

Education Services Training Plan

Prepared for:

Customer Address Point of Contact

Prepared By:

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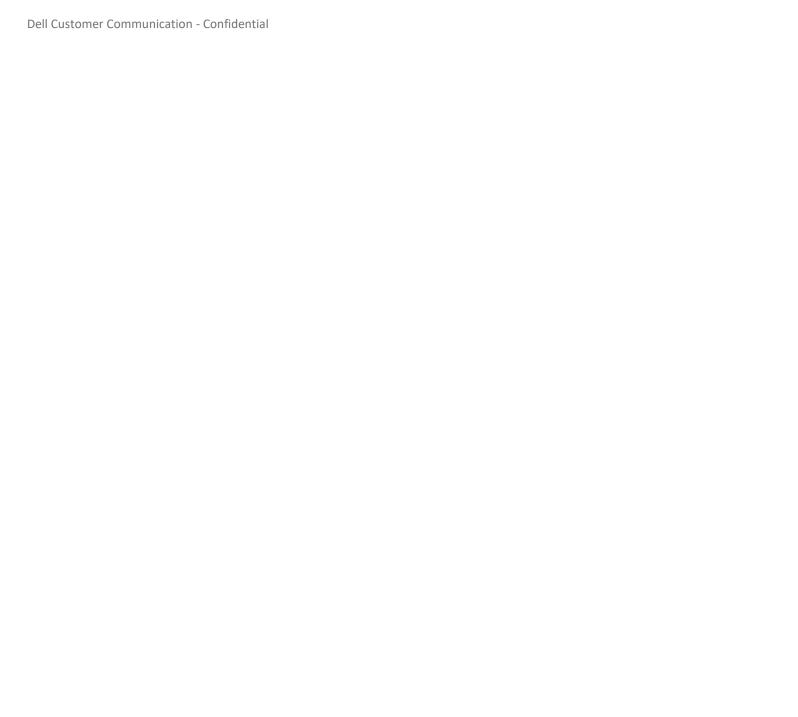
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EXECUTIVE SUMMARY

Customer has made a significant investment in Dell Technologies solutions and internal resources and is currently wishing to investigate skill gaps.

To fully realize value from their investments the organization needs to be properly trained and fully adopt the new technologies. Not all individuals will require extensive training. To determine the proper training plan a learning needs has been conducted. The results of this assessment are found in this report and associated documents which detail individual training recommendations.

The primary objective of the Knowledge Skill Analysis is to understand Customer business goals and the training necessary to achieve these goals. Data was also collected regarding how the participants are organized as well as how they prefer to learn and communicate. Finally, an extensive discussion which outlined the "as is - to be" roles for the teams defined the expected outcome for the training strategy. This data, combined with an understanding of the current and future technologies deployed, allows Dell Technologies to make training recommendations and develop the following:

- A training strategy that includes a curriculum plan of individualized learning paths and the necessary courses to support the plan.
- A training delivery plan that leverages a blended approach while addressing Customer unique culture and goals for learning

With the help of interviews and management calls, Dell Technologies Education Services collected and analyzed, the training requirements from Customer. The collected information about the participants, including:

- Role and technology specialization
- Importance of these technologies for their tasks
- · Training requirements to define the tasks per role and technology

In combination with the training history we gathered a complete overview of the training requirements of each participant as well as the organization's requirements.

Key findings and recommendations are presented in the details that follow.

Participants in our discussions included:

Person	Contact Email Address
AAA	
BBB	
ССС	
DDD	
EEE	
FFF	

TECHNICAL ENVIRONMENT

The following Dell Technologies are included as part of **Customers** information infrastructure and were considered in our training needs evaluation:

VMAX 950FX
PowerMax
Brocade
VNX
Unity
СТА
ECS

BUSINESS OBJECTIVES

Based on consultations with Customer Management as well as the Dell Technologies Account Team, the Dell Technologies Education Services team has identified the following business objectives:

- Help Customer create a formalized Training Plan for everyone on the Storage Team.
- Provide and prioritize training recommendations per individual based on our analysis and requirements defined by the management
- Educate the Storage team to fully support the implemented solutions.
- Cross train individuals to fully support the existing infrastructure

Dell Technologies Summary of Findings and Recommendations

Dell Technologies Education Services, working together with the Dell Technologies account team and the Customer, identified these challenges and training needs.

- Improve and strengthen VMAX3/PowerMax troubleshooting and Performance skills
- Provide the team with management skills about the upcoming Unity system
- Educate the team on the ECS system and increase general skills in Cloud computing

General Recommendations

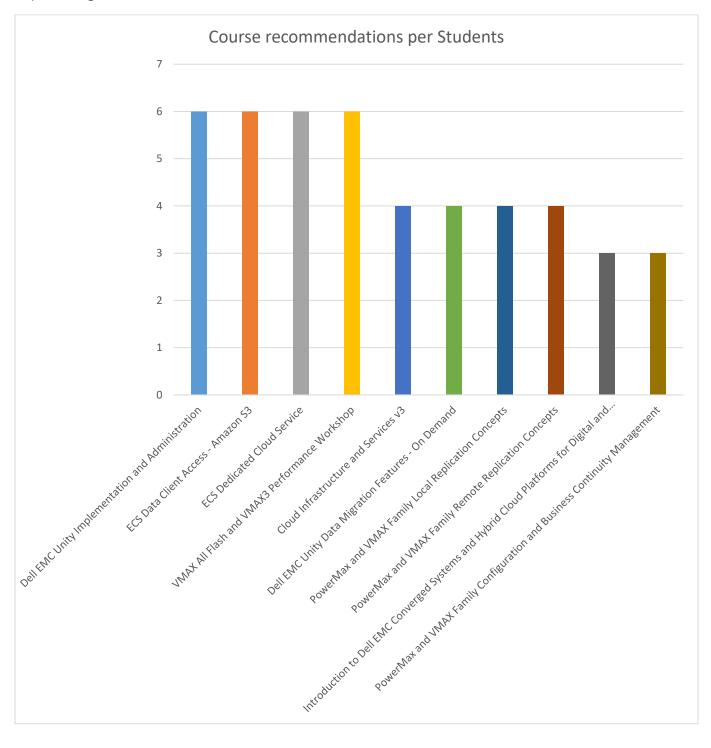
For Brocade in general:

Since the acquisition of Brocade Fibre Channel Products by Broadcom, there is no longer a partner training agreement in place. Currently training is provided by Broadcom.com directly or through 3rd Party training provider such as fast lane. For training options in that area please talk to your Education Services representative from Dell Technologies.

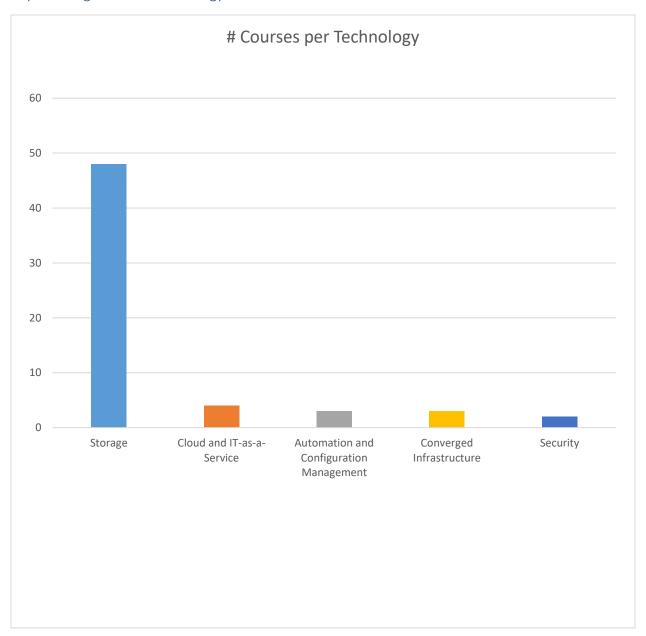
Brocade SAN Fundamentals

Summary of Recommendations

Top Training Needs – Courses



Top Training Needs – Technology



Summary of Course Recommendations

Offering Name	# Students
Dell EMC Unity Implementation and Administration	6
ECS Data Client Access - Amazon S3	6
ECS Dedicated Cloud Service	6
VMAX All Flash and VMAX3 Performance Workshop	6
Cloud Infrastructure and Services v3	4
Dell EMC Unity Data Migration Features - On Demand	4
PowerMax and VMAX Family Local Replication Concepts	4
PowerMax and VMAX Family Remote Replication Concepts	4
Introduction to Dell EMC Converged Systems and Hybrid Cloud Platforms for Digital and IT	3
Transformation	
PowerMax and VMAX Family Configuration and Business Continuity Management	3
10961 Automating Administration with Windows PowerShell	2
Implementing the NIST Cybersecurity Framework	2
Non-Disruptive Migration to PowerMax and VMAX Family	2
ECS 3.0 Management and Monitoring	1
Optimizing Storage Services for Applications with XtremIO and X2	1
ECS Management and Monitoring	1
Isilon Cloud Pools and ECS Integrated Solution	1
PowerMax Concepts and Features	1
Isilon Fundamentals 2017	1
Introduction to Perl Scripting (TTEP100)	1
Cloud Tiering Appliance Fundamentals	1

Management Recommendations

Management needs an understanding of the current datacenter solutions and technologies in use.

For more options, please contact your Dell Technologies Education Services representative.

Course	Duration
Introduction to Dell EMC Converged Systems and Hybrid Cloud Platforms for Digital and IT Transformation	4-8 hours
Converged Infrastructure Compute Technical Overview	1 hour
Converged Infrastructure Network Technical Overview	1 hour
Converged Infrastructure Storage Technical Overview	2 hours
Converged Infrastructure Management Technical Overview	1 hour
Converged Infrastructure Intelligent Physical Infrastructure Technical Overview	1 hour

For the Cloud solutions being planned, the Management team would benefit from the vendor agnostic courses.

Course	Duration
An Introduction to ITaaS (On request only)	½ day
Cloud and IT-as-a-Service for Business Transformation	1 day
Cloud Services Planning and Design	5 days

For more technical details around cloud solutions and business transformation aspects, we recommend a 1-year Video subscription. This enables selection of the most important training courses from the complete e-Learning and Instructor Led Offerings On-Demand.

For more options, please contact your Dell Technologies Education Services representative.

In some areas it's important to get a high-level overview of technologies. Here we recommend start taking our available free fundamental eLearning's.

Free e-Learning

TRAINING RECOMMENDATION MATRIX

Below is a matrix of the recommended curriculum and the student training needs

Course Name	Total Attendees	AAA	BBB	222	ООО	EEE	FFF
Priority	12	2	2	2	2	2	2
Recommended	28	6	3	5	5	6	3
Other	20	2	5	2	6	3	2
Total New Courses	60	10	10	9	13	11	7
Total Courses (Including Completed)	60	10	10	9	13	11	7
10961 Automating Administration with Windows PowerShell	2		R		0		
Cloud Infrastructure and Services v3	4	R	R	R			R
Dell EMC Unity Implementation and Administration	6 1	R	Р	R	Р	R	Р
ECS 3.0 Management and Monitoring						R	
ECS Data Client Access - Amazon S3		0	0	0	0	0	0
ECS Dedicated Cloud Service	6	0	0	0	0	0	0
ECS Management and Monitoring	1			Р			
Implementing the NIST Cybersecurity Framework	2	P				R	
Introduction to Dell EMC Converged Systems and Hybrid Cloud Platforms for Digital and IT Transformation	3	R		R			R
Isilon Cloud Pools and ECS Integrated Solution	1				0		
Optimizing Storage Services for Applications with XtremIO and X2	1					0	
PowerMax and VMAX Family Configuration and Business Continuity Management	3		0	P		P	
VMAX All Flash and VMAX3 Performance Workshop	6	P	P	R	P	P	P
Dell EMC Unity Data Migration Features - On Demand	4		R	R	R		R
PowerMax and VMAX Family Local Replication Concepts	4	R	0		R	R	
PowerMax and VMAX Family Remote Replication Concepts		R	0		R	R	
PowerMax Concepts and Features	1	R					
Isilon Fundamentals 2017	1				0		
Introduction to Perl Scripting (TTEP100)	1				0		
Non-Disruptive Migration to PowerMax and VMAX Family	2				R	R	
Cloud Tiering Appliance Fundamentals	1				R		

COURSE PRIORITIZATIONS

Prioritization is the essential skill necessary to make the best use of your efforts and those of your team. It will provide a sense of order as well as focus and attention on the things that matter most. It's particularly important when time is limited, and demands are seemingly unlimited. With good prioritization (and careful management of reprioritized tasks) we can bring order to chaos, massively reduce stress, and move towards a successful conclusion.

Dell Technologies Education Services makes every effort to provide a meaningful level of prioritization. We consider time constraints, potential benefit and pressure to complete the job. We review the prioritization with both the student and manager several times.

To facilitate this learning plan, Dell Technologies Education Services uses the following prioritization progression.

Priority — An "A Priority" carries the highest degree of immediate impact, benefit and need. We recommend these courses be completed in the next month or two.

Recommended — A "B Priority", while it may have an immediate impact and need, is a secondary "Recommendation". Not everything can be an "A Priority". We recommend these courses be completed in the next quarter or two.

Other Considerations — The "C Priority" is for those classes that don't necessarily have an immediate impact or are less urgent. This category is also used to capture classes that may be of interest to the student but not directly related to their role today. It can also be used to capture classes for future technologies that are on the radar.

In addition to class prioritization and ranking, you may also notice the following in the Recommendation matrix:

Completed — The "C" on the grid indicates that the Student has completed a registered class with Dell Technologies or ordered the Video recording (we cannot report if a Video has been completed).

Experience — An "E" on the grid indicates that it is our perception and recommendation that the student has equivalent, practical experience to the corresponding course content and likely is ready for something more advanced if available.

Registered – A "G" on the grid indicates a course for which the student has already registered.

Р	Priority recommended course
R	Recommended course
0	Other consideration
С	Completed course
G	Registered for course
Ε	Has equivalent experience

INDIVIDUAL FINDINGS AND RECOMMENDATIONS

Each of the individuals in this program was interviewed. These interviews are comprised of questions to determine; the individuals profile, daily tasks and level of knowledge in each of the technologies they use in their day to day tasks. Based on interviews with the individuals at Customer, Dell Technologies Education Services offers the following individual findings below and associated recommendations.

AAA

Name	Email Address	Team	Phone
AAA			
Title	Storage Administrator		
Location			
Responsible for:	Storage and SAN Lifecycle Management including Troubleshooting and Performance Analysis; Storage Design; some OS support.		
Additional Training Request			
Delivery Mode Preference Order	 Instructor Led Classroom Hybrid Classroom On-Demand 		

Findings

AAA is working for 20 years at Customer and for about 4 years in the Storage department. Initially he got employed as Sysadmin and worked for about 16 years in that department where he gathered lots of knowledge on several operating systems with a focus on Unix. Besides the EMC VNX trainings he got trained on NetApp and HDS systems which are also part of the DC infrastructure. To his daily duties belong Storage health checks, Brocade DCX SAN management, Storage deployments, migrations and automation using scripting languages like Perl and Python. For some the tasks on the ECS and VMAX system he needs the support from his colleagues. The ECS is mainly used as a CAS replacement for the previous Centera system and the team encountered some implementation challenges. AAA got some introductory education on AWS cloud but would like to improve his knowledge on Cloud in general. He is also interested to improve his knowledge on the VMAX and ECS system and showed an interest in certifications.

Recommendations

Based on the conversation we had with AAA and the current requirements in his job role, we would recommend starting with the PowerMax and VMAX Family Configuration and Business Continuity Management class. This course provides AAA with the needed knowledge to fully manage and support the implemented VMAX 950FX 2DC solution and work more independent of his colleagues in this area. To furthermore strengthen the knowledge here AAA would benefit from taking the VMAX All Flash and VMAX3 Performance Workshop as a next step. To address Elastic Cloud Storage (ECS) he should attend the recently updated ECS Management and Monitoring course. To prepare him for the upcoming VNX to Unity migration and the future management of the Unity array he will benefit from attending the Unity Implementation and Administration course. This education should be completed by the Dell EMC Unity Data Migration Features - On Demand course. Based on our conversation we also identified a gap in the current Cloud and Datacenter technology changes and would recommend for him the Introduction to Dell EMC Converged Systems and Hybrid Cloud Platforms for Digital and IT Transformation and Cloud Infrastructure and Services v3 courses. Both courses integrate into the Dell Technologies Proven Certification program, if desired.

Official Name	Building at a second	Delivery	D	11	F	Duine
Offering Name PowerMax and VMAX Family Configuration and Business Continuity Management	Prioritization A - Priority	Mode Classroom	Days 5	Level 201	DES- 1121	\$5.000
ECS Management and Monitoring	A - Priority	Classroom	3	201		\$3.000
VMAX All Flash and VMAX3 Performance Workshop	B - Recommended	Classroom	3	301	E20-807	\$3.000
Dell EMC Unity Implementation and Administration	B - Recommended	Classroom	4	201	E20-393	\$4.000
Dell EMC Unity Data Migration Features - On Demand	B - Recommended	On Demand	0,25	201		\$200
Introduction to Dell EMC Converged Systems and Hybrid Cloud Platforms for Digital and IT Transformation	B - Recommended	On Demand	1	101	DEA- 64T1	
Cloud Infrastructure and Services v3	B - Recommended	Classroom	4	101	E10-002	\$2.430
ECS Data Client Access - Amazon S3	C - Other	On Demand	0,38	201		\$300
ECS Dedicated Cloud Service	C - Other	On Demand	0,25	201		\$300

Date	Course Title
01/14/2017	VNX Fundamentals
01/14/2017	VNX Local Protection Suite Fundamentals
01/20/2017	VNX Unified Storage Management
05/27/2019	VNX FAST Suite Fundamentals

BBB

Name	Email Address	Team	Phone	
BBB				
Title	Storage Administrator			
Location				
Responsible for:	Storage Deployment, Storage Lifecycle Management, Storage Design, Migrations			
Additional Training Request	PowerShell			
Delivery Mode Preference Order	 Instructor Led Classroom Hybrid Classroom / Online / On-Dema 	nd		

Findings

BBB is working for 18 years at Customer in the Storage department. During that time, he gathered a lot of experience with several generations of EMC storage, which includes Symmetrix, DMX, VMAX, CLARiiON, Celerra, Centera and VNX systems. Besides the below listed training courses he got trained on Linux RH, HDS, NetApp and some introductory vendor specific cloud courses (AWS, Azure). BBB works a lot project oriented and gets involved in Storage migrations and related tests as well as in the storage planning and design. Because of his experience he gets tasked with performance and troubleshooting issues in the SAN. To his current priorities belong the VNX to Unity migration project. The Unity and VMAX systems are also the areas where sets his priorities for further education. Here he mentioned the new storage provisioning features of the VMAX/PowerMax and Performance as the most interesting development areas here. BBB has some experience with batch scripts but would like to upskill and learn more about PowerShell.

Recommendations

Based on the conversation we had with BBB and the current requirements in his job role, we would recommend for him starting with the VMAX All Flash and VMAX3 Performance Workshop class. This course will strengthen his knowledge and will allow him to perform a structured Performance analysis in the current VMAX 950FX 2DC solution. To prepare him for the upcoming VNX to Unity migration and the future management of the Unity array he will benefit from attending the Unity Implementation and Administration course. Since he is involved in many migration projects he will also benefit from the Dell EMC Unity Data Migration Features - On Demand course. BBB mentioned an interest in PowerShell scripting since many tasks are not performed with the GUI at Customer. Here we recommend starting with the Automating Administration with Windows PowerShell course.

Offering Name	Prioritization	Delivery Mode	Days	Level	Exam	Price
VMAX All Flash and VMAX3 Performance Workshop	A - Priority	Classroom	3	301	E20-807	\$3.000
Dell EMC Unity Implementation and Administration	A - Priority	Classroom	4	201	E20-393	\$4.000
Cloud Infrastructure and Services v3	B - Recommended	Classroom	4	101	E10-002	\$2.430
10961 Automating Administration with Windows PowerShell	B - Recommended	Classroom	5	301		\$2.975
Dell EMC Unity Data Migration Features - On Demand	B - Recommended	On Demand	0,25	201		\$200
ECS Data Client Access - Amazon S3	C - Other	On Demand	0,38	201		\$300
ECS Dedicated Cloud Service	C - Other	On Demand	0,25	201		\$300

Offering Name	Prioritization	Delivery Mode	Dave	Level	Evam	Price
PowerMax and VMAX Family	FITOTICIZACION	Delivery Mode	Days	Level		Price
Configuration and Business Continuity Management	C - Other	On-Demand	5	201	DES- 1121	\$3.000
PowerMax and VMAX Family Local Replication Concepts	C - Other	On Demand	0,25	201		\$200
PowerMax and VMAX Family Remote Replication Concepts	C - Other	On Demand	0,25	201		\$200

Date	Course Title
03/16/2012	Symmetrix VMAX Configuration Management
03.06.2012	Symmetrix VMAX Series Differences - Online ILT
02/14/2014	Brocade: Core Gen 5 SAN Administration (CFA200)
10.07.2015	VMAX All Flash and VMAX3 Configuration Management
12.02.2016	VNX Unified Storage Management
11.04.2016	ECS Management and Monitoring

CCC

Name	Email Address	Team	Phone		
CCC					
Title	Storage Administrator				
Location					
Responsible for:	Storage Deployments, SAN Management, IT Security Infrastructure, Project Management				
Additional Training Request	ISO 27000, IT Infrastructure Security				
Delivery Mode Preference Order	 Instructor Led Classroom Online/Hybrid Classroom On-Demand 				

Findings

CCC is working for about 5 ½ year at Customer in the storage department. Before that he gathered experience as Network administrator and working experience with EMC storage systems like the DMX and first VMAX at his previous employer Peugeot. Here learned the basics of performance analysis and worked with ECC. CCC got additionally trained on VNC, NetApp and PMI project management. Project Management is besides his duties managing the Storage and SAN infrastructure, a secondary path where he would like to set a bigger focus in the future. He is also the dedicated IT infrastructure security lead and would like to improve his skills in that area. CCC is aware of the basic Cloud concepts but would be interested to learn more about the security side here. He recently attended a basic Azure and AWS training, where the level was described as introductory. The last storage training he attended was the "Test drive" that included a 2-day overview of the new features and functions of the PowerMax. CCC appreciated the training but would like to get more hands-on experience on the system. He agreed that On-Demand Labs would be an option to deepen the skills here.

Recommendations

Based on the conversation we had with CCC and the requirements in his current role, we recommend starting with the VMAX All Flash and VMAX3 Performance Workshop class. This course will improve his skills and allow him to apply best practices in a structured performance analysis. To address his needs and get a deeper knowledge for his role as security lead we recommend him to attend the Implementing the NIST Cybersecurity Framework (please refer to Notes at the end of this section). To broaden his knowledge around Cloud computing concepts and security and HCI we recommend him the two associate level courses Introduction to Dell EMC Converged Systems and Hybrid Cloud Platforms for Digital and IT Transformation and Cloud Infrastructure and Services v3. To address Unity as the replacement of VNX CCC will benefit from the 4-day Dell EMC Unity Implementation and Administration. To review the new concepts and features about the PowerMax storage he should take the PowerMax Concepts and Features, PowerMax and VMAX Family Local Replication Concepts, PowerMax and VMAX Family Remote Replication Concepts On-Demand courses. This allows him to concentrate on the important concepts for his job, on-demand and whenever time allows.

Offering Name	Prioritization	Delivery Mode	Days	Level	Exam	Price
VMAX All Flash and VMAX3 Performance Workshop	A - Priority	Classroom	3	301	E20-807	\$3.000
Implementing the NIST Cybersecurity Framework	A - Priority	On Demand	0,75	201	DES- 9131	\$600
Introduction to Dell EMC Converged Systems and Hybrid Cloud Platforms for Digital and IT Transformation	B - Recommended	On Demand	1	101	DEA- 64T1	

Offering Name	Prioritization	Delivery Mode	Days	Level	Exam	Price
Cloud Infrastructure and Services v3	B - Recommended	Classroom	4	101	E10-002	\$2.430
Dell EMC Unity Implementation and Administration	B - Recommended	Classroom	4	201	E20-393	\$4.000
PowerMax Concepts and Features	B - Recommended	On Demand	0,13	201		\$100
PowerMax and VMAX Family Local Replication Concepts	B - Recommended	On Demand	0,25	201		\$200
PowerMax and VMAX Family Remote Replication Concepts	B - Recommended	On Demand	0,25	201		\$200
ECS Data Client Access - Amazon S3	C - Other	On Demand	0,38	201		\$300
ECS Dedicated Cloud Service	C - Other	On Demand	0,25	201		\$300

Date	Course Title
02/14/2014	Brocade: Core Gen 5 SAN Administration (CFA200)
12.12.2014	Symmetrix VMAX Configuration Management
03/18/2015	VMAX All Flash and VMAX3 Configuration Management
09/29/2016	ECS Management and Monitoring
01/20/2017	VNX Unified Storage Management

Note:

CCC sent us a link to a security course that he got recommended from a colleague.

https://www.cirosec.de/en/trainings/crash-course-it-and-information-security

Regarding the training course mentioned, at a glance, this looks like a broader based course that addresses generic cybersecurity topics. Our NIST courses are focused on the framework specifically. The framework is made up of 5 high level functions (Identify, Protect, Detect, Respond and Recover) and would be an excellent course to take in addition to the course below. The NIST course provides information for students to evaluate their environment and understand where their biggest exposures are. This allows them to make the most impactful changes based on available resources so actually the courses would complement each other very nicely.

There are informative references show how NIST corresponds to ISO27001, but if are under tight compliance regulations that adopting NIST might expose to some noncompliance issues.

DDD

Name	Email Address	Team	Phone	
DDD				
Title	Storage Administrator			
Location				
Responsible for:	Storage Lifecycle Management, Scripting & Automation, Test, Migrations, Storage Architecture and Design			
Additional Training Request				
Delivery Mode Preference Order	 Instructor Led Classroo Online/Hybrid Classroo On-Demand 			

Findings

DDD is since 2001 at Customer and since about 5-6 years in his current role. Before that he worked in the CSM group and was responsible for code release management and packaging of code from development to production; and worked with tools/platforms like GitHub. Today Bernhard is responsible for full Lifecycle management of the implemented Storage systems including, Design, Test and support. In his team he is the subject matter expert (SME) for the scripting and automation of repeating tasks. For the scripts he is using Perl and shell scripts but also knows Python., Java (HTML, XML). Now he is involved in a larger and critical Migration from XtremIO to PowerMax where the team uses a host-based migration from Veritas. DDD also evaluated the usage of (ViPR) SRM against other monitoring software tools and the team currently prefers a simpler solution from Stor2rdd. Based on his feedback he is comfortable and up to date with changes occurred in PowerMax and wouldn't need additional training here, where he has no background on the Unity system that is the current candidate for the VNX migration (coming soon). DDD and the team have gotten two 1-day workshops about Cloud computing specific to AWS and Azure, as well as an introduction to VxRail. He has not taken training on Backup or VMware technologies as this is managed by different groups.

He is not interested in certifications.

Recommendations

Based on the conversation we had with DDD and the current requirements in his job role, we would recommend starting with the VMAX All Flash and VMAX3 Performance Workshop. This should be followed by the Dell EMC Unity Implementation and Administration course. The VNX will be migrated to the Unity system the Dell EMC Unity Data Migration Features course will help him to better support this initiative. This shorter On-Demand course can be consumed at the time needed. To broaden his knowledge around Cloud computing concepts and HCI we recommend him the two associate level courses Introduction to Dell EMC Converged Systems and Hybrid Cloud Platforms for Digital and IT Transformation and Cloud Infrastructure and Services v3.

Offering Name	Prioritization	Delivery Mode	Days	Level	Exam	Price
VMAX All Flash and VMAX3 Performance Workshop	A - Priority	Classroom	3	301	E20-807	\$3.000
Dell EMC Unity Implementation and Administration	A - Priority	Classroom	4	201	E20-393	\$4.000
Dell EMC Unity Data Migration Features - On Demand	B - Recommended	On Demand	0,25	201		\$200
Introduction to Dell EMC Converged Systems and Hybrid Cloud Platforms for Digital and IT Transformation	B - Recommended	On Demand	1	101	DEA- 64T1	

Offering Name	Prioritization	Delivery Mode	Days	Level	Exam	Price
Cloud Infrastructure and Services v3	B - Recommended	Classroom	4	101	E10-002	\$2.430
ECS Data Client Access - Amazon S3	C - Other	On Demand	0,38	201		\$300
ECS Dedicated Cloud Service	C - Other	On Demand	0,25	201		\$300

Date	Course Title
17.02.2014	Symmetrix VMAX Configuration Management
02.12.2014	Brocade: Core Gen 5 SAN Administration (CFA200)
16.03.2015	VMAX All Flash and VMAX3 Configuration Management
17.10.2016	ECS Management and Monitoring
09.12.2016	VNX File Storage Management
07.04.2018	SRM 4.x Fundamentals - On-Demand Course
07.05.2018	SRM 4.x Report Fundamentals - On-Demand Course

EEE

Name	Email Address	Team	Phone
EEE			
Title	Storage Administrator		
Location			
Responsible for:	Storage Lifecycle Management,	Migrations, Storage Architecture and Design	, Test
Additional Training Request	Isilon Fundamentals		
Delivery Mode Preference Order	 Instructor Led Classro Online/Hybrid Classro On-Demand 		

Findings

EEE is working for 19 years at Customer in the Storage department. During that time, she worked with all generations of the Symmetrix, DMX and VMAX system and got formally educated here. In additional to that she is responsible to manage the Brocade SAN and takes care of duties on the ECS, VNX and storage systems from HDS and NetApp. As part of her job she gets tasked with Storage management, capacity monitoring, zoning, troubleshooting and performance analysis. Also, some Storage Design belongs to it. She mentioned that she closes her knowledge gap by the support of the two Dell Technology residencies. EEE leaves the scripting up to her colleague but wouldn't mind learning more about scripting herself. EEE and her team have gotten two 1-day workshops about Cloud computing specific to AWS and Azure, as well as an introduction to VxRail. She has not taken training on Backup or VMware technologies but would see a benefit for VMware to better understand her colleagues in cross-functional tasks. EEE has a focus on block storage and would like to improve her skills on VNX File storage or Unity if this is the future technology. She also heard about the Isilon systems from colleagues and would like to understand what the system is about.

Recommendations

Based on the conversation we had with EEE and the current requirements in her job role, we would recommend her taking the VMAX All Flash and VMAX3 Performance Workshop. This should be followed by the Dell EMC Unity Implementation and Administration course. The VNX will be migrated to the Unity system the Dell EMC Unity Data Migration Features course will help her to better support this initiative. To review the new concepts and features about the PowerMax storage she should take the PowerMax Concepts and Features, PowerMax and VMAX Family Local Replication Concepts, PowerMax and VMAX Family Remote Replication Concepts On-Demand courses. This allows her to concentrate on the important concepts for her job and access the modules whenever time allows. In addition, Benedict showed an interest in the CTA tool and here we recommend the Cloud Tiering Appliance Fundamentals course.

Offering Name	Prioritization	Delivery Mode	Days	Level	Exam	Price
VMAX All Flash and VMAX3 Performance Workshop	A - Priority	Classroom	3	301	E20-807	\$3.000
Dell EMC Unity Implementation and Administration	A - Priority	Classroom	4	201	E20-393	\$4.000
PowerMax and VMAX Family Local Replication Concepts	B - Recommended	On Demand	0,25	201		\$200
PowerMax and VMAX Family Remote Replication Concepts	B - Recommended	On Demand	0,25	201		\$200
Non-Disruptive Migration to PowerMax and VMAX Family	B - Recommended	On Demand	0,25	201		\$225
Dell EMC Unity Data Migration Features - On Demand	B - Recommended	On Demand	0,25	201		\$200

Offering Name	Prioritization	Delivery Mode	Days	Level	Exam	Price
Cloud Tiering Appliance Fundamentals	B - Recommended	On Demand	0,13	101		
Isilon Fundamentals 2017	C - Other	On Demand	0,13	101		
Isilon Cloud Pools and ECS Integrated Solution	C - Other	On Demand	0,13	201		\$300
ECS Data Client Access - Amazon S3	C - Other	On Demand	0,38	201		\$300
ECS Dedicated Cloud Service	C - Other	On Demand	0,25	201		\$300
Introduction to Perl Scripting (TTEP100)	C - Other	Virtual Classroom	3	201		\$1.995
10961 Automating Administration with Windows PowerShell	C - Other	Virtual Classroom	5	301		\$2.975

Date	Course Title
	Connectrix, B-Series, MDS, Control Center, NAS, PowerPath self-study
	CLARiiON, SAN, SRM, PowerPath, Replication Manager self-study
14.02.2014	Brocade: Core Gen 5 SAN Administration (CFA200)
18.03.2015	VMAX All Flash and VMAX3 Configuration Management
10.05.2016	VNX File Storage Management
23.11.2016	ECS Management and Monitoring

FFF

Name	Email Address	Team	Phone		
FFF					
Title	Storage Administrator				
Location					
Responsible for:	Storage Lifecycle Management, SAN planning and technology refreshes				
Additional Training Request					
Delivery Mode Preference Order	 Instructor Led Classroom Online/Hybrid Classroom On-Demand 				

Findings

FFF is working for 18 years at Customer and for 2 years in his current job as Storage Administrator. Before that, he gathered experience in RH Linux and Sun Solaris as System Engineer and worked for 15 years as Backup Administrator. To his duties belong configuration, implementation, performance & troubleshooting as well as planning and design. FFF has taken some formal training on VMAX3, VNX and ECS and Brocade some time ago. He got educated on Hitachi Storage and visited a 5-day Amazon Cloud Training. VMware is currently managed by a different group but could be interesting for him once the company goes into the cloud. FFF is currently busy with a SAN tech refresh and would like to learn more about the new PowerMax system after the summer. So far, he didn't have the chance to get any hands-on experience here. FFF has a focus on SAN management and takes care of the Brocade DCX-6 directors. This also requires planning and infrastructure security skills. However,

SAN reporting is done by the residency team from Dell Technologies and access to SRM is not a requirement for him. His knowledge on the ECS is outdated and he would need to use documentation to perform any request by himself. FFF has not worked with the VNX but would be interested to learn more about the future Unity solution. He is skilled to automate certain Storage tasks using Perl or Korn Shell scripts. FFF is not interested in certifications and prefers Classroom type training in an environment where he can't be disturbed.

Recommendations

Based on the conversation we had with FFF and the requirements in his current role, we recommend starting with the **PowerMax and VMAX Family Configuration and Business Continuity Management** course. This learning should be complemented by the below listed shorter PowerMax On-Demand courses. The PowerMax Instructor Led course will provide him with the chance to refresh his current knowledge in the VMAX area and learn the new administrative tasks on the PowerMax system, including guided hands-on lab exercises. The **VMAX All Flash and VMAX3 Performance Workshop** should be followed and provide him with knowledge to perform a structured performance analysis in his working area. To address the Unity Array, we recommend attending the **Dell EMC Unity Implementation and Administration workshop**. The ECS Management and Monitoring On-Demand course allows him to refresh his knowledge and to concentrate on the topics that are important for him, based on his own time. Additionally, to the storage technology courses we see a benefit for him to strengthen his knowledge in Infrastructure security by taking the **Implementing the NIST Cybersecurity Framework** On-Demand course.

Offering Name	Prioritization	Delivery Mode	Days	Level	Exam	Price
PowerMax and VMAX Family Configuration and Business Continuity Management	A - Priority	Classroom	5	201	DES-1121	\$5.000
VMAX All Flash and VMAX3 Performance Workshop	A - Priority	Classroom	3	301	E20-807	\$3.000
Dell EMC Unity Implementation and Administration	B - Recommended	Classroom	4	201	E20-393	\$4.000
PowerMax and VMAX Family Local Replication Concepts	B - Recommended	On Demand	0,25	201		\$200

Offering Name	Prioritization	Delivery Mode	Days	Level	Exam	Price
PowerMax and VMAX Family Remote Replication Concepts	B - Recommended	On Demand	0,25	201		\$200
Non-Disruptive Migration to PowerMax and VMAX Family	B - Recommended	On Demand	0,25	201		\$225
ECS 3.0 Management and Monitoring	B - Recommended	On Demand	3	201		\$1.800
Implementing the NIST Cybersecurity Framework	B - Recommended	On Demand	0,75	201	DES-9131	\$600
ECS Data Client Access - Amazon S3	C - Other	On Demand	0,38	201		\$300
ECS Dedicated Cloud Service	C - Other	On Demand	0,25	201		\$300
Optimizing Storage Services for Applications with XtremIO and X2	C - Other	On Demand	3	201		\$1.800

Date	Course Title
06/15/2016	VMAX All Flash and VMAX3 Configuration Management
06/17/2016	VMAX All Flash and VMAX3 Business Continuity Management
09/14/2016	VNX File Storage Management
10/19/2016	ECS Management and Monitoring
4/2018	SRM 4.x Fundamentals - On-Demand Course

SRM 4.x Training Options (Generic)

Course	Course Code	Length
SRM 4.x Fundamentals - On-Demand Course	MR-1WP-SRM4FUN	1 Hour
SRM 4.x Report Fundamentals - On-Demand Course	MR-1WP-SRM4REPFUN	1 Hour

Course	Course Code	Length
SRM 4.x Implementation and Management - Classroom	MR-1CP-SRM4IM	24 Hours
SRM 4.x Implementation and Management - On-Demand Course	MR-1TP-SRM4IM-1704	24 Hours
SRM 4.x Implementation and Management - Virtual Classroom	MR-1LP-SRM4IM	24 Hours
SRM 4.x Maintenance - Classroom	MR-1CP-SRM4MAINT	16 Hours
SRM 4.x Maintenance - On-Demand Course	MR-1TP-SRM4MAINT-1704	8 Hours
SRM 4.x Maintenance - Virtual Classroom	MR-1LP-SRM4MAINT	16 Hours
SRM 4.x for Storage Administrators - Classroom	MR-1CP-SRM4ADM	24 Hours
SRM 4.x for Storage Administrators - On-Demand Course	MR-1TP-SRM4ADM-1612	5,5 Hours
SRM 4.x for Storage Administrators - Virtual Classroom	MR-1LP-SRM4ADM	24 Hours
SRM 4.x Reporting - Classroom	MR-1CP-SRM4REP	24 Hours
SRM 4.x Reporting - On-Demand Course	MR-1TP-SRM4REP-1703	10,5 Hours
SRM 4.x Reporting - Virtual Classroom	MR-1LP-SRM4REP	24 Hours

Course	Course Code	Length
SRM 4.x Complex Expansion - On-Demand Course	MR-1WP-SRM4COMEXP	1 Hour
SRM 4.x Data Enrichment - On-Demand Course	MR-1WP-SRM4DATAEN	1 Hour
SRM 4.x Extracting Data - On-Demand Course	MR-1WP-SRM4EXTDAT	1 Hour
SRM 4.x Reporting Features Revisited - On-Demand Course	MR-1WP-SRM4ADREPF	1 Hour

Course	Course Code	Length
SRM 4.x Concepts: Alert Reports - On-Demand Course	ES131STG00216	15 Minutes
SRM 4.x Concepts: Graph Reports - On-Demand Course	ES131STG00214	15 Minutes
SRM 4.x Concepts - On-Demand Course	ES131STG00210	1 Hour
SRM 4.x Concepts: Portal Navigation - On-Demand Course	ES131STG00211	30 Minutes
SRM 4.x Concepts: Report Features and User Customizations - On- Demand Course	ES131STG00218	15 Minutes
SRM 4.x Concepts: Report Types - On-Demand Course	ES131STG00212	15 Minutes
SRM 4.x Concepts: Table Reports - On-Demand Course	ES131STG00213	20 Minutes

INVESTMENT RECOMMENDATION

Purchase Option Summary		
	# Courses	Price
Option 1 (6 students)	60	\$87.315
Option 2 (6 students)	40	\$65.485
Option 3 (6 students)	12	\$40.600

Option 1: Training Credits for Priority, Recommended, and Oth	er Courses		
Number of Students for this option		6	
Total Number of Course Recommendations		60	
Number of Course Recommendations for this Option		60	
Percentage of course coverage		100%	
Courses			
	# Courses	Price	
Priority Courses	12	\$40.600	
Recommended Courses	28	\$32.645	
Other Courses	20	\$14.070	
Subtotal: All Courses	60	\$87.315	
Other Items			
	Quantity	Price	
Dedicated Classes	0	\$0	
Subtotal: Other Items	0	\$0	
Crond Total			
Grand Total \$87.31			

Option 2: Priority and Recommended courses only; subscriptions where more economical, Training			
Credits for the rest			
Number of Students for this option		6	
Total Number of Courses		60	
Number of Courses Covered in this Option		40	
Percentage of course coverage:		67%	
	<u>'</u>		
Courses			
Subscription Candidates	# Courses	Price	
3 students are subscription candidates (each allowed up to			
\$27.000 (USD) in training - total \$81.000)			
Number of Priority Courses for Subscription candidates	6	-	
Number of Recommended Courses for subscription candidates	14		
Subtotal: Courses for Subscription Candidate (list price \$45.260)	20	\$37.500	
Remaining Students	# Courses	Price	
3 students are NOT subscription candidates			
Number of Priority Courses for remaining students	6	\$17.600	
Number of Recommended Courses for remaining students	14	\$10.385	
Subtotal: Courses for non-subscription holders	20	\$27.985	
Subtotal: All Courses	40	\$65.485	
		· ·	
Other Items	0	Duite	
Dadiastad Classes	Quantity	Price	
Dedicated Classes	0	\$0	
		÷0	
Subtotal: Other Items		\$0	
Grand Total		\$65.485	
Grand Total		\$05.465	
Savings compared to Option 1			
Option 1 Price		\$87.315	
		\$14.070	
		\$7.760	
Total Savings compared to Option 1		\$21.830	
Minus cost of "other" courses Minus savings for subscriptions Total Savings compared to Option 1		\$7.7	

# Courses 12 12 Quantity 0	66 60 12 20% Price \$0 \$40.600
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	\$0
	\$40.600
	\$87.315
	\$46.715
	\$0
	\$46.715
	\$65.485
	\$46.715
	\$(
	\$24.885

APPENDIX A: DELL TECHNOLOGY PROVEN PROFESSIONAL CERTIFICATION FRAMEWORK

Dell Technology Proven Professional Certification Benefits

Dell Technology Proven Professional certification yields outstanding



value to individuals-and their companies-as they are recognized as elite storage professionals within the IT industry. Dell Technology Proven Professional-certified storage professionals reported that this credential increased their value to their employers by 23%.

Employee Benefits	Employer Benefits
Increase confidence, build your credibility and productivity	Establish standard for assessing employee skills and capabilities
Move from individual contributor to strategic technology advisor	Secure the skills required to manage your environment
fferentiate yourself in a market clamoring for skilled professionals	
everage exclusive program benefits aimed to make your job easier Elevate morale and loyalty by supporting individual development	

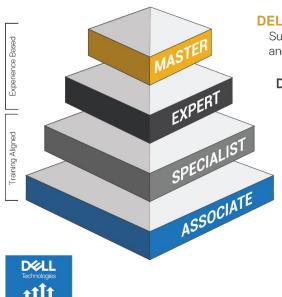
Dell Technology Proven Professional Certification

Dell Technology Proven Professional is a leading certification program in the IT industry. From training-aligned, to experience based, it provides education and certification that spans product, technology and solutions that can be applied in all IT environments.



Become a trusted advisor in the digital age. This widely recognized credential validates that you possess the skills required to lead IT Transformation from core, to cloud, to edge.

DELL TECHNOLOGIES PROVEN PROFESSIONAL CERTIFICATION



DELL TECHNOLOGIES CERTIFIED MASTER

Subject matter expertise with experience in multiple technologies and complex solutions.

DELL TECHNOLOGIES CERTIFIED EXPERT

Advanced skills and experience in one or more technologies.

DELL TECHNOLOGIES CERTIFIED SPECIALIST

Role specific training and baseline skills in a given technology.

DELL TECHNOLOGIES CERTIFIED ASSOCIATE

Fundamentals training and knowledge of a technology.

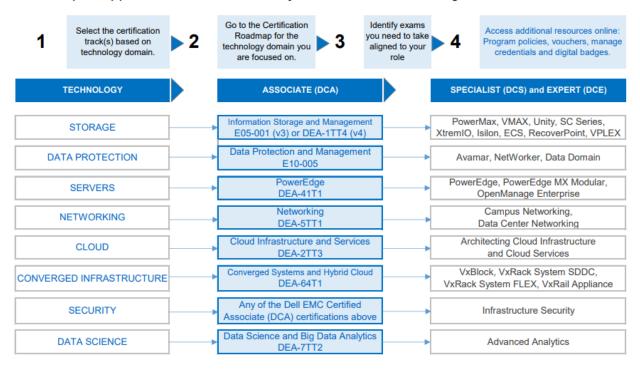
CERTIFICATION TRACKS

Cloud Architect
Data Scientist
Systems Administrator
Implementation Engineer

Technology Architect Platform Engineer Enterprise Architect Dell Technology Proven Professional is the #1 certification program in the information storage and management industry. It offers a role-based series of courses and exams that cover the full range of Dell Technology 's hardware, software, and solutions.

In addition to the three levels of technical learning and certification, Dell Technology Proven Professional also includes "open" courses such as Information Storage and Management and the new Cloud Infrastructure and Services course in the new Cloud certification track.

Use this simple 4-step process to access all the information you need to become a Dell Technologies Proven Professional.



NOTE: The "Associate - Information Storage and Management" certification supports Storage, Data Protection and Cloud Specialist level certifications. This is the most flexible Associate certification if you are pursuing multiple Specialist level certifications acriss these technology domains

View the complete certification framework and exam roadmap »

APPENDIX B: DELL TECHNOLOGY RECOMMENDED TRAINING

Dell Technology Education Services provides technical training that develops the skills and expertise required to optimize your classic, virtual, or software defined data center environment. Award-winning Dell Technology training is designed to be relevant, timely, convenient, and cost effective.

Our training and certification programs help make the most of your infrastructure investments. Dell Technology training is available in a variety of formats including classroom, virtual, online, and on-site – to accommodate your specific requirements.

Most classes can also be delivered as a dedicated onsite at your location or a local Dell Technology office.

Dell Technology Education Delivery Modes

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

- On-Demand (e-Learning or Video ILT Stream)
- Instructor Led Training (ILT)
- On-Site/Custom Engagement
- · On-Demand Lab

Dell Technology Phased Approach

Dell Technology Education Services delivers the skills and knowledge necessary for students to boost their workplace productivity and optimize the information lifecycle management (ILM) infrastructure. Our curriculum is organized within the award-winning Dell Technology Proven Professional training and certification framework, which provides a defined path to storage expertise.

The Dell Technology Proven Professional program helps students identify a curriculum that meets their role and/or technology needs. Student's progress through multiple levels of achievement and earn certification by passing one or more proctored exams designed to ensure the required skills have been attained.

In order to facilitate this learning for Customer, Dell Technology Education utilizes the following three-phase approach.

- Phase I Uses Dell Technology On-Demand modules to provide an educational foundation for the administration staff. This training
 establishing a specific level of comprehension of Dell Technology technologies that enhances Dell Technology mentoring during
 implementation, and augments preparation for Instructor-led training.
- Phase II Consists of classroom training and hands-on lab exercises after the implementation of Dell Technology solutions. This education builds upon On-Demand and mentoring to provide administrators a greater working knowledge of the technologies and the ability to meet the key objective of Phase II; providing increased employee productivity in a shorter period.
- Phase III Focuses on working together to determine the requirements for maintaining current levels of productivity for administrators. The first step of Phase III uses feedback from this educational plan to help define the educational requirements, not only for new and incoming administrators at Customer, but also to assist in establishing continuing education for the current IT Administrators. The objective is to ensure that Customer has the educational tools required to maintain productivity levels and attain their desired TCO/ROI with Dell Technology.

All Dell Technology education activation, courseware, registration, and supporting materials pertinent to your education purchase are available through the Education Portal (https://education.EMC.com), where students and managers can access:

- Assessment tests
- Learning transcripts
- Certification history
- Course catalog and schedules

Develop skills to transform your IT business and data center operations for the digital age.

Dell Technology Education Services offers new transformational certifications that validate the expertise IT professionals need to enable them and their organizations to compete and win in the digital economy.

To learn more about these transformational training and certification offerings, visit https://education.emc.com/content/emc/en-us/home/IT-Transformation.html.

APPENDIX C: DELL TECHNOLOGIES ON-DEMAND LEARNING CENTER

Accelerate your organizational transformation.

Gain on-going access to a vast collection of learning content for you and your entire organization to meet rapidly evolving knowledge and skills development needs.

From Associate-level to Expert, our courses and learning paths will help you gain the knowledge and skills to Modernize, Automate, and Transform your IT organization.



DELL EMC EDUCATION SERVICES HOME

ON-DEMAND LEARNING CENTER

Welcome Learners

To access My Video ILT-Stream Collection, click on the first image below.

















Learn more about Dell Technology Education Services https://education.emc.com