

Avnet StoragePath™ for IBM Reference Guide



		Key focus Strong focus Auxiliary feature Incidental feature													
		Features by Technology													
		Deduplication (dedupe)	Virtualisation	Archiving	Protection & Recovery Inc DR	Storage Tiering	Application Aware / Integration	File Storage	Storage Management	Other Functions	Market Positioning	Business Value	Benefits	How to position	Comments on Positioning
Definitions		<ul style="list-style-type: none"> Reduces storage by eliminating redundant data. Duplicate data is replaced with a pointer to the original data copy. 	<ul style="list-style-type: none"> Consolidation of physical storage from multiple (network) storage devices to a single storage device. Used in a SAN. 	<ul style="list-style-type: none"> Long term records retention and data retrieval. Archiving allows for a reduction in live data management. 	<ul style="list-style-type: none"> Back up and cross site data replication. Disaster Recover (DR) is the process, policies and procedures which prepare for recovery. 	<ul style="list-style-type: none"> Maintaining two or more kinds of storage. Tiering reduces costs because less used/less important data can be stored on cheaper/slower mediums. 	<ul style="list-style-type: none"> Integrates with application based storage management to exploit hardware functionality (e.g. back up and virtual machine provisioning). 	<ul style="list-style-type: none"> Optimised for unstructured data such as documents (vs structured data such as Oracle & SAP DB). File storage reduces server implementation; NAS appears to the OS as a file server in contrast to SAN which appears as a disk. 	<ul style="list-style-type: none"> Refers to storage analytics and resource monitoring. Analytics software usually monitors files, performance and configuration management. 	<ul style="list-style-type: none"> Includes thin provisioning capability as well as data migration. 					
Hardware	DS3500				<ul style="list-style-type: none"> Cross site data replication (synch and asynch) allowing greater DR options retaining performance over long distances. Generally additional licences are needed for FlashCopy and DR. 	<ul style="list-style-type: none"> Supports different speed drives in single enclosure. Supports high performance and low performance drives in the same enclosure. 		<ul style="list-style-type: none"> Not optimised but provides general storage for unstructured data in array. 	<ul style="list-style-type: none"> Basic analytics functionality 		Entry	<ul style="list-style-type: none"> Cost effective storage (max 192 drives). 	<ul style="list-style-type: none"> Easy to implement. User friendly interface. Priced to market. 	<ul style="list-style-type: none"> Good for mixed workloads. Solid entry level disk offering. Easy to use management interface included. 	<ul style="list-style-type: none"> Placed in environments where there is little need for bells and whistles.
	DS5000				<ul style="list-style-type: none"> Cross site data replication (synch and asynch) allowing greater DR options retaining performance over long distances. Generally additional licences are needed for FlashCopy and DR. 	<ul style="list-style-type: none"> Supports different speed drives in single enclosure. Supports high performance and low performance drives in the same enclosure. 		<ul style="list-style-type: none"> Not optimised but provides general storage for unstructured data in array. 	<ul style="list-style-type: none"> Basic analytics functionality 		Mid Market	<ul style="list-style-type: none"> Performance and scalability beyond DS 3500 (max 480 drives). More connectivity options eg FC & iSCSI in same array. Greater performance. 	<ul style="list-style-type: none"> Aids server consolidation. 	<ul style="list-style-type: none"> Good for consolidated mixed workloads. Solid mid market disk offering. Easy to use management interface included. 	<ul style="list-style-type: none"> Placed in environments where there is little need for bells and whistles.
	V7000		<ul style="list-style-type: none"> Inherits code from IBM SVC (San Volume Controller) storage virtualisation solution. 		<ul style="list-style-type: none"> Cross site data replication (synch and asynch) allowing greater DR options retaining performance over long distances. By attaching other disk arrays, V7K provides same DR compatibility. Additional licences are needed for DR but flash copy is included. 	<ul style="list-style-type: none"> Supports high performance and nearline disk drive types. Features Easy Tier with solid state drives for lightning fast data access. 	<ul style="list-style-type: none"> Via Tivoli FlashCopy Manager (which is additional cost). Integration with VMware APIs for cloning systems. 	<ul style="list-style-type: none"> Not optimised but provides general storage for unstructured data in array. 	<ul style="list-style-type: none"> Basic analytics tools included. Integrates with TPC for disk for more sophisticated analytics. Includes Easy Tier for performance management by automatically solving hotspot problems. 	<ul style="list-style-type: none"> V7000 (because of SVC) includes thin provisioning capability as well as data migration. 	Mid Market	<ul style="list-style-type: none"> Simplification of SAN. Management & better disk utilisation. 	<ul style="list-style-type: none"> Easy management of heterogeneous SAN infrastructure. Easy to use with XIV-like GUI. V7000 is SVC functionality with a fibre channel disk array. 	<ul style="list-style-type: none"> Current SAN infrastructure out of control. Simplification of storage management. Disk vendor independence. 	<ul style="list-style-type: none"> Can be deployed in 100% non IBM environments. Can improve manageability of hybrid environments.
	XIV		<ul style="list-style-type: none"> Virtualised grid architecture which services its own capability. It does not virtualise across multiple disk arrays. 		<ul style="list-style-type: none"> Cross site data replication. Synch and asynch allowing greater DR options, retaining performance over long distances. All functionality provided in base operating license (including FlashCopy and DR). 	<ul style="list-style-type: none"> Supersedes the need for tiering by using completely different architecture. Provides low cost for all tiers by yielding performance from low cost drives. 	<ul style="list-style-type: none"> Integration with VMware APIs for cloning systems. When provisioning new VMs, processing is done within the storage box not the server, saving server cycles and increasing performance. 		<ul style="list-style-type: none"> Architecture delivers reduced storage management needs. Performance tuning, data placement, data migration are not issues as XIV is completely different to traditional architectures. 	<ul style="list-style-type: none"> XIV includes thin provisioning capability as well as data migration. Quality of service for ensuring the right applications get the right performance. 	Mid-Enterprise	<ul style="list-style-type: none"> Simplifies Storage. Grid allows for auto management of data. Scales without decreasing performance. 	<ul style="list-style-type: none"> Ease of use, automatic performance balancing, highly scalable, license per box, not capacity. 	<ul style="list-style-type: none"> Reduce complexity of storage management. Grid architecture differentiates XIV from competitors. Tier one, self managing system; from load balancing and tuning, to removing the need to define RAID arrays. 	<ul style="list-style-type: none"> General purpose disk subsystem. Target customers who require DR with zero performance degradation, have strict back up windows, or application developers (e.g. SQL, SAP etc). Good for data warehousing and business intelligence. Entry point 27TB.
	N series	<ul style="list-style-type: none"> Provides primary & secondary dedupe on both production and archive data. 	<ul style="list-style-type: none"> N series Gateway enables leverage of legacy storage in heterogeneous environments. Multiprotocol support. 	<ul style="list-style-type: none"> Single archival repository with standard management policies across all storage. 	<ul style="list-style-type: none"> Offers space efficient, non-disruptive, near instant back storage provisioning and rapid restore. 	<ul style="list-style-type: none"> Supports FC, ATA and SAS. Also supports in box mix drive types, allowing tiering of virtual machines by using one architecture. 	<ul style="list-style-type: none"> N series software automates and simplifies the complex, manual and time consuming processes associated with the backup, restore, recovery and cloning of VMware, Exchange, Oracle and other applications. 	<ul style="list-style-type: none"> NetApp's OS is designed from the ground up to manage unstructured data, such as documents. This is the fundamental purpose of N series. 	<ul style="list-style-type: none"> Single OS means single management tool. Comprehensive file copying and manipulation tools are either included or can be added. 	<ul style="list-style-type: none"> Ability to assign or allocate storage for actual use (in other words, allowing storage on demand). 	Mid-Enterprise	<ul style="list-style-type: none"> Can connect multiple different types of server platforms across wide range of protocols. Reduce management resources without the need of OS. 	<ul style="list-style-type: none"> Swiss army knife of storage. Flexibility across protocols. NFS, CIFS, FCP, iSCSI. Optimised for file serving. 	<ul style="list-style-type: none"> Requirement for NAS or where a wide range of features are required. Perfect for sophisticated data copying requirements. Strong linkage with common applications (eg, Exchange). 	<ul style="list-style-type: none"> Requires solid understanding of the technology to deliver pitch. Mixing protocols has performance considerations.
	Tape		<ul style="list-style-type: none"> Multiple virtualisation solutions for different tape environments available. e.g TS7650 virtual tape library. 	<ul style="list-style-type: none"> Tape is the most cost effective medium for long term archives. 	<ul style="list-style-type: none"> Tape is still the most cost effective medium for long term back ups (which is by far the biggest use of tape). Portability for offsite data. 	<ul style="list-style-type: none"> Within a tiering strategy, tape provides the lowest cost tier. 		<ul style="list-style-type: none"> LTO 5 introduced a tape file system for drag and drop file management. 		<ul style="list-style-type: none"> Data migration is a function of the back up software, not the product. 	Mid - Enterprise	<ul style="list-style-type: none"> Low cost back up/archiving. Requires no power to keep data stored. 	<ul style="list-style-type: none"> Cheap media, portable for offsite storage (used as part of DR). Cost effective back up solution. 	<ul style="list-style-type: none"> Easier to store tape off site than it is to set up a disk mirror. Cost effective back up solution. 	<ul style="list-style-type: none"> Best suited for streaming large volumes of data (because data is sequentially accessed). The industry (disk vendors only) claim tape is dead. However, IBM is number one in tape for the last 8 years, and it continues to grow.
ProtecTIER	<ul style="list-style-type: none"> ProtecTIER tape emulation provides industry leading data deduplication for backups. 		<ul style="list-style-type: none"> Emulates tape. 	<ul style="list-style-type: none"> Inter-site replication over low bandwidth links. 	<ul style="list-style-type: none"> Within a tiering strategy, close to tape in terms of cost. 				<ul style="list-style-type: none"> Data migration is a function of the back up software, not the product. 	Mid - Enterprise	<ul style="list-style-type: none"> Faster more efficient backup and restore with dedupe to reduce costs. Vastly reduced bandwidth for electronic vaulting. 	<ul style="list-style-type: none"> Reduced communication cost with electronic vaulting. Improve backup/restore performance. Main differentiators are data integrity and performance. 	<ul style="list-style-type: none"> Comes in range of sizes, entry point is 2u appliance starting at approximately AUD \$30k. Recommended for larger enterprise customers who require highly scalable solution. Recommended on existing SVC install to boost performance. 	<ul style="list-style-type: none"> Target customers with minimum 5TB - 10TB online disk to be backed up. 	
Software	SVC		<ul style="list-style-type: none"> Consolidates heterogeneous storage into single storage pools, providing common functionality and single management interface. 		<ul style="list-style-type: none"> Cross site data replication (synch and asynch) allowing greater DR options retaining performance over long distances. By attaching other disk arrays, SVC allows same DR capability. Additional licences are needed for DR and FlashCopy. 	<ul style="list-style-type: none"> Supports high performance and nearline disk drive types. Features Easy Tier with solid state drives for lightning fast data access. 	<ul style="list-style-type: none"> Via Tivoli FlashCopy Manager (which is additional cost). Integration with VMware APIs for cloning systems. 	<ul style="list-style-type: none"> Basic analytics tools included. Integrates with TPC for disk for more sophisticated analytics. Includes Easy Tier for performance management by automatically solving hotspot problems. 	<ul style="list-style-type: none"> Includes thin provisioning capability as well as data migration. 	Enterprise	<ul style="list-style-type: none"> Simplification of SAN management & better disk utilisation, but more scalable than V7000 for enterprise environments. 	<ul style="list-style-type: none"> SVC appliance is more scalable (up to 8 nodes on a cluster as opposed to 4 nodes on a cluster for V7000). Features 3 way replication. 	<ul style="list-style-type: none"> Recommended for larger enterprise customers who require highly scalable solution. Recommended on existing SVC install to boost performance. 	<ul style="list-style-type: none"> Only works with fibre disks, not appropriate for iSCSI or NAS disks. 	
	TSM	<ul style="list-style-type: none"> Server side dedupe is a post backup process that checks for duplicate blocks at the TSM server. Client side dedupe checks for duplicate blocks and only sends non-duplicated blocks for backup. 		<ul style="list-style-type: none"> Automatically copies data into an archive pool for an extended period 	<ul style="list-style-type: none"> Electronic vaulting is available which sends the backed up data to a DR location and manages it. 	<ul style="list-style-type: none"> Storage pool tiering with policy based automatic data migration through the tiers. 	<ul style="list-style-type: none"> Uses VMware backup API's for efficient multi VM backups. 	<ul style="list-style-type: none"> User customised policies ensures data is protected according to business requirements. Also ensures correct storage tiers are being used depending on the importance of individual file. 	<ul style="list-style-type: none"> TSM has data migration capabilities (e.g. Hierarchical Storage Management (HSM)). Actively determines when the data could appropriately be moved to a lower tier. 	Mid - Enterprise	<ul style="list-style-type: none"> Sophisticated data protection, archiving and long term retention. Intelligent and economic data protection. 	<ul style="list-style-type: none"> Very cost effective on usage of storage resources. Provides a wide range of copy features - backing up to disk or tape. 	<ul style="list-style-type: none"> Award winning backup and archiving software. Effective use of hardware resources to store back ups. Built in data deduplication. 	<ul style="list-style-type: none"> If customer has large number of Servers small amount of data use the new TSM per TB model. Small number of servers large amount of data, the per server core pricing model (PVU). 	
	TPC				<ul style="list-style-type: none"> TPC for Replication manage the mirroring sessions of subsystems devices for automatic site failover. 	<ul style="list-style-type: none"> Identifies candidate files for migration onto a lower tier of storage. 			<ul style="list-style-type: none"> Manages heterogeneous storage infrastructures from a single interface. Provides in-depth file level reporting as well as SAN fabric and subsystem performance reporting. 	Mid - Enterprise	<ul style="list-style-type: none"> Optimisation of storage resources in terms of cost and service. 	<ul style="list-style-type: none"> Storage management tools which analyse data on storage space use and performance. 	<ul style="list-style-type: none"> Relevant in moderately complex or moderately large environments which have storage analytics requirements. 	<ul style="list-style-type: none"> History of installation complexity now not so relevant. 	
	Tivoli FlashCopy Manager				<ul style="list-style-type: none"> Initiates a subsystem flashcopy (snapshot) and manages the flashcopy for efficient restoration. 		<ul style="list-style-type: none"> Talks to applications such as Oracle and prepares for a back up snapshot. 				Mid - Enterprise	<ul style="list-style-type: none"> Back up and retention of data, smart recovery. 	<ul style="list-style-type: none"> Provides fast and simple application consistency when using snaps/flash copies. 	<ul style="list-style-type: none"> If customer has database and wants to reduce RPO. If customer has SAP and wants to have a fast SAP clone capability 	<ul style="list-style-type: none"> Low cost application/business benefits that can help sell the hardware.

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