# > The Changing Face of the Appliance Market

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Industry data from leading analysts clearly indicates that in the past few years the backup and recovery appliance market has grown at a healthy pace.  Often seen as a complement or replacement to traditional software deployments, appliances are undergoing a generational change.  There is a lot more than meets the eye, and it is important to understand the definition of backup appliances.  The traditional taxonomy of data protection appliances – also known as Purpose Built Backup Appliances (PBBAs) – covers two primary categories:

- **Backup Appliances**
- **Deduplication Appliances**

Let's explore this taxonomy and market dynamics.

## Traditional Backup Appliances must evolve

End-users have recognized the many benefits of having a "one stop" solution that bundles software, server processing, storage and networking.  Many benefits can be reaped from this approach such as simplified deployment and operations and simpler, and ideally cost-optimized licensing.

The reality of the market today, however, is that these appliances have essentially been nothing more than retrofitted "bundles," put together in a box with all the components, fine tuned a couple of performance parameters, and more or less successfully productized to fit specific environments. Even certain vendors that sell appliances inherently went through the same process as software and appliance vendors by slapping software on a server with storage and connectivity.  This actually worked beautifully –  the market numbers don't lie.

However, this approach has come at a cost:  scalability in some cases, with performance, usability and functional capability in others.  While your "cost mileage" may vary depending on individual circumstances, it's easy to see how these shortcomings translate into direct and indirect operational efficiency costs.  And some vendors have hit the wall hard by making execution mistakes in technology, positioning and product lineup.  At Arcserve, we believe that we are seeing the end of Phase 1 in the backup appliance market today, one in which the recipes of the past will not suffice to provide end-users with the operational efficiency they require to surmount their current data protection challenges.  A new breed of technology, not just bundles, is needed to meet these requirements.

## Deduplication appliances: a pretty old band aid

A few years ago many organizations, originally in the enterprise space, realized that they just could not make their backup windows with traditional backup architectures. They also struggled with the essential cost of storing a seemingly uncontrollable amount of backup data. Storage costs exploded as back-up schemas imploded. Enter deduplication appliances: let's take your backup data and optimize it through deduplication processes and put it on disk. Let's "compress" your backup volumes and save you money. It worked well and some vendors became very successful, gaining many customers and in some cases, getting acquired.

The deduplication technology in question does not require the user to drastically change their backup software configurations or policies, rather only to change the destination of the backup streams. Deduplication software/ appliances will even emulate your favorite tape formats so that you don't disrupt your backup policies. It's a band aid: minimal disruption to your backup schemas and optimized storage costs. Depending on the technology, deduplication happens on the fly, or as a post process (write it all on disk, then optimize after the fact to make backups go faster). One dirty little secret of backup appliances that do post-processing is that they tend to be "fuzzy" in terms of the actual usable capacity – what is left after reserving space for the post processing phase.
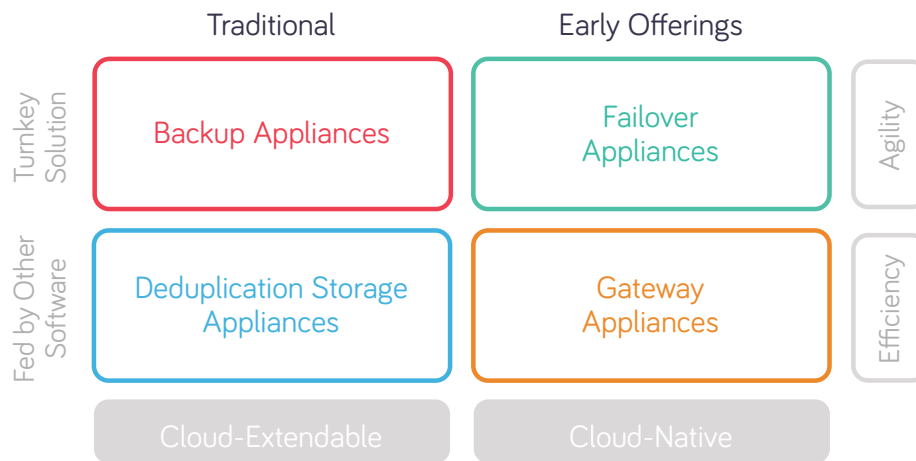
Whether the processing happens in memory on the fly or post backup, this is a technology of the past. Why not de-duplicate data at the source in the first place, so long as you can do it in a way that does not impact the client, and save yourself all of that bandwidth you use to send backup streams to the target?

Why not share all of this de-duplicated intelligence across all of your clients? That is global source-side duplication, and it is where the industry needs to go. This is what many end-users have recognized as the critical technology moving forward. Yet most de-duplication appliances don't do it. They do it the old way.

## New types of data protection appliances are emerging

Analyst firm ESG adds to the traditional Purpose Built Backup Appliance taxonomy with 2 additional emerging categories: failover appliances and gateway appliances. This completes the right side of the larger modern Data Protection Appliance market taxonomy (see image below).

A Failover appliance includes software and hardware that focus on the recovery of applications and data, brings some level of automation/integration to the whole process, and is typically deployed in local and secondary locations to provide a safety net should anything come up at the primary site. This evolution from backup to recovery is fundamental in designing these solutions, and more importantly, we believe this delivers more value to the customers in terms of service level agreements.

| | Traditional | Early Offerings | |
|---|---|---|---|
| **Turnkey Solution** | Backup Appliances | Failover Appliances | Agility |
| **Fed by Other Software** | Deduplication Storage Appliances | Gateway Appliances | Efficiency |
| | Cloud-Extendable | Cloud-Native | |

Source: "Data Protection Appliances are better than PBBAs," Jason Buffington, Enterprise Strategy Group, 2014

Gateway appliances go beyond just providing a connector to a cloud service, although that's a good start! These appliances are designed to work with cloud "destinations" and are natively optimized to do so. Cloud data protection is clearly an area of growth in the market, and while not every use case or organization will find it an acceptable solution, more and more users are turning to the cloud as an option.

Having 2 or more types of appliances to band aid an aging backup infrastructure is just not going to cut it any longer: between the explosion of virtual machines and the accelerating volumes of data, why add more complexity and moving parts?

The next generation data protection appliance is going to be one that does it all, does it well, does it fast and does it affordably. That's what innovation is about in any market, and it acutely applies to the backup and recovery space.

## Arcserve Appliances: Revolution…Not Just Evolution

When we launched Arcserve Unified Data Protection (UDP), we successfully took on the challenge of unifying data protection in one platform, one that combines global source-side deduplication, replication, high availability and ease of use. The use of the term "platform" has a deep meaning for us. We built UDP to be a technology that is inherently deployable in multiple modalities: software, appliance or cloud. The true benefits of actually building code for a next generation appliance that can scale and cover many use cases are obvious: easier deployment and usability, affordability, and performance.

For customers who require a cost-effective, "set and forget" data protection solution, Arcserve UDP 7000 is the first complete data protection appliance with Assured Recovery™ and cloud-native capabilities.

UDP appliances fit the traditional backup appliance category as it is a turnkey solution with the required data protection capabilities in one system.   However, unlike other solutions, it offers more ease of use and deployment and more functional capabilities.   This means faster backups, lower bandwidth utilization, optimized BC/DR, and lower storage utilization while improving your data protection service level agreements.

UDP appliances are by design a deduplication appliance but differ significantly in technology and customer benefits.  UDP appliances are not target deduplication systems which traditionally ingest backup data streams from other backup applications.  Rather, they are a true global source-side deduplication appliance with all the efficiency benefits of performing source-side deduplication vs. target side deduplication.

UDP appliances are failover appliances by design, as they include the native replication and availability capabilities of UDP.  This is particularly true of the "V" appliance models which include capabilities to support 3 in-appliance stand-by virtual machines.

UDP appliances also fit the gateway category through the native capabilities to replicate data to private and public cloud services, MSPs or the upcoming Arcserve recovery as a service option. This is not just an evolution of what a data protection appliance is, but a true generational leap forward, a revolution in how you will be able to deploy data protection in your organization.

For more information on Arcserve UDP, **please visit arcserve.com**

**Backup appliance (BA):** includes BOTH the backup software and storage capacity within the appliance, for a "turnkey solution."

**Storage/deduplication appliance (SA):** does NOT include the backup software.  A storage appliance is specifically built for deduplication or compression of data that some outside backup or archive (data movement) software sends to it.

**Failover appliance (FA):** includes a built-in hypervisor or other means of resuming business services or server operations without first restoring the data.

**Gateway appliance (GA):** provides "local access" to remote/cloud storage only.  It does NOT include backup software technology.  A cloud-gateway's primary function in data protection is to provide cloud-extended storage.

**NOTE:** Any of these appliances may be delivered as physical or virtual devices.