Netpump

Netpump Data: High-Value Use Cases,

Accelerated Data Transfer Use Cases (Leveraging ~12×Speed Boost)

Netpump Data's **11.8× average transfer speed improvement** opens up a range of high-impact use cases across cloud environments. Below we identify key scenarios – spanning intra-cloud, hybrid, and outbound transfers – and prioritize those with the most **meaningful business outcomes** (faster results, cost savings, better SLAs, or new work flows enabled):

1. **Cross-Region and Intra-Azure Acceleration**

Use Case: Rapid data replication and synchronization between Azure regions, services, or virtual networks. Examples include cross-region **disaster recovery (DR)** replication, multi-region database sync, or moving large datasets between Azure services.

- **Business Value:** Greatly reduces **time-to-completion** for geo-replication tasks and backups. An ~12× speed boost means data that once took 12 hours to copy between regions might finish in ~1 hour, tightening RPO/RTO for DR. This improves SLA reliability– backups complete within maintenance windows and failover data is up-to-date. It also enables **global load balancing** of big data: e.g. quickly shifting TBs of analytics data from East US to West Europe to balance workloads.
- **Priority: High.** Cross-region data movement is critical for enterprise continuity and compliance. Faster replication directly translates to lower downtime and data loss risk. For example, Azure's native replication can have RPO of hours ; Netpump can shrink that drastically. This use case appeals to any org with multi-region deployments or compliance requirements.

Intra-VNet and Cross-Service: Even within one region, Netpump can accelerate transfers between isolated VNets or from one service to another (e.g. between storage accounts or from an Azure SQL export to Blob storage) if the default methods are slow. While Azure's internal network is high-bandwidth, large file copy operations still incur overhead. Netpump's protocol can ensure maximum throughput consistently, improving data pipeline throughput for **cloud-native ETL** jobs or nightly **data warehouse loads** . The benefit is a shorter batch window and more timely data availability for business intelligence.

2. **Hybrid Cloud Data Movement (On-Premises ↔ Azure)**

Use Case: High-speed movement of data between on-premises environments and Azure. This includes one-time **bulk migrations** (e.g. moving a petabyte-scale file system or database into Azure) as well as ongoing **hybrid workflows** such as backing up on-prem data to Azure, ingesting IoT/edge data into Azure for analysis, or **cloud bursting** scenarios whereon-prem data is periodically pushed to Azure for processing.

- **Business Value:** Netpump can dramatically shorten migration projects and ingestion pipelines. For example, transferring a multi-TB dataset over a high-latency WAN could be an ordeal with standard tools – often limited to ~30% of link capacity due to TCP inefficiencies. With ~12× acceleration, a job that might take days could finish in hours. This **speeds up cloud adoption** (delivering cost savings sooner by decommissioning legacy systems) and enables new hybrid workflows. Companies can meet tight ingestion windows – e.g. uploading daily sensor logs from factories to Azure overnight – with time to spare. It also provides more reliable **backup and restore**: on-prem backup data can stream to Azure quickly (and vice versa, for restores), shrinking backup windows and improving confidence that off -site copies are current.
- **Priority: Very High.** Hybrid data transfer is ubiquitous – most Azure customers need to move data in or out. A ~12× performance uplift directly cuts costs (less down time waiting for data, less need for costly physical shipments). It can even replace the need for shipping disks via Azure Data Box in some cases, by making network transfer fast enough. Enabling near-real-time hybrid data flows (e.g. constantly syncing an on-prem database to Azure) can unlock **new workflows** where cloud analytics operate on fresh data continuously.

Example: Consider a bursty analytics workflow: a media company records terabytes of video on-prem, then wants to process it in Azure. Using Netpump, they can "burst" the raw footage to Azure in a fraction of the usual time, run cloud-based analysis or rendering, and possibly **send results back** just as fast. This end-to-end acceleration compresses the total project timeline (from content capture to insight) and enables more frequent bursts.

3. Outbound Data Distribution (Azure → Edge or Customer Sites)

Use Case: Accelerating data transfers from Azure out to external destinations – whether customer on-prem sites, edge servers, or multiple partner locations. Examples include distributing large software updates or content from a central Azure repository to dozens of branch offices, sending compiled research data from Azure to collaborators' data centres, or rapid cloud-to-ground **disaster recovery** (restoring cloud backups to an on-prem DR site).

- **Business Value:** Netpump's cluster-based acceleration (with endpoints in Azure and at customer sites) can **push data to many receivers efficiently**, potentially using peer-to-peer techniques to scale distribution. This is valuable for **content delivery and media**: e.g. a studio in Azure can blast 4K video masters to multiple post-production sites worldwide much faster than over HTTP. High-speed outbound transfer ensures **timely updates** – for instance, critical software patches or IoT firmware updates reach all edge nodes in minutes instead of hours. In disaster recovery, if a business needs to pull backups from Azure to restore on-prem systems, Netpump shortens the recovery time (improving RTO).
- **Priority: Medium-High.** Outbound use cases are slightly more niche (dependent on needing large data egress from cloud), but for those who do (media, software, IoT), the performance uplift is **transformational.** *Creative scenario:* A gaming company could distribute 100 GB game builds from Azure to global test labs 12× faster – turning a multi-hour wait into a quick transfer – which accelerates release cycles and collaboration. Given Azure egress bandwidth is often plentiful but pricey, Netpump ensures you **get**

your money's worth by fully utilizing available bandwidth and avoiding repeated attempts due to timeouts.

One-to-Many Distribution: A unique scenario where Netpump could shine is **simultaneous data distribution to many endpoints**. Traditional tools send sequentially or get bottlenecked per receiver. If Netpump supports parallel peer-assisted delivery (similar to BitTorrent-like approaches), a single Azure source could feed a set of edge nodes which then share pieces among themselves. This was demonstrated by competitor Resilio Connect, which achieves >10× Aspera's speed in multi-endpoint transfers by leveraging peer-to-peer sharing. Netpump could exploit a similar approach, multiplying the 12× single-link gain across many receivers – a huge enabler for things like global content staging or multi-site cloud data sync.

4. **Enabling New "Fast Data" Workflows**

Beyond the obvious use cases, Netpump's performance can **unlock workflows that were previously impractical** due to network slowness:

- **"Bursty" Data Analytics:** Organizations that collect data in bursts (e.g. scientific experiments, retail holiday spikes) can upload those large bursts to Azure quickly with Netpump. For instance, an autonomous vehicle team generates several TB of sensor data per test drive. Instead of physically shipping drives, Netpump lets them **ingest this data the same day** to Azure, enabling immediate cloud-based model training or analysis. The high throughput shortens the cycle from data capture to actionable insight, which can be a competitive advantage in fast-moving fields.
- **Cloud-Native ETL and Data Pipelines:** Many analytics workflows involve shuffling large datasets between storage, lakes, and warehouses. Netpump can accelerate **cloud ETL** by quickly transferring large fi les (or database exports) between services or regions. This reduces pipeline latency – e.g. a cloud ETL job that joins data from multiple regions can pull the remote data 12×+ faster, getting results in minutes instead of hours. Businesses gain more **fresh, up-to-date analytics** and can run extra pipeline iterations when they're not bottlenecked by transfer time.
- **Media & Rendering Pipelines:** Media and entertainment companies handle massive files (4K/8K video, CGI renders). Netpump would be invaluable for them to **exchange and collaborate on content globally**. For example, a VFX studio can upload daily footage to an Azure rendering farm and then download the rendered outputs or dailies to editorial offices in a fraction of the usual time. IBM notes that in media, secure high-speed transfer **"accelerate[s] global content distribution"** for video production. The outcome is faster production cycles and the ability to work with talent or teams across continents without lengthy fi le wait times. High throughput also adds reliability –large media fi les are less likely to fail mid-transfer, avoiding costly delays.
- **Big Data/ML Model Training:** With the rise of **AI and large-scale ML** , enterprises often need to move **petabyte-scale datasets** to wherever the GPUs are. The demand for such high-speed data movement is growing: *"enterprises with generative AI training… and larger amounts of data in cloud collaboration services" are* fi*nding standard WAN transfers inadequate*. Netpump can expedite moving a training dataset to Azure ML by 12×+, meaning AI teams can start training sooner and iterate more. It also means they

can leverage spot GPU capacity in another region when needed, without weeks of data copying. Essentially, it **unlocks agility in AI development** – data location becomes less of a constraint when it can be relocated quickly.

Each of these scenarios is **enabled or significantly enhanced by Netpump's performance**. Among them, the highest-payoff use cases tend to be those where **time literally equals money or risk**: disaster recovery (avoiding downtime), cloud migrations (accelerating time-to-value), and media/AI pipelines (improving productivity and throughput). By focusing on these, Netpump can deliver clear ROI – e.g. if a transfer that normally consumes 12 hours of an expensive GPU cluster is done in 1 hour with Netpump, the cost savings in cloud compute time (and the opportunity to do more tasks) are tangible.

Summary of Top Use Cases:

- **Multi-TB Cloud Migration / Ingestion (Hybrid)** – Shortens projects from weeks todays; saves cost and enables new hybrid workflows. **(Top Priority)**
- **Cross-Region Data Replication & DR (Intra-Azure/Hybrid)** – Improves RPO/RTO and global data availability; critical for enterprise SLAs. **(Top Priority)**
- **Global Content Distribution (Outbound)** – Media, software updates, or multi-site data sync delivered with minimal delay; adds value in media/entertainment and distributed enterprises. **(High Priority)**
- **Cloud Bursting & Analytics Pipelines (Hybrid)** – Allows on-demand use of cloud by moving data fast (e.g. bursty analytics, ML model training). **(Medium-High Priority)**
- **Real-time Collaboration on Large Data** – Lets distributed teams work on the same large datasets (geoscience, genomics, etc.) by quickly syncing changes. **(MediumPriority)**

All these leverage Netpump's core strength: turning the **network "speed limit"** from a roadblock into a competitive advantage.