >>](#)

Purchase Options

SourceOne VVPK VILTS

Includes one Video ILT and one self-paced e-Learning course.

CE-VIDVPKSO



SourceOne ValuePak

Includes one Instructor-Led or one Online ILT course and one self-paced e-Learning course.

CE-VALPAKSO







EMC Centera (Content-Addressed Storage)



TARGET AUDIENCE: Benefits any storage professional who deploys and manages a Centera content-addressed storage (CAS) environment.

You will learn to configure Centera Virtual Pools and set retention policies and other archival settings to reconcile an overall tiered storage environment.





-  Instructor-Led Training
-  Online ILT
-  Video ILT (VILT)
-  e-Learning

| Courses | | |
|------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CAS Management Centera management, day-to-day tasks, and basic troubleshooting steps | <ul style="list-style-type: none"> Explain how data is stored, retrieved, and replicated on EMC Centera Perform day-to-day management tasks on an EMC Centera using the native tools, and create/test virtual pools and access profiles Perform EMC Centera replication and basic performance and networking troubleshooting |    (3 days) |
| The Instructor-Led Course above is supported by the following e-Learning prerequisites: | | |
| Centera Fundamentals Start here | Centera fundamentals, operations, management and security, Centera positioning |  (2 hrs) |

Cloud Tiering Appliance (CTA)

| Courses | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Cloud Tiering Appliance Fundamentals This course provides an introduction and basic understanding of the EMC Cloud Tiering Appliance (CTA) for a policy-based file archival or migration solution. It provides a general overview of CTA terminology, features, functions, and architecture. | <ul style="list-style-type: none"> Provide an overview of the CTA solution and its benefits Discuss CTA use cases Describe CTA theory of operations and architecture Identify CTA models and their differences Describe CTA features and functions |  (1.5 hrs) |
| Cloud Tiering Appliance Implementation and Management for Migration CTA initial configuration, migration policies, implementing a migration task, CTA best practices and troubleshooting | <ul style="list-style-type: none"> Configure a Cloud Tiering Appliance for migration Design and create migration policies Implement a migration task Identify CTA best practices and common migration issues |  (1.5 hrs) |

[Click here for more details >>](#)

| Purchase Options | | | |
|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CAS (Centera) VVPK VILTS Includes one Video ILT and one self-paced e-Learning course. |  CE-VIDVPKCAS | CAS (Centera) ValuePak Includes one Instructor-Led or one Online ILT course and one self-paced e-Learning course. |    CE-VALPAKCAS |



VCE Training and Certification

Companies are modernizing their data centers and transforming operations to enable them to respond more quickly to business demands. They are deploying converged infrastructure systems that simplify operations, save time and money, increase performance, and improve availability. In many organizations the staff only knows the traditional, domain-specific approach, which often leads to inefficiencies.

Role-based Certification

The VCE™ Certified Professional Program allows data center professionals to be relevant in a converged infrastructure environment by offering role specific paths to acquire and validate cross-domain expertise. Along with the newest VCE Vblock® Systems technology, being VCE Certified will bring clarity and quality to the designing, implementation, and management of a converged infrastructure.

IT transformation involves a rethinking of IT—a change in business processes and staff roles. Organizations are looking for IT vendors who can bring significant value to the transformation—vendors whose expertise and competencies are clearly differentiated.

VCE Certified Converged Infrastructure Associate

Available to all professionals, this credential is intended to expand understanding of what factors differentiate the VCE converged infrastructure environment; detail the basics of VCE Vblock Systems components and solutions, and the underlying investor technologies.

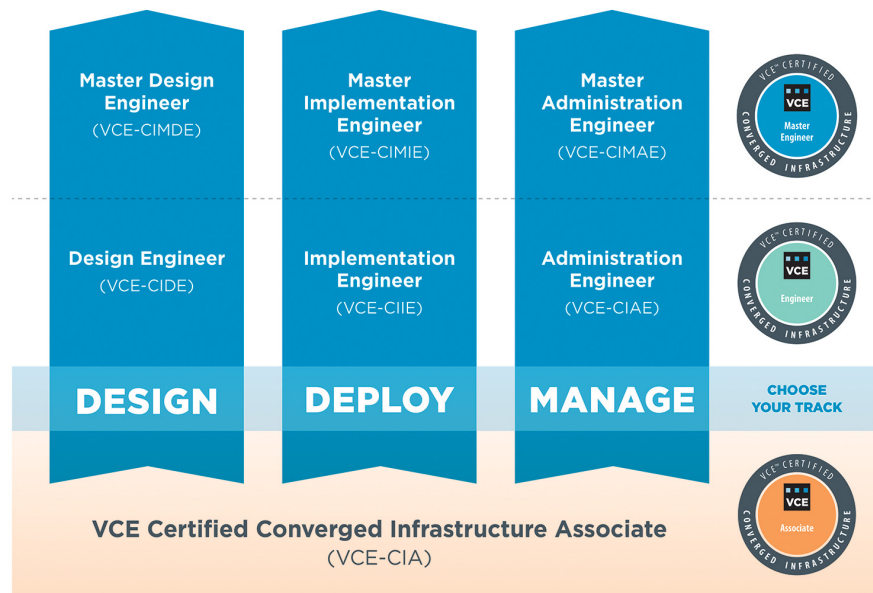
Complete the “VCE Converged Infrastructure Solutions Foundations” eLearning course to earn the VCE Certified Converged Infrastructure Associate credential.

VCE Certified Converged Infrastructure Engineer and Master Engineer

Professionals will be certified in role-based programs that are best suited for their specific career paths. These role-based tracks include:

- **Design** – Validates professionals in designing Vblock Systems and working with customer IT stakeholders to understand requirements
- **Deploy** – Certifies professionals in deploying and implementing Vblock Systems, conducting test validations, and ensuring system compliance
- **Manage** – Develops specialized skills in managing converged infrastructure systems, utilizing resources and software to meet SLAs, capacity and performance requirements, and management tasks

VCE™ CERTIFIED PROFESSIONAL PROGRAM



Contact Us

Online: www.vce.com/vcecertified

Email: VCEcertification@vce.com

VCE Converged Infrastructure Systems

TARGET AUDIENCE: Benefits IT professionals responsible for initializing, deploying, and managing Vblock Systems.

You will learn the administration and common management tasks of Vblock Systems, utilizing VCE Vision™ Intelligent Operations and Vblock Element management tools.



Certification Alignment

| | |
|-----------------|------------------|
| Master Engineer | 320-010 Exam** |
| Engineer | 220-010 Exam* |
| Associate | Foundations Exam |

- Instructor-Led Training
- Online ILT
- Video ILT (VILT)
- e-Learning

Courses

VCE Vblock Systems Advanced Administration and Management; Performance and Troubleshooting**

Advanced administration topics for experienced VCE Vblock systems administrators. It is intended for VCE customers, partners, and VCE personnel who are responsible for administering, or supporting the administrator of Vblock Systems which have been in place for at least 6 months.

- Describe the recommended troubleshooting methodology and demonstrate how to detect and recover from Vblock System failure events
- Demonstrate how to perform a Vblock systems performance baseline, monitor performance information, analyze performance, and implement a tuning fix
- Transparently move a datastore using Storage vMotion; Migrate SAN-boot host from one UCS blade to another; Describe VCE Shared Management Platform

(3 days)

VCE Vblock Systems Administration and Management*

Vblock architecture, infrastructure management, UIM administration, security strategy, monitoring, orchestration.

- Understand the main elements of Administration and Management
- Develop a working understanding of Validation, Monitoring, Administration, Management, Security
- Perform resource isolation for simulated multi-tenant environments
- Explain the steps for configuring monitoring and alert setup; Build a Vblock System Run Book; Enact role based security
- Understand and explore VCE Vision™ Intelligent Operations

(5 days)

The Courses above require following prerequisite:

VCE Converged Infrastructure Solutions Foundations

Introduction to VCE Converged Infrastructure Solution technologies and components, providing a basic understanding of what these products are and how they work.

(4 hrs)

Additional Courses

VCE Administration and Management: Vblock System 500 Series

Introduction to the administration and management of the Vblock System 500 Series

- Discuss the Vblock System 500 Series, its building block components, and how the Vblock integrates into a datacenter
- Capture the Vblock System 500 Series configuration baseline Monitor Vblock System 500 Series status, health, and performance using both component element managers and VCE Vision Intelligent Operations
- Create, expand and provision Vblock System 540 Series compute, network, storage, and virtualization resources
- Backup Vblock System 500 Series configuration data

(5 days)

Performing a Release Certification Matrix Upgrade (RCM) Service for VCE Vblock Systems

Guidelines for performing Vblock System upgrades; simulates performing actual upgrade on physical and virtual resources as well as system validation as part of post-upgrade operations.

- Describe the VCE RCM Upgrade Service strategy
- Identify the risks, limitations and considerations
- Explain the VCE methodology, process, procedures tools and documentation for the RCM upgrade service; Perform the different phases of an upgrade service; Discuss the upgrade completion process and required tasks

(2 days)

VCE Vblock 240 Administration and Management Overview

System monitoring, network management, storage management, and virtualization administration

(2 hrs)

Managing VCE Vblock Solutions with Vision Intelligence Operations

VCE Vision 3.0 features and functionality, architecture, data center integration, and software development; integrated components that define this software package

(2 hrs)

VCE VxRail Courses

VCE VxRail Appliance Technical Overview

Technical overview, components and interfaces to manage the solution, technical specifications and solution design considerations for proper platform positioning.

(0.5 hrs)

VCE VxRail Appliance Administration and Management

Managing and monitoring the system, administrative tools, features and operations for the components that make up the solution

(4 hrs)

* VCE Vblock Systems Administration and Management may be taken as preparation for the VCE Converged Infrastructure Administration Engineer credential. In addition to this course, hands-on, practical experience is necessary for success.

**VCE Vblock Systems Advanced Administration and Management: Performance and Troubleshooting may be taken as preparation for the VCE Converged Infrastructure Master Administration Engineer credential. In addition, hands-on, practical experience is necessary for success.

Note: You can find other courses related to Vblock integration with: VMware—page 56; Cisco technologies—page 27

[Click here for more details >>](#)

Purchase Options

VCE Converged Infrastructure Solutions Foundations
Free e-Learning

EDUC-SFND-01-A01

Vblock Dedicated Class (3-day Onsite)

If you are interested in a 3-day dedicated onsite class, please contact your EMC sales representative or a Training Registrar.

EDUC-OA03-01-A01

Vblock ValuePak

Includes one Instructor-Led or Online-ILT and one self-paced e-Learning course.

CE-VALPAKVBL

Dedicated Class (5-day)

If you are interested in a 5-day dedicated onsite class, please contact your EMC sales representative or a Training Registrar.

EDUC-OA05-A01

ViPR Controller 2.x

TARGET AUDIENCE: Benefits IT professionals who plan to manage, deploy, and support ViPR.

Students will learn to configure and manage the base ViPR solution—a lightweight, software only product that transforms existing storage into a simple, extensible, open platform that can deliver fully automated storage services and realize the full potential of the software-defined data center.



| |
|--------------------------------|
| Certification Alignment |
| Product Technology Specific |
| E22-283 Exam |

- Instructor-Led Training
- Online ILT
- Video ILT (VILT)
- e-Learning

ViPR Courses

ViPR Implementation and Management

Introduction, ViPR Discovery and Configuration, Virtual Resource Provisioning, Service Catalogs, File Services, Block Services, ViPR Controller in existing environments, integration with VMware, Microsoft, and OpenStack, ViPR Controller CLI and API integration

- Define key components, concepts and architecture of a ViPR solution
- Configure the ViPR solution
- Perform basic management and orchestration with ViPR Controllers
- Discover and manage assets using ViPR interfaces
- Ingest existing volumes into a ViPR managed solution
- Demonstrate how to use the ViPR Plug-ins
- Perform VMware, Microsoft, and OpenStack integration with ViPR
- Use the REST API and ViPR CLI to communicate & manage solution

(5 days)

ViPR Fundamentals ▶ Start here

Introduction, Architecture, Features and Capabilities, Management Overview

(2 hrs)

ViPR Software Installation

ViPR site validation, installation, installation validation

(1 hr)

Note: For more details on ViPR SRM courses, see page 49. For more details on ScaleIO, see page 32.

Additional Courses

ViPR Basic Diagnostics and Troubleshooting

Architectural Overview, Monitoring ViPR, Troubleshooting

(1.5 hrs)

Elastic Cloud Services (ECS)

TARGET AUDIENCE: Benefits IT professionals who plan to manage, customize monitor, or use an ECS system for data storage.

Students will learn to configure, manage and use ECS..

Courses

ECS for Geo-Scale Object Storage

Overview, architecture, basic configuration, access from Objects Clients and usage, advanced configuration, metering and monitoring

- Provide an overview of the ECS solution, its components, and typical deployment configurations
- Explain the ECS architecture, core software constructs, data flows, and internal operation
- Use the ECS portal to configure the system for object storage, local replication, and geo replication
- Customize and use supported object clients and Hadoop clients to access ECS storage
- Perform metering, monitoring, and basic health checks in an ECS environment

(3 days)

ECS (Elastic Cloud Storage) Getting Started

Introduction, architecture, features and capabilities

(1.5 hrs)

[Click here for more details >>](#)

Purchase Options

ViPR Imp and Mgmt Video ValuePak
Includes one Video ILT course and two self-paced e-Learning courses.

CE-VALPAKVI PRIM

ViPR Imp and Mgmt ValuePak
Includes one Instructor-Led course and two self-paced e-Learning courses.

CE-VALPAKVI PRIM

ViPR SRM 3.x Storage Resource Management



| |
|--------------------------------|
| Certification Alignment |
| Product Technology Specific |
| E22-265 Exam |

TARGET AUDIENCE: Benefits professionals who install, configure, validate, and manage storage resource environments.

This includes qualification of the environment, installation, and licensing of ViPR SRM, installing and using SRM SolutionPacks, reporting, monitoring, and troubleshooting. Prepare for your Product Technology Specific ViPR SRM 3.x Storage Resource Management

Instructor-Led Training
 Online ILT
 Video ILT (VILT)
 e-Learning

Implementation Courses

ViPR SRM Implementation and Management

Site validation, installation, backend administration, SolutionPacks, frontend administration, security, alerting.

- Implement the use of the ViPR SRM pre-installation, installation, and product documents
- Validate the ViPR SRM installation using the EMC M&R Health SolutionPack
- Install, configure, and verify storage-related SolutionPacks
- Configure and integrate users, roles, and profiles with LDAP authentication

(3 days)

ViPR SRM Maintenance

Theory of operations, backend operations, frontend operations, collection operations, backup and upgrade operations.

- Describe the overall theory of operations
- Describe some key maintenance tasks on major components of: Backends, Frontends, and Collections
- Demonstrate how to work with SolutionPacks and techniques to discover new devices
- Describe monitoring and troubleshooting procedures
- Describe upgrade, update, and backup and restore procedures

(2 days)

ViPR SRM Fundamentals ◀ Start here

Introduction, architecture, features and capabilities, management overview

(1.5 hrs)

ViPR SRM Reporting Fundamentals

Basics of user interface and reporting, base report types, managing reports

(4 hrs)

[Click here for more details >>](#)

Purchase Options

ViPR SRM 3.x I&M VVPK VILTS

Includes two Video ILT and two self-paced e-Learning courses.

CE-VIDVPKSRMIM



ViPR SRM 3.x Implement. and Maint. ValuePak

Includes two Instructor-Led or Online ILT course and two self-paced e-Learning courses.

CE-VALPAKSRMIM



ViPR SRM–Additional Courses

Storage Administrator Course

ViPR SRM for Storage Administrators

Overview, application complexity, performance problems, uncontrolled growth, wasted effort and incidents, SLA failures, opaque costs, uncertain recoverability, wasted storage.

- Use the Dashboard and SolutionPacks to monitor and meter the storage infrastructure
- Create and customize reports for common operational challenges
- Define and attach alerts to events logged in reports and collected data
- Analyze report data to locate and resolve infrastructure and compliance issues



Prerequisite course

ViPR SRM Fundamentals Start here

Introduction, architecture, features and capabilities, management overview



Advanced Reporting Course

ViPR SRM Advanced Reporting

Overview, basics of reporting, reporting key concepts, base report types, formulas, more report types.

- Describe ViPR SRM's report structure design and data manipulation.
- Use the tools and features of ViPR SRM in report design and creation.
- Create various unique reports based upon selected criteria employing the many report types provided in ViPR SRM
- Demonstrate recognition of the advantages and features of the different report types by selecting appropriate report types to satisfy specified conditions.
- Demonstrate an understanding of the uses for and correctly apply formulas in report design and creation.
- Create and make public enhanced reports for others to use and manage the content of the report tree.



Prerequisite course

ViPR SRM Fundamentals Start here

Introduction, architecture, features and capabilities, management overview



ViPR SRM Reporting Fundamentals

Basics of user interface and reporting, base report types, managing reports



Purchase Options

ViPR SRM Adv Rep. VVPK VILTS

Includes one Video ILT and one self-paced e-Learning course.

CE-VIDVPKVIPRSRMAR



ViPR SRM Advanced Reporting ValuePak

Includes one Instructor-led or Online ILT course and one self-paced e-Learning course.

CE-VALPAKVIPRSRMAR



ViPR SRM Stge Adm VVPK VILTS

Includes one Video ILT and two self-paced e-Learning course.

CE-VIDVPKSRMSA



ViPR SRM Storage Administration ValuePak

Includes one Instructor-led or Online ILT course and two self-paced e-Learning course.

CE-VALPAKSRMSA







Service Assurance (SA) Suite

TARGET AUDIENCE: Benefits any IT professional who deploys and leverages end-to-end network management solutions.





You will learn to configure the Service Assurance Suite of software, view and understand the diagnostic analysis results, and resolve network and service issues.

-  Instructor-Led Training
-  Online ILT
-  Video ILT (VILT)
-  e-Learning

Implementation Courses

| | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Service Assurance (SA) Suite Implementation Overview, EMC M&R site validation and installation, NCM site validation, installation, configuration & discover, and post installation & integration, SAM/ IP/ESM site validation, installation, and configuration, Smarts SolutionPacks</p> | <ul style="list-style-type: none"> • Locate and use the SA Suite pre-installation, installation, and product documents • List the hardware, software, and operating system prerequisites and validate the site or SA Suite installation • Install the SA Suite to a qualified site • Validate the SA Suite installation by doing a discovery of topology to be managed • Install product licensing and perform basic installation troubleshooting • Install and configure the Watch4net SolutionPacks for the SA Suite • Verify base reports provided within SA Suite SolutionPacks |    (4 days) |
| <p>Service Assurance Suite Fundamentals Start here Introduction and architecture, features and capabilities, SA Suite management overview</p> | |  (1 hr) |

Management Courses

| | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Service Assurance (SA) Suite Management Overview, SA Suite Services, Smarts IP Manager Discovery Overview and Configuration, Discovery Phases, Discovery Monitoring and Advanced Topics, Auto-discovery, Polling and Thresholds, Server Manager Discovery, and more.</p> | <ul style="list-style-type: none"> • Control the discovery process for all applications within the SA Suite • Create management policies to specify how the infrastructure is managed • Modify the SA Suite user environments to meet the needs of your organization |    (4 days) |
| <p>Service Assurance Suite Fundamentals Start here Introduction and architecture, features and capabilities, SA Suite management overview</p> | |  (1 hr) |

[Click here for more details >>](#)

Purchase Options

| | | | |
|-----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Serv Assur Suite VVPK VILTS Includes one Video ILT and one self-paced e-Learning course.</p> | <p>CE-VIDVPSAS  </p> | <p>Service Assurance Suite ValuePak Includes one Instructor-led or Online ILT and one self-paced e-Learning course.</p> | <p>CE-VALPAKSAS   </p> |
|-----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Smarts

TARGET AUDIENCE: Based on version 9.2, benefits any IT professional who deploys end-to-end network management solutions.

Gain automated root-cause and impact analysis for server, network, and storage domains with availability and configuration.



Smarts Courses

Smarts Service Assurance Manager Administrator

Overview of the SAM architecture, administration consoles; creating users, profiles, notification lists and tools to control the working environment for all users and operators; Business Impact Manager to represent the managed infrastructure in the context of the business entities that it supports; integration and configuration of the new Companion User Interface (CUI); hands-on labs allow participants to configure the SAM solution in a live server.

- Define the flow of information between EMC Smarts components
- View and explore the results of the diagnostic analysis via both the Global Console and the Companion User Interface (CUI)
- Analyze the network and service impacts caused by failures
- Maintain user logins and their associated user profiles
- Automate actions to respond to failure notifications
- Incorporate customer and service information into Service Assurance Manager to manage infrastructure in the context of business
- Express end-to-end insight into how IT health relates to key business services

(3 days)

Smarts IP Manager Administrator

Overview, Installation, Ionix IP Manager Fundamentals, Discovery Process, Auto-discovery Process, Polling Groups, Threshold Groups, Working with the Managed Topology, IP Tagging

- Describe the value proposition of IP Manager
- Classify the types of entities managed by IP Manager
- Recognize the fundamental capabilities of IP Manager, including the entities managed, relationships modeled and problems diagnosed
- Express how Ionix IP Manager fits within the Ionix suite of products
- Install and configure the IP Management Suite
- Configure IP Manager to discover and manage IP network systems

(2 days)

Service Assurance Suite Fundamentals Start here

Introduction and architecture, features and capabilities, SA Suite management overview

(1 hr)

Network Configuration Manager Courses

Smarts Network Configuration Manager (NCM) Implementation

Architectural overview, installation, configuration and discovery, post-installation and integration.

- Describe the basic capabilities, function, and architecture of NCM servers
- Evaluate platform support and sizing considerations for deploying NCM
- Identify the differences in distributed and combination NCM architectures
- Explain security, and port considerations for planning and installation of an NCM implementation
- Identify the steps necessary to install NCM using both the graphical user interface and silent installation scripts
- and more

(2 days)

Smarts Network Configuration Manager (NCM) Administration

Introduction, Console and Discovery Overview, Editors, Automation Library and Templates, Automating the Workflow, Attributed Model, Workspaces and Template Merge, Report and Compliance Advisors

- Determine device state using device properties
- Roll credentials on network devices
- Manage configuration & change management of devices in managed network
- Employ the Config, Configlet, Command, and Interface Editors to manage network devices
- and more

(3 days)

Smarts Network Configuration Manager Fundamentals

Introduction to the Smarts Network Configuration Manager (NCM), including an overview of the NCM architecture, features, and functionality.

(1 hr)

Additional Courses

Smarts MPLS Implementation and Management

Introduction, architecture and overview, installation and implementation, managing the MPLS environment, monitoring and troubleshooting, managing overlapping IP addresses

- Discuss the MPLS environment and the traffic it carries
- Describe the functionality of MPLS Manager
- List the hardware and software requirements for hosting the MPLS Manager
- Install MPLS Manager
- Integrate MPLS Manager into an EMC Smarts Management solution
- View some root cause problems identified by MPLS Manager, the results of its impact analysis, and the Notifications and Events generated

(2 days)

Smarts Network Protocol Manager Implementation and Management

The problem domain, NPM overview, installation, configuration, OSPF, BGP, EIGRP, and IS-IS management

- Install the Smarts Network Protocol Manager (NPM) software
- Integrate NPM software into the Smarts Service Assurance Manager solution
- Configure NPM to discover and manage your physical and virtual server infrastructure
- View the results of Smarts intelligent root cause analysis

(3 days)

[Click here for more details](#)

Purchase Options

Smarts-IT Mgmt&Serv VVPK VILTS

Includes two Video ILT and one self-paced e-Learning course.

CE-VIDVPKSMT



Watch4net

TARGET AUDIENCE: Benefits all individuals responsible for implementing or supporting Watch4net for networks and also gathering information from various networks and storage sources.

Accelerate the response to IT infrastructure challenges, monitor in real-time the performance of Internet protocol (IP) networks, data centers, applications, clouds, and mobile networks.

-  Instructor-Led Training
-  Online ILT
-  Video ILT (VILT)
-  e-Learning

Watch4net Courses

Watch4net Installation, Implementation, and Management

Installation, Implementation, Portal Administration, The Smarts Collector, the SNMP Collector, Storage Collectors, Filters, Alerting, Centralized Management, Troubleshooting

- Successfully install the Watch4net solution
- Administer the Watch4net Portal
- Configure Watch4net to gather information from various network and storage sources
- Implement a central management process for the Watch4net solution

 (4 days)

Watch4net Fundamentals ◀ Start here

Gain an understanding of EMC Watch4net's solution architecture, and how to use the Watch4net portal, access provided out-of-the-box reports, and use the provided tools

 (1 hr)

Watch4net Reporting Courses

Watch4net Custom Reporting

Report concepts, report creation

- Describe Watch4net's Report structure design and data manipulation.
- Efficiently make use of Watch4net tools and features in Report Design.
- Efficiently create various report types in Watch4net, like: Dashboard, Inventory, advanced graph reports (time-ratio, heat map, GeoMap), mixed reports, etc.
- Efficiently make use of formulas

 (3 days)

Watch4net Advanced Reporting and Data Analysis

Reporting overview, complex expansion, templates and ReportPack, collection querying

- Apply formulas concept in order to improve reports
- Compose cross-domain reports using complex expansion
- Publish custom reports by creating and managing custom ReportPacks
- Enhance report by using techniques in discovering the list properties available

 (2 days)

VSPEX Blue

TARGET AUDIENCE: Benefits those responsible for VSPEX BLUE administration, management, and monitoring

Learn how to configure, manage, and monitor VSPEX BLUE. This course also presents how to replace VSPEX BLUE Customer Replaceable Units (Power Supply).

VSPEX Blue Administration and Management

Architecture, Configuring and Managing the Environment, Cluster Shutdown and StartProSphere REST API, ProSphere Deployment and Discovery

 (2.5 hrs)

[Click here for more details >>](#)

Purchase Options

Watch4net VVPK VILTS

Includes one Video ILT and one self-paced e-Learning course

CE-VIDVPKW4N



May 2016: To see special offers, search our full course library, and to purchase online: visit <http://education.EMC.com>.

For local pricing and purchase options, contact your EMC account representative.

ITIL® Certification and Best Practices



Certification Alignment
 The ITIL® Foundations Certification courses include ITIL® certification exam.

TARGET AUDIENCE: Benefits IT professionals and managers responsible for implementing ITIL® best practices.

Learn the basics of IT Service Management. Become certified in ITIL Foundations.

- Instructor-Led Training
- Online ILT
- Video ILT (VILT)
- e-Learning

Foundation Certification Courses

ITIL® Foundations Certification Course

This course prepares the student to take the exam for ITIL® Foundations Certification in IT Service Management. The course provides a detailed explanation of the concepts, terms, definitions, objectives, benefits, and relationships within the core IT Service Management Lifecycle processes and functions, according to the IT Infrastructure Library® (ITIL®) framework.

- Service Management as a practice
- Service Lifecycle
- Key Principles and Models
- Generic Concepts
- Selected ITIL® Processes, Roles, Functions
- ITIL® Technology and Architecture
- ITIL® Qualification scheme

(3 days)

Additional Courses

ITIL® One-Day Overview*

Basic concepts and benefits of ITIL®; key concepts, terms, definitions, objectives, relationships, and benefits within the core ITIL® Service lifecycle framework.

- Describe five ITIL® Service lifecycle stages
- Identify key processes and functions in each ITIL® Service lifecycle stage
- Discuss considerations for implementing ITIL®

(1 day)

Intermediate Lifecycle and Capability Courses*

Expands foundations knowledge; in-depth focus on specific clusters of ITIL® processes or on a specific lifecycle stage; role-based hands-on experience; includes intermediate exams.

- Describe and discuss ITIL® best practices, technology and implementation considerations, challenges, critical success factors and risks for a Service Capability cluster or a Service lifecycle stage

(5 days)

ITIL Overview

Introduction to ITIL, service strategy, design, transition, operation, continual service improvement, ITIL implementation considerations

(1.5 hrs)

*Classes scheduled by Request Only

ITIL® is a registered trademark of AXELOS Limited

The Swirl logo™ is a trademark of AXELOS Limited

The ITIL Accredited Training Organization logo is a trademark of AXELOS Limited

IT Infrastructure Library® is a registered trademark of AXELOS Limited

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[Click here for more details >>](#)

Purchase Options

ITIL FNDS Cert Course VILTS

Includes one Video ILT. Contact EMC to get your ITIL® certification exam voucher.

CE-VILTITILF



ITIL® Foundations Certification Dedicated Class (Onsite)

If you are interested in having a qualified instructor to deliver this course at your company's location, or EMC's closest training facility, please contact your EMC sales representative or a Training Registrar.






EMC Storage Integration

TARGET AUDIENCE: Helps IT professionals to derive maximum value from virtualized information infrastructure by enabling and optimizing business continuity and disaster recovery solutions from EMC.

You will learn best practices for integrating EMC Storage with VMware and applications such as OpenStack, Microsoft Exchange, Microsoft SQL, and Oracle



Application Integration Courses

| | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| <p>OpenStack Integration with EMC Block Storage Solutions Overview of OpenStack Reference Architecture, OpenStack Integration with VNX, XtremIO, and ScaleIO</p> | <ul style="list-style-type: none"> Describe the required and recommended hardware infrastructure, connectivity, and software components for each block storage solution (VNX, XtremIO and ScaleIO) Validate compatibility of an OpenStack environment prior to attempting integration Explain at a high level the interaction and data flows between OpenStack components and the integrated EMC block storage components Outline the sequence of steps needed to integrate each of the three offered solutions with an OpenStack cloud List the supported Cinder features, and articulate the value proposition |  (2 hrs) |
| <p>EMC Storage Integration with Microsoft Exchange Best Practices Microsoft Exchange Server 2010 Overview, storage design, virtualization best practices</p> | <ul style="list-style-type: none"> Define the best practices when deploying Exchange Server 2010 to benefit from the FAST Suite of features on VNX and VMAX arrays Calculate performance and capacity requirements for Exchange Server 2010 in Thin Provisioned and Virtualized environments Identify the considerations and best practices when combining a virtualized Exchange infrastructure with Exchange native database resiliency features |  (1.5 hrs) |
| <p>EMC Storage Integration with Microsoft SQL Best Practices SQL server overview, SQL server sizing and array based replication, SQL server virtualization</p> | <ul style="list-style-type: none"> Define the core components, roles, and features of Microsoft SQL and SharePoint Server Properly size, deploy, and protect SQL Server on EMC storage arrays Implement best practices for SQL Server on VMware and Hyper-V virtualized environments |  (1.5 hrs) |
| <p>EMC Storage Integration with Oracle Best Practices The Oracle environment, Oracle storage layout best practices, virtualization best practices/considerations</p> | <ul style="list-style-type: none"> Discuss the components that make up an Oracle database Explain reasoning behind EMC's stated best practices regarding Oracle databases List the tools and metrics used in measuring database performance Explain how virtualization affects Oracle storage design List the best practices when replicating an Oracle environment |  (1 hr) |
| <p>EMC Storage Integration with VMware vSphere Best Practices VMware storage environment, ESXi networking and storage, generic VMware storage considerations, specific VNX and Symmetric considerations, tools, APIs, plug-ins.</p> | <ul style="list-style-type: none"> Generic storage considerations for a VMware environment Specific VNX and VMAX 1/2 environment considerations for implementing in a VMware environment Tools, APIs, plug-ins for implementing a VMware environment |  (2 hrs) |

[Click here for more details](#) >>

Purchase Options

The courses listed above can be purchased individually with a subscription, training units, or credit card. See page 6 for details.

May 2016: To see special offers, search our full course library, and to purchase online: visit <http://education.EMC.com>.

For local pricing and purchase options, contact your EMC account representative.

VMware vSphere and VMware Horizon View

Certification Alignment

These courses are aligned to VMware Certified Professional (VCP)

TARGET AUDIENCE: Helps IT professionals to derive maximum value from virtualized information infrastructure by investing in VMware education and certification.

You will learn to install, configure, secure, and analyze the VMware suite of server virtualization technology.

Prepare to become a VMware Certified Professional (VCP).



VMware vSphere Courses

VCP6-DCV: VMware vSphere: Install, Configure, Manage

Virtual machines, VMware vCenter Server, configure and manage virtual networks and manage vSphere storage, virtual machine management, access and authentication control, resource management and monitoring, data protection, high availability and fault tolerance, scalability, patch management, installing VMware vSphere 5 components

- Install and configure ESXi and vCenter Server components
- Deploy, manage, and migrate virtual machines
- Manage user access to the VMware infrastructure
- Monitor resource usage using vCenter Server
- Increase scalability using vCenter Server
- Apply ESXi patches using VMware vCenter Update Manager
- Manage higher availability and data protection using vCenter Server



(5 days)

VCP: VMware vSphere: Troubleshooting

Introduction, troubleshooting tools, SSL certificates, Networking, Storage, Cluster Management, vCenter Server and ESXi, virtual machines

- Use the VMware vSphere Web Client, the command line, and log files to diagnose and correct problems in vSphere
- Troubleshoot issues in SSL Certificate, networking, storage, single sign-on, vCenter server, ESXi host, VMware vSphere High Availability cluster, VMware vSphere vMotion, virtual machine



(5 days)

VCAP-DCD: VMware vSphere: Design Workshop

Design process overview, ESX/ESXi host design, vSphere virtual datacenter design, vSphere network design, vSphere storage design, virtual machine design, management and monitoring design, design workshop

- Identify design goals, requirements, and constraints
- Identify useful information for making design decisions
- Recognize and analyze best practice recommendations
- Analyze alternative design choices



(3 days)

VC6-DCV: VMware vSphere: Optimize and Scale [V6]

This training course, for experienced VMware vSphere® personnel, teaches advanced skills for configuring and maintaining a highly available and scalable virtual infrastructure. The course is based on VMware vSphere® ESXi™ 5.0 and VMware® vCenter Server™ 5.1.

- Configure and manage ESXi networking and storage for a large and sophisticated enterprise
- Manage changes to the vSphere environment
- Optimize the performance of all vSphere components
- Troubleshoot operational faults and identify their root causes
- Use VMware vSphere® ESXi™ Shell and VMware vSphere® Management Assistant (vMA) to manage vSphere
- Use VMware vSphere® Auto Deploy™ to provision ESXi hosts



(5 days)

VCP6-DCV: VMware vSphere: Fast Track

Introduction, software-defined data center, creating virtual machines, VMware vCenter server, troubleshooting vSphere, configuring and managing virtual networks and virtual storage, virtual machine management, resource management and monitoring, vSphere HA and vSphere FT, host scalability with vSphere DRS, vSphere Update Manager and host maintenance, installing vSphere components.

- Deploy an ESXi host and create virtual machines; vCenter Server instance or VMware vCenter Server Appliance
- Configure & manage the vSphere infrastructure with the VMware vSphere Client & VMware vSphere Web Client
- Configure virtual networks with vSphere standard switches
- Use a content library; Migrate virtual machines with VMware vSphere vMotion
- Use VMware vSphere Storage vMotion to migrate virtual machine storage
- Use VMware vRealize Operations Manager to identify and solve issues
- Manage VMware vSphere High Availability and VMware vSphere Fault Tolerance
- Use VMware vSphere Replication and VMware vSphere Data Protection to replicate virtual machines and perform data recovery
- Use VMware vSphere Distributed Resource Scheduler clusters to improve host scalability
- Use vSphere distributed switches to improve network scalability
- Use VMware vSphere Update Manager to apply patches
- Perform basic troubleshooting



(5 days)

VMware Horizon View Courses

VCP6-DTM: VMware Horizon View Install, Configure, Manage

Hands on training course in VMware Horizon View Desktops, Connection server, client options, administrator, configuring and managing linked clones, local mode desktops, managing security, persona management, command line tools and backup options, connection server performance and scalability, application manager, VMware ThinApp.

- Install and configure Horizon View components.
- Create and manage dedicated and floating desktop pools.
- Deploy and manage linked-clone virtual desktops.
- Configure and manage desktops that run in local mode.
- Configure user profiles with View Persona Management.
- Configure secure access to desktops through a public network.
- Use ThinApp to package applications.
- Entitle applications by using Horizon View



(4 days)

[Click here for more details >>](#)

Purchase Options

vSphere ICM Onsite

If you are interested in having a qualified instructor to deliver this course at your company's location, or EMC's closest training facility, please contact your EMC sales representative or a Training Registrar.

CE-OSVSPICM



VMware vCenter and VMware vCloud

TARGET AUDIENCE: VMware vCenter is for IT professionals to simplify IT management with VMware vCenter virtualization and cloud management solutions.

This training will help you accelerate IT service delivery, transform operational efficiency, automatically assure compliance, and reduce business risks.

TARGET AUDIENCE: VMware vCloud training is best suited for IT professionals responsible for designing public and private cloud architectures with VMware products.

Students will learn to appreciate the effects of design choices in VMware vSphere, VMware vCloud Director, VMware vCenter Chargeback, and the VMware vShield Edge capability that is included with vCloud Director.



VMware vCenter Courses

VMware vRealize Operations Manager: Install, Configure, Manage

For experienced users of VMware® vSphere® teaches skills in the use of VMware® vCenter™ Operations Manager™ as a forensic and predictive tool. The course is based on VMware ESXi™ 5.x, VMware® vCenter Server™ 5.x, and vCenter Operations Manager 5.x.

- Navigate the vCenter Operations Manager user interface
- Use alert details and badges to find the root causes of common operational issues in a vSphere environment
- Assess capacity risk and infrastructure utilization
- Perform capacity planning and what-if analyses
- Configure policies to meet the operational needs of the environment
- Add users and groups, give them appropriate access to vCenter Operations Manager environment
- Customize vCenter Operations Manager by creating alert definitions, symptom definitions, views, reports, dashboards, and super metrics
- Extend the capabilities of vCenter Operations Manager by adding solutions
- Scale a vCenter Operations Manager deployment and make it highly available
- Install and configure, monitor and maintain vCenter Operations Manager



VMware vCenter Site Recovery Manager: Install, Configure, Manage

Use of VMware® vCenter™ Operations Manager™ as a forensic and predictive tool. The course is based on VMware vSphere® ESXi™ 5.0, VMware® vCenter™ Server 5.0, and vCenter Operations Manager 5.0.

- Install SRM; Understand the storage replication options
- Deploy and configure VMware vSphere® Replication (VR)
- Configure inventory and resource mappings
- Build protection groups based on VR
- Create, edit, execute, and test a recovery plan
- Perform a planned migration; Perform a reprotect and a failback



VCP6-CMA: VMware Cloud Orchestration and Extensibility

Automation of IT processes, using Orchestrator Client, workflows, integration, VMware vSphere API

- Run the Orchestrator platform
- Use the Orchestrator client to import and run library workflows
- Develop and run custom parameterized workflows
- Design and develop reusable workflows
- Use VMware vSphere® API to automate various VMware® vCenter™ tasks
- Integrate Orchestrator into VMware vSphere® Web Client
- Integrate Orchestrator with external systems using plugins
- Document workflows; Apply version control to workflows; Export and package workflows



VMware vCloud Courses

VMware vCloud Director: Install, Configure, Manage

Deploy VMware® vCloud Director® for a small private cloud environment and manage the ongoing operation of the deployment

- Deploy vCloud Director, manage vCloud Director for small private cloud business
- Configure VMware vSphere® storage to enable multiple tiers in provider virtual datacenters.
- Create and manage vCloud Director organizations and VMware vSphere® vApps™ (“vApps”) to satisfy business needs.
- Create and manage vCloud Director catalogs, configure networking for organizations and vApps.
- Interface vCloud Director to Microsoft Active Directory servers.
- Understand the interactions between VMware vSphere® Distributed Resource Scheduler™ clusters and vCloud Director



VCP6-CMA: VMware vRealize Automation: Install, Configure, Manage

VMware vCloud Automation Center Architecture and Components; Distributed Execution Managers and Agents; Configuration, Provisioning, and Management; self service portal; managing and monitoring resources; models and workflows; installation and upgrade

- Installing, configuring, and managing VMware vCloud® Automation Center™.
- Configuration and use of vCloud Automation Center as a platform for self-service provisioning of virtual, cloud, and physical machines to create and manage on-demand multivendor cloud infrastructures



VMware NSX Courses

VCP6-NV: VMware NSX: Install, Configure, Manage

VMware NSX Components for Management and Control; Logical Switch Networks; Routing with VMware NSX Edge Appliances; Feature of the VMware NSX Edge Services Gateway; VMware NSX Security

- Describe how NSX is the next step in the evolution of the SDDC
- Configure and deploy NSX components for management and control
- Describe basic NSX layer 2 networking; configure, deploy, use logical switch networks
- Configure and deploy NSX distributed router appliances (E-W connectivity) and NSX Edge services gateway appliances (N-S connectivity) and more...



[Click here for more details](#) >>

Purchase Options

The courses listed above can be purchased individually with a subscription, training units, or credit card. See page 6 for details.

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For local pricing and purchase options, contact your EMC account representative.

Welcome to EMC Enterprise Content Division (ECD) Education Services

Technology confidence for implementation success

Preparing your team for EMC implementation success starts here. EMC Enterprise Content Division (ECD) Education Services offers a diversity and depth of offerings to enable your technology success. We teach content management expertise, including document and data capture, content transformation, document generation, and industry-specific content management. By gaining technical competence and confidence across these areas, your teams can drive the highest possible impact from your ECD technology investments.

At ECD Education Services, we bring our deep and current ECD product knowledge to many flexible learning options, and we keep new learning accessible through our seasoned on-line community members.

As you'll see throughout this comprehensive course catalog, training by job role or by product is available across the ECD technology set, including:

- [ApplicationXtender](#)
- [Captive](#)
- [D2](#)
- [Documentum](#)
- [Document Sciences](#)
- [xCP](#)

Our latest course offerings now cover solution and industry based topics, such as Engineering Plant & Facilities Management and Life Sciences Fundamentals.

But we offer much more than classes, as you'll see in the following sections. Our goal is to ensure your ECD implementation success.

Why ECD?

ECD as your training provider offers several unique capabilities:

[Instructional designers tapped directly into ECD product development teams](#)

With over 15,000 hours invested in courseware development, quality in the depth of our product knowledge is a key differentiator. We are completely immersed in our technology, which means our instructors and curriculum provide a deep and detailed level of knowledge. Our designers can connect instantly with any EMC technical expert they need, to know exactly the detailed status on a product feature or functionality aspect.

[One source for all of your team's needs](#)

As part of a larger technology organization, we offer flexibility, whether in learning paths, learning styles, or delivery options. All of your varied team members' needs can be addressed by one provider, regardless of role or physical location.

[New learning methods](#)

The world of education has changed dramatically in our social media world. We tap into real-time feedback, chats and community knowledge to continually improve and refresh content. If you haven't seen our EMC Community Network (ECN), check it out at <https://community.emc.com/welcome>. All ECD course alumni can plug into these communities anytime to ask a follow up question, share a tip, or otherwise stay connected and up-to-date. This keeps our curriculum customer-centered, not vendor-centered. These methods help support your success with ECD.

For local pricing and purchase options, contact your ECD learning consultant.




<http://mylearn.emc.com/Contact>

ECD Education Services Portfolio Overview

Everything you need for Technical and Professional Success

At ECD Education Services, our goal is provide you the right training, the optimal way, to the appropriate people throughout your project lifecycle. We offer four major categories of assistance, from strategies for how and why to approach education in your organization, to validating the knowledge in your organization through specific certifications. In between, we have many different types of training content and delivery options.

The following visual represents an overview of the ECD Education Services portfolio of services we can deliver, depending on your needs:

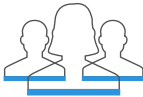
| | | | | | | |
|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|--------------------------|----------------------------------------------------------------------------|----------------------|-------------------------|
|  STRATEGIC SERVICES | KNOWLEDGE AND SKILLS ANALYSIS (KSA) | | | | | |
| |  APPLICATION & ROLE-BASED TRAINING | BUSINESS TEAM Business Analysts Program & Product Managers Business Leaders | | TECHNICAL TEAM System Administrators Developers Architects | | END USERS |
|  DELIVERY OPTIONS | | Onsite (ILT) | Live-Online (Online ILT) | Video Instructor Led Training (VILT) | Classroom (ILT) | Self-Paced (e-Learning) |
| | EMC² PROFESSIONAL CERTIFICATION | Associate | Application Developer | System Administrator | Technology Architect | |



Strategic Services

Work with ECD learning experts to develop a customized plan & fulfill your unique learning needs.


At a strategic and holistic level, we provide Knowledge and Skills Analysis (KSAs) and custom end user training plans based on the unique skills and needs of your organization. These services take the experience and specialized know-how of our team, and apply it to your learning goals for a custom solution. You walk away with a plan for how to get where you need to go.



Application and Role-based Training

Select from application or role-based training to strengthen competencies & knowledge.


For targeted learning, we provide standardized technical training for technical users, as well as courseware for end users and business users. This catalog details our application and role-based course offerings, which are continually updated at mylearn.emc.com.



Delivery Options

Choose the best delivery type for your learning style.

Since everyone learns differently, our delivery types provide a variety of options, from on site classes to self-paced on-line modules. This catalog uses color-coded icons to denote delivery type, such as video instructor led training, on site training, etc. Learning paths are available to guide your education.



Professional Certification

Validate knowledge retention and motivate staff.

To validate knowledge transfer, we offer exams and certifications at three levels of recognition across various ECD product lines. More important than just completing a course is validating that the knowledge is truly learned. Certifications provide validation and offer career paths of substance for motivated learners.



RSA Training and Certification

As you implement new technologies, add new functionality to existing systems, or orient new staff, education is a crucial element. Consistent training helps to maintain the security of your computing environment, improves the end-user experience, and increases productivity and job satisfaction in your organization.

About RSA Education Services

RSA Education Services is dedicated to providing practical and relevant courses that support security learning across an enterprise - from end users to administrative staff to security practitioners, analysts, and forensic investigators. RSA's unique position and presence in the industry allows RSA Education Services to offer the best in leading-edge courses delivered by professionals with intense dedication and years of experience.

RSA Product Training

Our worldwide training services are targeted to serve professionals who are responsible for installing, supporting, and administering the entire range of RSA solutions. Developed for security administration and network operations, product courses offer a variety of teaching methods including traditional instructor-led and virtual instructor-led training, video-based learning, and e-learning. Each of these options gives you the flexibility to select a learning mode that best fits your learning style, time constraints, and budget.

Security Awareness and Cyber Defense

RSA Education Services provides learning on various security topics. We offer a variety of e-Learning courses to support your organization's security awareness efforts. We also wish to enable the current and next generation of security professionals to address the latest threats to information and infrastructure security. To that end, we also offer a Cyber Defense curriculum and training on CISSP Certification.

See the next page for a summary of RSA Training Offerings by Delivery Mode.

RSA Certified Security Professional

By becoming an RSA Certified Security Professional, you possess the credentials that demonstrate that you have the knowledge and skills necessary to function as a practical expert in the rapidly growing information security industry.

Our relationship with Pearson VUE, which operates 5,000 testing centers in 165 countries, provides convenient access to certification exams and ensures impartial testing.

Learn more at www.emc.com/rsa-training.

Contact Us

Online: www.emc.com/rsa-training

Email: trainingregistration@rsa.com

Phone: 800-995-5095
781-515-7700 (International)



Summary of RSA Training Offerings

List of  Instructor-Led,  Online ILT  Video ILT  e-Learning Training

| Delivery Mode | Course Title | Technology |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| |  RSA ECAT Fundamentals | Advanced Security Operations Center |
| |  RSA ECAT Hunting | Advanced Security Operations Center |
| |  RSA ECAT Installation | Advanced Security Operations Center |
|  | RSA Hunting Workshop for Analysts | Advanced Security Operations Center |
| |  RSA Security Analytics 10.6: What's New | Advanced Security Operations Center |
| |  RSA Security Analytics Installation and Configuration | Advanced Security Operations Center |
|   | RSA Security Analytics Core Administration | Advanced Security Operations Center |
| |  RSA Security Analytics Introduction to ESA | Advanced Security Operations Center |
| |  RSA Security Analytics ESA EPL Rules | Advanced Security Operations Center |
| |  RSA Security Analytics Event Sources | Advanced Security Operations Center |
|   | RSA Security Analytics Foundations | Advanced Security Operations Center |
| |  RSA Security Analytics Hunting | Advanced Security Operations Center |
| |  RSA Security Analytics Incident Management | Advanced Security Operations Center |
| |  RSA Security Analytics Introduction | Advanced Security Operations Center |
| |  RSA Security Analytics Introduction to Troubleshooting for Customers | Advanced Security Operations Center |
| |  RSA Security Analytics Log Parsers Overview | Advanced Security Operations Center |
| |  RSA Security Analytics Troubleshooting ESA Rules | Advanced Security Operations Center |
| |  RSA Security Operations Management Essentials | Advanced Security Operations Center |
|   | RSA Security Operations Management Solution Basics | Advanced Security Operations Center |
|   | RSA Cyber Defense Workshop | Cyber Defense |
|   | RSA Incident Handling and Response | Cyber Defense |
|   | RSA Malware Analysis | Cyber Defense |
|   | RSA Operational Cyber Intelligence | Cyber Defense |
|   | RSA SOC Simulation Challenge | Cyber Defense |
|   | RSA Adaptive Authentication On Premise Administration | Fraud Prevention |
| |  RSA Adaptive Authentication for eCommerce Back Office Tools | Fraud Prevention |
| |  GRC Overview | Governance, Risk and Compliance |
|   | RSA Archer Administration | Governance, Risk and Compliance |
|   | RSA Archer Advanced Administration | Governance, Risk and Compliance |
|   | RSA Archer GRC 6 Administration I | Governance, Risk and Compliance |
|   | RSA Archer GRC 6 Administration II | Governance, Risk and Compliance |
| |  RSA Archer Solutions Overview | Governance, Risk and Compliance |
| |  RSA Archer Solution Area: Audit Management | Governance, Risk and Compliance |
| |  RSA Archer Solution Area: Business Resiliency | Governance, Risk and Compliance |
| |  RSA Archer Solution Area: IT Security Risk Management | Governance, Risk and Compliance |
| |  RSA Archer Solution Area: Operational Risk Management | Governance, Risk and Compliance |
| |  RSA Archer Solution Area: Regulatory and Corporate Compliance Management | Governance, Risk and Compliance |
| |  RSA Archer Third Party Governance Solution Overview | Governance, Risk and Compliance |
|   |  RSA Archer Custom End-User Training Service | Governance, Risk and Compliance |
| |  RSA Authentication Manager 6.1 to 8.x Data Migration | Identity |
| |  RSA Authentication Manager 7.1 to 8.x Data Migration | Identity |
|    | RSA Authentication Manager Administration | Identity |
|    | RSA Authentication Manager Installation and Configuration | Identity |
| |  RSA Business Role Manager | Identity |
| |  RSA Data Access Governance Basics | Identity |
|  | RSA SecurID Help Desk Basics | Identity |
| |  RSA Via Access Architecture Basics | Identity |
| |  RSA Via Access Configuration | Identity |
| |  RSA Via Access Solution Basics | Identity |
|   | RSA Via Lifecycle and Governance Administration | Identity |
|  | RSA Certified Information Systems Security Professional (CISSP) Boot Camp | Security Concepts and Principles |
| |  RSA Security Awareness Program | Security Concepts and Principles |

[Click here for more details](#) >>

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Pivotal, Hadoop, and Greenplum

Pivotal

TARGET AUDIENCE: Benefits IT professionals who plan to work with big fast data and leverage the extended capabilities of Pivotal.

Includes courses for Big Data Suite, PaaS/Pivotal Cloud Foundry, and App Suite Learning Paths.

 Instructor-Led Training
  Online ILT
  Video ILT (VILT)
  e-Learning

Hadoop Courses

Open Source Hadoop Essentials

Hadoop overview, HDFS, HBASE, Map Reduce on YARN, Hadoop streaming, Map Reduce Workflows, Oozie, Pig, Hive.

- Know the key aspects of writing and submitting MapReduce jobs in various forms
- Know the lifecycle of a job, the means to write MapReduce programs in Java (or a preferred language), writing unit tests, optimizing data transmission and storage, and using other products in the Hadoop ecosystem that can expedite developing and orchestrating MapReduce jobs.




 (4 days)

Open Source Hadoop Administration

Hadoop introduction, planning your Hadoop clusters, HDFS, Getting data into HDFS, MapReduce, Hadoop Installation & initial configuration, installing/configuring Hive, Impala, and Pig, Hadoop Clients, Cluster maintenance, monitoring, troubleshooting, hadoop security.

- Describe the fundamental concepts of using Big Data
- Identify where Hadoop fits into a Big Data strategy
- Learn to plan your Hadoop cluster.
- Learn HDFS features, how to get data into HDFS.
- Learn to work with MapReduce
- Learn installation and configuration of Hadoop, cluster maintenance.




 (4 days)

Greenplum Courses

Greenplum Architecture, Administration, and Implementation

Introduction to the architecture, configuration and nomenclature of Greenplum systems, high level knowledge of the "Shared Nothing" MPP environment and data warehousing techniques. Learn to install, upgrade, and maintain the Greenplum database system by evaluating logical models and business requirements in order to determine the best physical design for a small Greenplum database and write well tuned detailed business intelligence reports and queries. The labs within this course will guide the student through an implementation during which they will learn the skills and techniques particular to Greenplum databases.

- Describe Greenplum architecture and components
- Define a PostgreSQL open source databases and the relationship with Greenplum
- Review SQL related similarities and differences between PostgreSQL and Greenplum
- Review basic Greenplum utilities and client tools
- Describe the Greenplum Database architecture, components, features, and capabilities
- Perform common database activities within the Greenplum Database
- Administer and troubleshoot your Greenplum Database system
- Create a Greenplum Database and Schemas
- Evaluate Logical and Physical Data Models
- and more




 (5 days)

Greenplum Unified Analytic Platform Fundamentals [Start here](#)

Get an overview and understand the benefits offered by the Greenplum Unified Analytic Platform, examine the evolution from the data warehouse to the impact of Big Data in the industry


 (2 hrs)

Additional Courses

Collaborative Analytics with Greenplum Chorus

Greenplum Chorus product overview, interacting with Greenplum Chorus, advanced functions

- Describe the purpose of Greenplum Chorus in an analytic environment
- Describe the architecture for the Chorus environment, highlighting the components & communication protocols used to communicate among them
- Manage users, workspaces, and data in the Greenplum Chorus environment
- Manage work files associated with different workspaces
- Use on-board analytic tools to visualize data & provide insights on these data


 (1 day)

Greenplum Chorus Implementation and Maintenance

Product overview, installing and configuring Greenplum Chorus, managing users, workspaces, and data related objects, administration, and troubleshooting

- Describe the purpose of Greenplum Chorus in an analytic environment
- Describe the architecture for the Chorus environment, highlighting the components and communication protocols used to communicate
- Install and configure Greenplum Chorus
- Manage users and workspaces in the Greenplum Chorus environment
- Use the Greenplum Chorus API to access and manage Greenplum Chorus data
- Perform administrative tasks for Greenplum Chorus


 (1 day)

[Click here for more details](#) >>

Purchase Options

Greenplum VVPK VILTS

Includes one Video ILT course and one e-Learning.

CE-VIDVPKGP



Greenplum ValuePak















































Includes one Instructor-Led or Online-ILT course and one e-Learning.

CE-VALPAKGRNP



Summary of Other Pivotal Training Offerings

List of  Instructor-Led*,  Online ILT*,  Video ILT  e-Learning Training

| Delivery Mode | Course Title | Technology | Certification Alignment |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------------------------------------------------------------------|
|  | Introduction to Pivotal HD  Start here | Big Data Suite | |
|  | Pivotal HD Administration | Big Data Suite | |
|   | Processing Big Data with Pivotal HD | Big Data Suite | |
|  | Introduction to Pivotal HDB  Start here | Big Data Suite | Pivotal Certified HDB Architect |
|   | HDB Architecture and Implementation | Big Data Suite | Pivotal Certified HDB Architect |
|  | Introduction to GemFire  Start here | Big Data Suite | Pivotal Certified GemFire Developer Pivotal Certified GemFire Administrator |
|   | GemFire Developer | Big Data Suite | Pivotal Certified GemFire Developer |
|   | GemFire Administration | Big Data Suite | Pivotal Certified GemFire Administrator |
|  | Introduction to GemFire XD | Big Data Suite | |
|   | GemFire XD Developer | Big Data Suite | |
|  | Data Science in Practice | Big Data Suite | |
|  | Introduction to Greenplum Database  Start here | Big Data Suite | |
|  | Introduction to Pivotal Cloud Foundry  Start here | PaaS/Pivotal Cloud Foundry | |
|   | Developing Applications with Cloud Foundry | PaaS/Pivotal Cloud Foundry | Pivotal Cloud Foundry Developer |
|   | Pivotal Cloud Foundry ICM | PaaS/Pivotal Cloud Foundry | |
|   | Core Spring | App Suite | Pivotal Certified Spring Professional |
|  | Enterprise Integration with Spring | App Suite | Pivotal Certified Enterprise Integration Specialist |
|   | Spring Web | App Suite | Pivotal Certified Spring Web Application Developer |
|   | What's New in Spring | App Suite | |
|   | JPA Spring | App Suite | |
|   | Groovy and Grails | App Suite | |
|   | Pivotal RabbitMQ | App Suite | |
|   | RabbitMQ Install, Configure, Manage | App Suite | |
|  | Introduction to Redis  Start here | App Suite | |
|   | Redis Install, Configure, Manage | App Suite | Pivotal Certified Redis Administrator |

*Instructor-led classes in the above list are scheduled by Request Only.

Purchase Options

For questions or to schedule a class, contact education@gopivotal.com.

May 2016: To see special offers, search our full course library, and to purchase online: visit <http://education.EMC.com>.

For local pricing and purchase options, contact your EMC account representative.

KNOWLEDGE AND SKILLS ANALYSIS

Understanding your EMC Education Path

ESSENTIALS

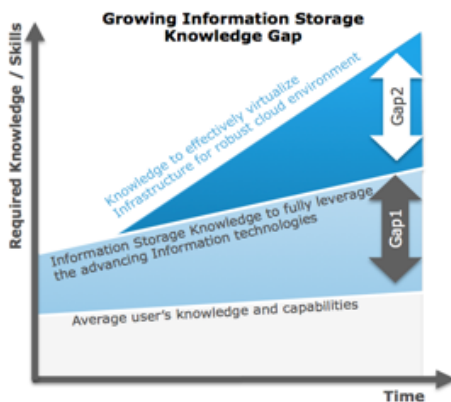
Accelerate your organization—get expert training advice:

- Insight into knowledge and skills required for success
- Detail analysis of current skills
- Gap analysis
- Detailed training plans
- Help executing the plan

BUSINESS CHALLENGE

Technology advancements and ongoing business demands require professionals to remain ahead of the knowledge curve. Managers are challenged to balance increasing business demands with existing employee skills and experience. Organizations must reassess and address employee competency levels in order to close knowledge gaps and maximize their technology investments.

EMC conducted an annual survey¹ with IT managers and professionals that revealed concerns about skills of their teams: only 35 percent of all survey participants and 14 percent of the managers believe they have at least half of their teams capable of working with virtualized and IT-as-a-Service environments respectively.



EMC KNOWLEDGE AND SKILL ANALYSIS SERVICE

EMC's award-winning Education Services organization provides a value-based Knowledge and Skill Analysis Service designed to help you more fully identify and address specific areas of operational challenge in order to realize the optimum value of your deployed and planned investments in EMC®, VMware, RSA, VCE, and Pivotal information infrastructure solutions, including non-product specific training for industry standard methodologies such as IT-as-a-Service.

SERVICE DESCRIPTION

EMC works closely with IT, Human Resources, and Training management to understand business objectives and pain points. Consultants will use surveys and interviews to evaluate the skills of targeted professionals; examine the past training history; conduct a training needs analysis; and develop an action plan for closing skill gaps and achieving defined business objectives. A customized education solution is proposed that includes detailed individual and organizational development plans.

KEY BENEFITS

- Optimized use of EMC solutions—improved IT return on investment (ROI)
- Increased productivity
- Improved IT operational efficiencies
- Reduced errors enabling more continuous availability
- Faster implementations
- Improved internal Service-Level Agreements (SLAs)
- Aligns training to business goals and specific job/task requirements

¹Managing Information Storage: Trends, Challenges, and Options 2013-2014



ENGAGEMENT STEPS

- An EMC Education Solutions Consultant (ESC) meets with management to gather information and establish goals for the Knowledge and Skills Analysis engagement
- Using surveys and interviews, the ESC gathers needed information from designated personnel
- The ESC examines customer training history for existing technology and industry standard methodologies (e.g. Cloud Architecture) and develops a gap analysis
- Findings, with noted challenges and issues, are documented and analyzed
- The ESC consolidates the information and creates a customized education solution and detailed training plan
- The ESC provides management with a copy of the proposal and schedules a follow-on session to review findings and determine next steps

EXAMPLE

A major global telecommunications company needed to prepare their staff for major changes in technologies and methodologies. An Education Knowledge and Skills Analysis was conducted resulting in learning path for over 100 students across all areas of IT and related disciplines. The knowledge and skills learned from training led to more timely execution of key initiatives and significant reductions in IT issues.

For more information on EMC Education Services or the EMC Knowledge and Skill Analysis Service, contact your local EMC sales representative or visit www.EMC.com/training.

ON-DEMAND LEARNING CENTER

Imagine the impact of ongoing access to a vast collection of education content for you and your organization. Access the On-demand Learning Center through the Education Services website.

Leverage the transformation power of the On-demand Learning Center to:



EVALUATE NEW PRODUCTS AND FEATURES ON DEMAND.

No need to wait for your new product to be purchased. Gain access to required training when you need it. Access a broad spectrum of e-Learning and Video ILT-Stream courses and evaluate new products and features anytime.



REFINE YOUR SKILLS AND BUSINESS TRANSFORMATION STRATEGY.

With EMC's unique 'open' curriculum, you can learn and apply technology concepts, design principles, and other considerations such as IT as a service, cloud, big data, and virtualization to a variety of IT initiatives involving multiple vendor solutions.



ACCELERATE TIME TO PRODUCTIVITY OF NEW TEAM MEMBERS.

Take the guesswork out of education planning. With access to more than 35 Learning Paths organized by EMC product and technology, new team members can quickly be brought up to speed by leveraging our proven blended learning model.



ADVANCE APPLICATION INTEGRATION AND PERFORMANCE OPTIMIZATION.

Taken EMC courses before? Have experience using EMC technologies? Take our advanced level courses in your preferred learning mode and start leveraging advanced features that you have not had the chance to implement.



GET CERTIFIED AND DEMONSTRATE YOUR EXPERTISE. RECEIVE EXCLUSIVE BENEFITS.

EMC Proven Professional is a leading education and certification program in the IT industry, providing comprehensive coverage of information technologies, virtualization, cloud computing, data science/big data analytics, and more.

Download the Customer Catalog at education.EMC.com/CustomerCatalog.

INVITATION TO LEARN AT THE SPEED OF SEARCH

Gain instant access to on-demand learning.

Video ILT-Stream Collection

Learn based on your preference in a classroom-like experience via these modular, self-paced courses delivered by top EMC instructors.

e-Learning Collection

Learn anytime, anywhere. Access online or download the student guide for offline use at your convenience.

Featured Classroom Training

Learn in a traditional classroom, with hands-on labs and case studies, delivered by top EMC instructors.

One-stop Shop for Education

Access EMC, VMware, RSA, and Pivotal courses in one website. Leverage EduCare to meet organizational training needs.

EMC² Pivotal RSA vmware

Student Discussion Community

Visit our student discussion community to post questions, find answers, and connect with peers.

Free Practice Tests

Assess your level of readiness. Reinforce what you've learned and get a feel for the certification exam experience.

Technology Articles

Leverage curated content including Knowledge Sharing articles authored by EMC Proven Professionals, SME blogs, and the latest industry news.



EMC EDUCARE MEMBERSHIP

Value-added learning for continuous readiness in supporting EMC storage and information infrastructure solutions

ESSENTIALS

- EMC EduCare provides an annual corporate membership for continuous readiness to support EMC storage and information infrastructure solutions
- Receive special access to EMC resources and expertise to support, manage, measure, and extend learning into successful performance
- Learning innovation

BUSINESS CHALLENGE

Training within most organizations is often treated as isolated events rather than an ongoing process. This 'event' approach does not connect, reinforce, and leverage learning to solve critical business issues.

Transforming training into a continuous learning process by applying coaching, development, and productivity resources optimizes learning investments. Implementing a managed development process accelerates skills readiness and improves the confidence and ability to apply learning to meet real-life performance requirements.

EMC EDUCARE MEMBERSHIP

EMC Education Services provides an annual corporate membership service that provides a portfolio of key valued-added learning extensions that enable continuous readiness to support EMC® storage and information infrastructure solutions.

EMC EduCare development services include open access to 24x7 virtual training labs, customized ask-an-expert sessions, targeted webinars, and ongoing education consultant support to collaborate and help manage your skills readiness plan. These development tools and resources are tailored to the individual needs of the storage and data center teams. Technology advances have made it possible for many of these development services to be delivered directly to the desktop.

The EMC EduCare Membership offers special access to EMC resources and expertise to support, manage, measure, and extend learning into improved performance. A dedicated EMC Program Management Office (PMO) provides guidance to members and monitors activity levels to ensure maximum benefits.

KEY BENEFITS

This comprehensive learning package promotes continuous learning through complementary education offerings. Customers who purchase the EMC EduCare Membership will enjoy many benefits including:

- Increased ability to deal with technology changes
- Improved job satisfaction and productivity
- Increased effectiveness of training investment
- Accelerated learning transfer to workplace
- 24x7 access
- Dedicated Program Management Office









Scan with a QR code reader to connect with us on the EMC Community Network

EMC EduCare Resource Center



TRANSFORMING TRAINING INTO A CONTINUOUS LEARNING PROCESS BY APPLYING COACHING, DEVELOPMENT, AND PRODUCTIVITY RESOURCES TO OPTIMIZE LEARNING INVESTMENTS.

| Service | Description | Benefits |
|------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p>Education Services Virtual Portal (ESVL)*</p> | Provides real-world experience with the complete suite of EMC technologies in a safe non-production environment | Advances and reinforces technical skills by practicing what you've learned Evaluate/test technology enhancements prior to acquisition and/or implementation |
|  <p>Ask the Experts*</p> | Monthly scheduled 1-2 hour defined topic Q&A sessions with EMC Education experts. Discussion before, during, and after session | Individualized coaching and feedback to improve productivity and performance |
|  <p>Best Practices Webinars</p> | Webcast events (1-2 hours) that focus on key EMC product and technology operational considerations and best practices | Extend and reinforce learning Help shape and lead change Further extend the ROI horizon |
|  <p>Knowledge Maintenance</p> | Updates to EMC formal training; focused on release differences, operational considerations, and best practices for EMC technologies | Aligns learning to business goals and specific job/task requirements |
|  <p>EduCare Health Check</p> | Annual readiness check to assess training plan progress and corresponding business impact | Advances and reinforces technical skills by practicing what you've learned |
|  <p>Designated EMC Education Solutions Consultant</p> | Assigned to assist IT and Data Center management with developing customized EMC Education solutions targeted at maintaining optimal storage team skills and competencies | Help customers achieve optimum business value and ROI from EMC information infrastructure technologies |
|  <p>EMC World Passes**</p> | Two (2) passes to the premier educational forum for EMC customers, partners, and IT professionals | Gain unparalleled access to EMC's entire portfolio of software, platforms, solutions, services, and industry trends |

* Included in EduCare Express

** Two (2) passes to the next upcoming EMC World conference which is the premier education forum for EMC customers, partners and IT professionals. EMC reserves all rights to substitute the two (2) passes (in whole or in part) with EMC training units equal in value to twenty-five hundred U.S. dollars (\$2,500.00USD) per pass or five thousand U.S. dollars (\$5,000.00USD) for both passes. You agree to this substitution option by placing an order for EMC EduCare.

For details, visit <http://education.emc.com/emceducare>



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GET STARTED WITH EMC PROVEN PROFESSIONAL STARTERKITS



Accelerate Your IT Skills Transformation

The EMC Proven Professional StarterKit provides you with all the components you need to achieve your Associate level certification, a key step in your IT skills transformation and a valuable addition to your credentials as an IT professional.

Take the first step. Get the StarterKit.



Information Storage and Management v3

Gain instant access with Video ILT-Stream

Gain valuable insight to key technology strategies for traditional and software-defined data centers using the cloud computing reference model.

Take the Information Storage and Management v3 (ISM v3) course to gain valuable insight to key technology concepts and principles such as Software-defined Data Centers, where all infrastructure elements – networking, storage, compute, and security – are virtualized and delivered as a service, and Third Platform technologies – cloud, Big Data, mobile, and social. Earn your EMCISA certification.

Extensive coverage of key technology strategy topics include:

- Data center infrastructure and its elements
- Infrastructure requirements for Third Platform
- Intelligent storage system - traditional and software-defined
- Storage networking protocols and software-defined networking
- Backup, recovery, deduplication, and archive
- Local and remote replication
- Storage security and management

[Click here for more details >>](#)

[Refer to page 8 >](#)



Cloud Infrastructure and Services v2

Gain instant access with Video ILT-Stream

Develop or transform your skills for building and managing a robust cloud infrastructure.

Take the Cloud Infrastructure and Services (CIS) v2 course to develop a strong understanding of the concepts and principles of building and managing cloud infrastructure. Gain an understanding of the cloud computing reference model. Validate your ability to make informed decisions on migrating to the cloud with EMCCIS certification.

The course and EMCCIS certification exam topics include:

- Business drivers and characteristics of cloud
- Cloud deployment and service models
- Cloud computing reference model
- Physical, virtual, and control layers of cloud
- Cloud services and service management
- Business continuity solutions for cloud
- Cloud security threats and mechanisms

[Click here for more details >>](#)

[Refer to page 10 >](#)

Take the next step. Get your Associate level EMC Proven Professional certification

Go through the training materials, take the free online practice test

- Make sure to go through training materials, including student guides and notes
- Visit <http://education.EMC.com/exams> to take the free online practice test



Register for and take the certification exam

- Visit <http://www.pearsonvue.com/EMC> and schedule your exam at the Pearson Vue testing center near you

1



Prepare for Certification using Video ILT



2



Pass the exam and become a Certified EMC Proven Professional

Each StarterKit includes one Video Instructor-Led Training (Video ILT) title (\$1,200 value) .



Data Science and Big Data Analytics

Gain instant access with Video ILT-Stream

Apply a hands-on practitioner’s approach to the techniques and tools required for analyzing Big Data.

Take the Data Science and Big Data Analytics course to develop the skills and knowledge to drive strategic business decisions and become an immediate contributor on a data science team. Earn your EMCDSA certification.

The self-paced DSBDA course is designed to enable you to:

- Assist in framing a business challenge as an analytics challenge
- Deploy a structured lifecycle approach to data analytics problems
- Apply appropriate analytic techniques and tools to analyze big data
- Tell a compelling story with the data to drive business action
- Use open source tools such as R, Hadoop, and Postgress
- Prepare for EMC Proven Professional Data Science Associate certification (EMCDSA)

[Click here for more details](#) >>

[Refer to page 18](#) >



Backup Recovery Systems and Architecture

Gain instant access with Video ILT-Stream

Develop or transform your skills in Backup Recovery concepts, terminology, and architecture.

Take the Backup Recovery Systems and Architecture exam if you plan to follow EMC Proven Professional Backup Recovery Specialty tracks as a Technology Architect, Implementation Engineer, or Storage Administrator. Earn your EMCBA certification.

The course and EMCBA certification exam topics include:

- Backup concepts, terminology, and architecture
- Information storage concepts
- Backup client, considerations and challenges impacting client backup environments
- Storage node components, protocols and methods used when writing backup data, and types of backup storage media
- Planning considerations including testing and disaster recovery
- Introduction to products in EMC Backup and Recovery portfolio

[Click here for more details](#) >>

[Refer to page 38](#) >

* Price shown already reflects discount.

For more information and to purchase a StarterKit, visit <http://education.EMC.com/store>.



EMC Proven™ Professional is a leading education and certification program in the IT industry, providing comprehensive coverage of information storage technologies, virtualization, cloud computing, data science/big data analytics, and more.

Being Proven means investing in yourself and formally validating your knowledge, skills, and expertise by the industry’s most comprehensive learning and certification program. Join a community of dedicated professionals, share exclusive benefits, get Proven.

May 2016: To see special offers, search our full course library, and to purchase online: visit <http://education.EMC.com>.

For local pricing and purchase options, contact your EMC account representative.

List of EMC Instructor-Led Training, Online ILT, and Video ILT

● Instructor-Led
 ● Online ILT
 ● Video ILT

| Delivery Mode | Course Title | Duration | Page | Technology |
|--------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|----------|------|------------------------------|
| ● | ● Advanced SAN Implementation | 5 Days | 26 | Consolidation |
| ● | ● Advanced Methods in Data Science and Big Data Analytics | 5 Days | 18 | Big Data |
| ● ● | Atmos Implementation and Management | 2 Days | 33 | Cloud Storage |
| ● ● ● | Avamar Integration and Performance Management | 5 Days | 39 | Backup Recovery |
| ● ● ● | Avamar Management | 3 Days | 39 | Backup Recovery |
| | ● Backup Recovery Systems and Architecture | 5 Days | 38 | Backup |
| ● ● | Brocade: Core Gen 5 SAN Administration (CFA200) | 3 Days | 27 | Consolidation |
| ● ● | Brocade: Advanced Gen 5 SAN Administration (CFP300) | 3 Days | 27 | Consolidation |
| ● ● ● | CAS Management | 3 Days | 45 | Consolidation and Archive |
| ● | ● Cloud and IT as a Service for Business Transformation | 1 Day | 9 | Business Transformation |
| ● | ● Cloud Infrastructure and Services v2 | 5 Days | 10 | Cloud Infrastructure |
| ● | ● Cloud Infrastructure Planning and Design | 5 Days | 11 | Cloud Infrastructure |
| ● | ● Cloud Services Planning and Design | 5 Days | 12 | Cloud Infrastructure |
| | ● Collaborative Analytics with Greenplum Chorus | 1 Day | 62 | Data Computing and Analytics |
| ● ● | Configuring Cisco MDS 9000 Series Switches (DCMDS) | 5 Days | 27 | Consolidation |
| ● ● ● | Data Domain System Administration | 4 Days | 41 | Data Deduplication |
| ● ● ● | Data Protection Advisor Implementation and Management | 3 Days | 43 | Backup |
| | ● ● Data Protection Advisor Custom Reporting | 2 Days | 43 | Backup |
| ● | ● Data Science and Big Data Analytics for Business Transformation | 1 Day | 16 | Business Transformation |
| ● | ● Data Science and Big Data Analytics | 5 Days | 17 | Big Data |
| ● ● ● | Disk Library for Mainframe (DLm) Management | 2 Days | 31 | Backup Recovery |
| ● ● | DCUCI—Data Center Unified Computing Implementation | 5 Days | 27 | Consolidation |
| ● ● ● | ECS for Geo-Scale Object Storage | 3 Days | 48 | Elastic Cloud Storage |
| | ● EMC Storage Configuration Advisor (SCA) Configuration and Management | 3 Days | 50 | Infrastructure Management |
| | ● Enterprise Backup Recovery Design | 5 Days | 15 | Data Center Architect |
| | ● Enterprise Storage Networking Design | 5 Days | 15 | Data Center Architect |
| ● ● ● | Establishing Service Management for ITaaS | 4 Days | 13 | Service Management, ITaaS |
| ● ● ● | Federation Enterprise Hybrid Cloud Management and Orchestration | 5 Days | 14 | Enterprise Hybrid Cloud |
| ● ● ● | Greenplum Architecture, Administration, and Implementation | 5 Days | 62 | Data Computing and Analytics |
| | ● Greenplum Chorus Implementation and Maintenance | 1 Day | 62 | Data Computing and Analytics |
| ● ● ● | Host to Storage SAN Implementation | 5 Days | 26 | Consolidation |
| ● | ● Information Storage and Management v3 | 5 Days | 8 | SAN, NAS, CAS, IP-SAN |
| ● ● ● | Isilon Administration and Management | 5 Days | 19 | Scale-out Storage |
| ● | ● ITIL Foundations Certification Course | 3 Days | 54 | ITIL Best Practice |
| ● ● ● | NetWorker Integration Workshop | 5 Days | 40 | Backup Recovery |
| ● ● ● | NetWorker Installation, Configuration and Administration | 5 Days | 40 | Backup Recovery |
| ● ● ● | Open Source Hadoop Essentials | 4 Days | 62 | Open Source Hadoop |
| ● ● ● | Open Source Hadoop Administration | 4 Days | 62 | Open Source Hadoop |
| ● ● ● | Optimizing Storage Services for Applications with XtremIO | 3 Days | 21 | Flash Storage |
| ● ● | Performing a Release Certification Matrix Upgrade (RCM) for VCE Vblock Systems | 5 Days | 47 | Converged Infrastructure |
| ● | Processing Big Data with Hadoop | 4 Days | 62 | Big Data, Pivotal HD |
| | ● Replication Manager Workshop | 5 Days | 37 | Data Replication |
| ● ● ● | RecoverPoint Management | 3 Days | 35 | Data Replication |
| ● ● ● | SAN Management | 5 Days | 25 | Consolidation |
| | ● SAN Performance Workshop | 5 Days | 26 | Consolidation |
| ● ● ● | Service Assurance (SA) Suite Implementation | 4 Days | 51 | Resource Management |
| | ● Smarts IP Manager Administrator | 2 Days | 52 | Resource Management |
| | ● Smarts MPLS Manager Implementation and Management | 2 Days | 52 | Resource Management |

◆ Instructor-Led,
 ◆ Online ILT
 ◆ Video ILT

| Delivery Mode | Course Title | Duration | Page | Technology |
|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|----------|------|--------------------------|
| | ◆ Smarts Network Configuration Manager (NCM) Implementation | 2 Days | 52 | Resource Management |
| | ◆ Smarts Network Protocol Manager Implementation and Management | 2 Days | 52 | Resource Management |
| | ◆ Smarts Service Assurance Manager Administrator | 3 Days | 52 | Resource Management |
| ◆ ◆ | ◆ SourceOne Email Management Administration for Exchange | 5 Days | 44 | Archiving |
| | ◆ Symmetrix VMAX Business Continuity Management | 5 Days | 28 | Consolidation |
| ◆ ◆ | ◆ Symmetrix VMAX Configuration Management | 5 Days | 28 | Consolidation |
| ◆ ◆ | ◆ Symmetrix VMAX Mainframe Business Continuity Management | 3 Days | 31 | Consolidation |
| ◆ ◆ | ◆ Symmetrix VMAX Performance Workshop | 4 Days | 29 | Consolidation |
| | ◆ Symmetrix VMAX SRDF/Star and Cascaded SRDF - Implementation and Management | 5 Days | 29 | Consolidation |
| ◆ | ◆ Troubleshooting Storage Area Networks | 5 Days | 26 | Consolidation |
| ◆ ◆ | Unity Deep Dive | 2 Days | 20 | Storage |
| | ◆ Unity Learning Center | 12 Hrs | 20 | Storage |
| ◆ ◆ | VCE Administration and Management: Vblock System 500 Series | 3 Days | 47 | Converged Infrastructure |
| ◆ ◆ | VCE Vblock Systems Administration and Management | 5 Days | 47 | Converged Infrastructure |
| ◆ ◆ | VCE Vblock Systems Advanced Administration and Management; Performance and Troubleshooting | 3 Days | 47 | Converged Infrastructure |
| ◆ ◆ | ◆ ViPR Implementation and Management | 5 Days | 48 | Software-defined Storage |
| ◆ ◆ | ◆ ViPR SRM Advanced Reporting | 5 Days | 50 | Resource Management |
| ◆ ◆ | ◆ ViPR SRM Implementation and Management | 3 Days | 49 | Resource Management |
| ◆ ◆ | ◆ ViPR SRM Maintenance | 2 Days | 49 | Resource Management |
| ◆ ◆ | ◆ ViPR SRM for Storage Administrators | 3 Days | 50 | Resource Management |
| ◆ ◆ | ◆ VPLEX Management | 3 Days | 34 | Storage |
| | ◆ VPLEX Troubleshooting | 2 Days | 34 | Storage |
| ◆ ◆ | ◆ VMAX3 Business Continuity Management | 2 Days | 30 | Storage |
| ◆ ◆ | ◆ VMAX3 Configuration Management | 3 Days | 30 | Storage |
| ◆ ◆ | ◆ VMAX3 Performance Workshop | 2 Days | 30 | Storage |
| ◆ ◆ | VMware vRealize Operations Manager: Install, Configure, Manage | 2 Days | 57 | Virtualization |
| ◆ ◆ | VMware Cloud Orchestration and Extensibility | 3 Days | 57 | Virtualization |
| ◆ ◆ | VMware NSX: Install, Configure, Manage | 5 Days | 57 | Virtualization |
| ◆ ◆ | VMware vCenter Site Recovery Manager: Install, Configure, Manage | 2 Days | 57 | Virtualization |
| ◆ ◆ | VMware vCloud Director: Install, Configure, Manage | 3 Days | 57 | Virtualization |
| ◆ ◆ | VMware vRealize Automation: Install, Configure, Manage | 3 Days | 57 | Virtualization |
| ◆ ◆ | VMware Horizon View Install, Configure, Manage | 4 Days | 56 | Virtualization |
| ◆ ◆ | VMware vSphere: Design Workshop | 3 Days | 56 | Virtualization |
| ◆ ◆ | VMware vSphere: Fast Track | 5 Days | 56 | Virtualization |
| ◆ ◆ | VMware vSphere: Install, Configure, Manage | 5 Days | 57 | Virtualization |
| ◆ ◆ | VMware vSphere: Optimize and Scale | 5 Days | 56 | Virtualization |
| ◆ ◆ | VMware vSphere: Troubleshooting | 4 Days | 56 | Virtualization |
| ◆ ◆ | ◆ VNX Block Storage Management | 3 Days | 22 | Unified Storage |
| ◆ ◆ | ◆ VNX File Storage Management | 3 Days | 22 | Unified Storage |
| ◆ ◆ | ◆ VNX Block Storage Performance Workshop | 3 Days | 23 | Unified Storage |
| | ◆ VNX Block Storage Remote Protection with MirrorView | 2 Days | 23 | Unified Storage |
| | ◆ VNX File Storage Remote Protection with Replicator | 2 Days | 23 | Unified Storage |
| ◆ ◆ | ◆ VNX Unified Storage Management | 5 Days | 22 | Unified Storage |
| ◆ ◆ | ◆ VNX Unified Storage Performance Workshop | 5 Days | 23 | Unified Storage |
| | ◆ Watch4net Installation, Implementation, and Management | 4 Days | 53 | Resource Management |
| | ◆ Watch4net Custom Reporting | 3 Days | 53 | Resource Management |
| | ◆ Watch4net Advanced Reporting and Data Analysis | 2 Days | 53 | Resource Management |

For more courses, including CLARiiON, NAS (Celerra), and Storage Management—ControlCenter, please visit <http://education.EMC.com>

ENABLE YOUR TEAM TO MEET TOMORROW'S IT CHALLENGES, TODAY

EMC Education Services offers best-in-class education that improves your readiness and return on your company's EMC investments. Visit our website or call one of our education consultants to learn more.

GET STARTED WITH FREE E-LEARNING COURSES

Isilon Fundamentals, DSSD D5 Overview, VxRail Appliance Technical Overview and more...

View all >> <http://education.EMC.com/FREEelearning>



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Connect and collaborate. Join a community of the most trusted professionals in the industry. Discuss industry challenges, share your ideas and expertise, find answers, or simply connect.



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facebook.com/ProvenProfessional



EMC has ranked in Training magazine's Top 125 for the past six consecutive years—a ranking of organizations that excel at employee training and development.

Industry Awards for EMC Training



The STAR Awards recognize technology companies that display exceptional leadership, innovation, and commitment in developing and implementing best practices.



EMC was #11 on the 2013 list of industry-leading organizations out of more than 200 applicants—a robust, peer-reviewed benchmarking that recognizes organizations delivering significant business results through world-class learning and development.

Contact Us

Online: <http://education.EMC.com/Contact>

Phone: 1-888-EMC-TRNG (1-888-362-8764) (US)

You can find contact details for your regional EMC Education Services office at <http://education.EMC.com/Contact>.

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