Relazione Tecnica per AUSL RIETI

Table of Contents

1 Introduzione

KSI è un Partner Gold NetApp ed è un System Integrator operante nel settore dell'IT del mercato nazionale da oltre 20 anni.

La nostra esperienza riguarda particolarmente la gestione di dati sensibili in importanti Data Center di Clienti italiani sia pubblici che privati.

La nostra partnership con NetApp ci permette di avere accesso a risorse del vendor pregiate a condizioni particolarmente vantaggiose.

Questa soluzione proposta è oggi in funzione non soltanto a Rieti, ma anche presso la ASL di Napoli 3 oltre che presso altri vari clienti privati.

2 Sintesi della soluzione proposta

1) **Storage All Flash NetAPP A300.**
   Il Sistema si compone di:

   ➢ **1 x dual head NetApp A300** (nota nella lista dei materiali relativa ad A300 offerta allegata è descritto come quantità 2(due) in quanto trattasi di un sistema ma ridondato dual head – doppia testa);

   ➢ **1 x cassetto di espansione dischi SSD 24x960 GB RAW equivalenti a 15TB utili;**

   ➢ **il sistema include il Massimo Livello di Software Operativo Ontap identificato dalla licenza denominata FlashBundle** abilita il supporto per tutti i Protocolli è comprensivo comprensivo del software Ontap attiva le seguenti funzionalità:

   SnapRestore,

   SnapMirror,

   SnapMirror

   Synchronous,

   SnapVault,

   FlexClone,

   SnapManager Suite,

   SnapCenter Foundation,

   FabricPool per il tiering su Cloud e/o altro livello di Storage,

   Data at rest encryption;

   ➢ **Railkit, Powercable, Connettività SFP+ per il collegamento del A300 alla SAN di ASL Rieti;**

➤ **Sottosrcrizione per 24 mesi della licenza NetApp CVO Cloud Volume Ontap per il tiering (SnapMirror) verso Cloud Pubblic e/o diversi livelli di Storage;**

➤ **Servizi Professionali d'installazione e configurazione di base;**

➤ **Supporto e Manutenzione per 36 mesi livello Premium 4hr on-site;**

2) **Upgrade di dischi per il sistema Storage Grid:**

➤ **Numero 28 Disc Drive da 4TB per una capacità complessiva di 104 TB raw**

3) **Servizi Professionali di Residenza NetApp**

➤ per mesi 6 per ottemperare alla richiesta cap. Tecnico Pag 2/2 descritti in sintesi come **PS-SOW-SOLUTION q.tà 1**. Come meglio descritti nell'allegato A **- Statement of Work - ASL Rieti Onsite Residency Data Migration, SnapMirror, StorageGRID Expansion Services, come servizi erogati direttamente da personale NetApp Italia Srl.**

3 Descrizione delle Componenti Proposte.

3.1 Storage A300 all-flash connesso al cloud basato su ONTAP

NetApp® All Flash FAS (AFF) A300 è una solida piattaforma scale-out costruita per ambienti virtualizzati, che combina performance a bassa latenza con gestione dei dati completa, efficienza integrata, protezione integrata dei dati, supporto multiprotocollo e operazioni senza interruzioni.

Il sistema A300 offerto è basato sul software per la gestione dei dati NetApp ONTAP®, i sistemi NetApp AFF A300 Accelerano, gestiscono e proteggono i dati business-critical ed offrono una transizione facile verso la tecnologia flash per costituire un ambiente di tipo cloud ibrido. Con il sistema AFF A300 è possibile:

- Aumentare l'efficienza delle operazioni
- Accelerare le prestazioni delle applicazioni
- Mantenere i dati business-critical disponibili, protetti e sicuri

3.1.1 Aumentare l'efficienza delle operazioni

I sistema AFF A300 offre un ampio supporto dell'ecosistema di applicazioni e profonda integrazione per applicazioni aziendali, infrastrutture di desktop virtuale (VDI), database e virtualizzazione di server enterprise grazie al supporto di Oracle, Microsoft SQL Server, VMware, SAP, MySQL e altro ancora. È possibile effettuare il provisioning dello storage in tempi rapidi attraverso NetApp ONTAP System Manager a corredi con tutti i sistemi ONTAP con il quale è possibile:

- Fornire e ribilanciare i carichi di lavoro monitorando cluster e nodi ONTAP
- Utilizzare l'automazione rapida e il self-service per provisioning e la data protection

Migrare perfettamente i dati importando le LUN da storage array di terze parti direttamente in un sistema AFF

Di seguito una figura che raffigura un esempio d'uso di ONTAP System Manager
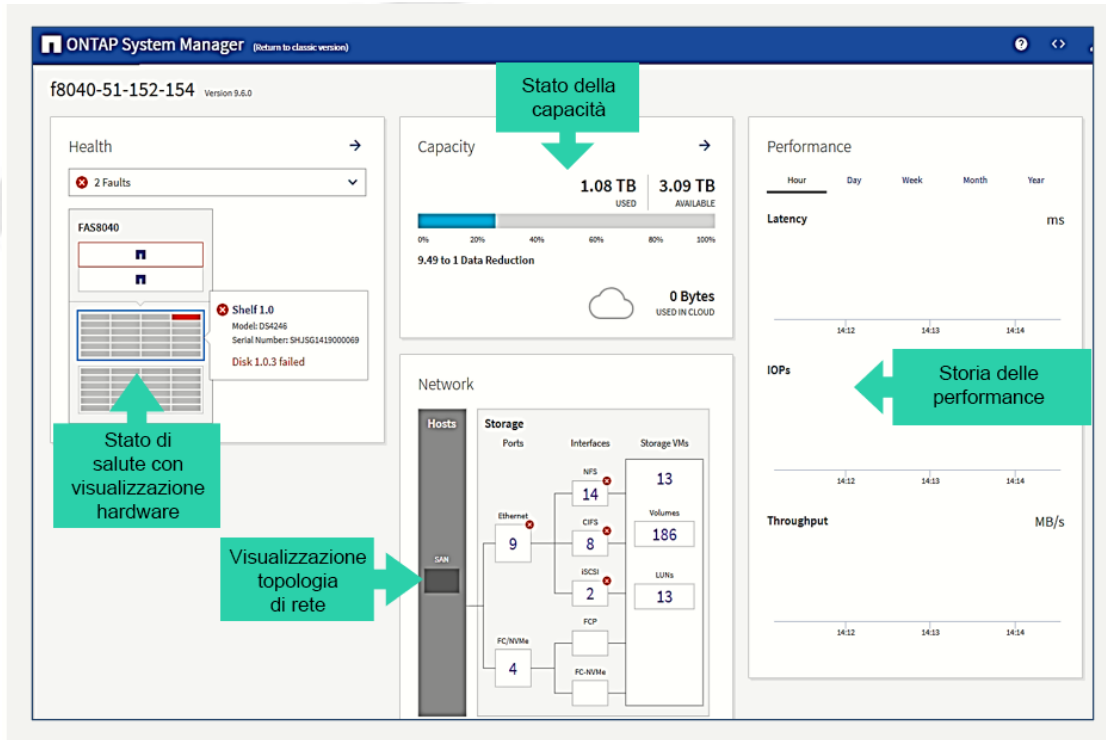
Figura 1: **ONTAP System Manager** *– Basato sulle API REST, la nuova dashboard di System Manager è e visualizza informazioni maggiormente dettagliate in una vista molto pratica.*

Inoltre, con il motore di intelligence NetApp Active IQ, è molto più semplice ottimizzare il sistema gestito. Questo tool di supporto proattivo ed analisi predittiva fornisce informazioni e raccomandazioni in tempo reale per prevenire i problemi e per ottimizzare l'infrastruttura dati.

Figura 1: **gestione dei dati integrata nell'applicazione** *– Implementare workload strategici in con ONTAP System Manager.*

Ottenere risparmi di storage, supportati dalla garanzia più vantaggiosa del settore

NetApp impiega varie funzionalità per promuovere risparmi ottimali di capacità e per ridurre i costi. Il supporto dei dischi a stato solido (SSD) con tecnologia di scrittura multistream offerto dai sistemi AFF, unito alle partizioni SSD avanzate, offre la massima capacità utilizzabile. In qesto modo è possibile utilizzare la minore quantità di storage possibile perché il thin provisioning, le copie NetApp Snapshot™ e le funzionalità di riduzione dei dati inline, come deduplica, compressione e compaction, offrono ulteriori risparmi di spazio senza impatto sulle performance (in presenza di dati deduplicabili).

Con AFF, i costi del data center saranno ridotti perché sarai in grado di fornire la capacità migliore per qualsiasi workload. Con la più recente release di ONTAP, AFF fornisce un'efficienza dello storage superiore fino al 33%, così che puoi ridurre drasticamente i costi del tuo data center con la capacità migliore per qualsiasi workload, supportata dalla garanzia più vantaggiosa del settore. Garantiamo l'efficienza dei workload per iscritto:

- Garanzia 3:1 **valida per i soli workload DEDUPLICABILI**
- 4:1 per VVOL e 8:1 per VDI
- Efficienza maggiore di 10 volte quando utilizzi le copie NetApp Snapshots.

Creazione di un ambiente IT in modalità Cloud Ibrido

Con la tecnologia NetApp inclusa nel sistema offerta è possibile semplificare integrare la gestione dei dati nel cloud ed on-premise per soddisfare più facilmente le esigenze di business in evoluzione e ottenere un vantaggio competitivo. Con AFF A300, è possibile collegarsi a differenti Cloud Provider come MS Azure, Amazon AWS etc. per usufruire di ulteriori servizi dati, data tiering, caching e disaster recovery. Con la funzionalità **FabricPool** ad es. È possibile massimizzare le performance e ridurre i costi generali di storage eseguendo automaticamente il tiering dei dati "freddi" nel cloud o su un diverso dispositivo di storage di archiviazione locale supportato come ad es**. "NetApp Storage Grid".**
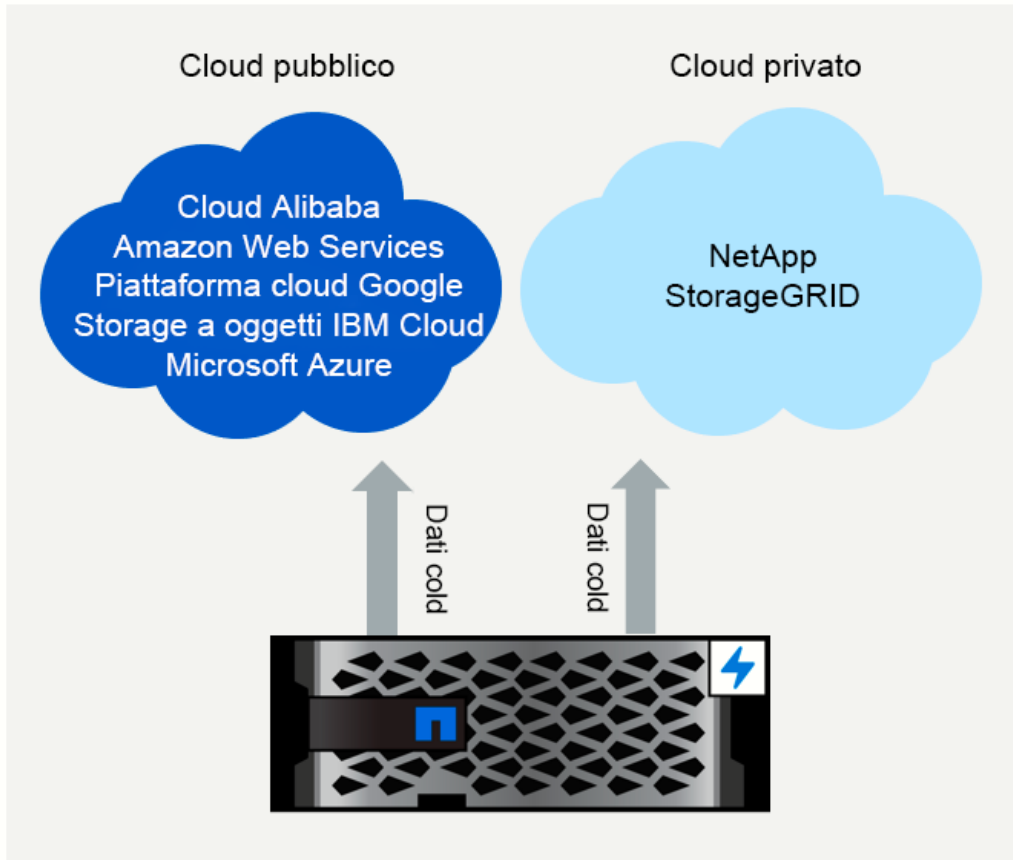
Figura 2: tiering automatico dei dati cold nel cloud *– Massimizzare lìambiente flash con ONTAP FabricPool.*

3.1.2 Accelerare le applicazioni e rendere la tua infrastruttura a prova di futuro

I sistemi NetApp AFF offrono performance leader di settore comprovate dai benchmark SPC-1[1] e SPEC SFS di settore, il che li rende ideali per le esigenti applicazioni transazionali come Oracle, Microsoft SQL Server, database MongoDB, VDI e virtualizzazione server. Con la potenza della connettività host

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[1] Collegamento al report SPC-1: http://spcresults.org/benchmarks/results/spc1-spc1e#A32007.

NVMe/FC front-end combinata con gli SSD back-end NVMe-attached, i sistemi AFF offrono latenza pari a 100 μs, il che li rende ideali per i tuoi workload più esigenti.

Accelerare carichi di lavoro esigenti

Il sistema AFF A300 supporta una connettività NVMe/RoCE back-end allo shelf NVMe e NVMe/FC front-end all'host. AFF A300 offre connettività di rete host avanzata per supportare una varietà di implementazioni. L'accelerazione hardware ottimizza performance ed efficienza dello storage e quindi l'adozione di A300 consente di:

- Consolidare tutti i workload sui sistemi AFF, che scalano a milioni di IOPS mantenedo una latenza di 1 ms in un cluster con un'architettura scale-out realmente unificata

- Ottienere Quality of Service adattiva integrata e ottimizzata in grado di salvaguardare gli SLA degli ambienti multi-tenant e a workload multipli.

- Gestire container NAS scalabili (con un namespace singolo

- Migliorare la velocità e la produttività della collaborazione in siti multipli e incrementare il throughput dei dati per applicazioni a elevata intensità di lettura con il software NetApp FlexCache®

Supporto di NVMe avanzato

Tutti sistemi all-flash AFF A-Series compreso l'A300 oggetto della proposta, sono progettati appositamente per la tecnologia flash, garantiscono performance, capacità, densità, scalabilità, sicurezza e connettività di rete leader del settore. Tutti i sistemi AFF A-Series midrange e high-end supportano la connettività host NVMe/FC. In questo si incrementano praticamente del gli IOPS. Allo stesso tempo, si riduce di metà il tempo di risposta dell'applicazione rispetto alla connettività FC tradizionale. Questi sistemi supportano nativamente una serie di ecosistemi applicativi e di piattaforma OS, tra cui VMware, Microsoft Windows 10 e Linux

3.1.3 Data Protection Inclusa in AFF A300

Per I sistemi AFF sono dotati di una suite completa di software NetApp per la data protection integrata e coerente con le applicazioni per garantire data protection integrata, business continuity, disaster recovery rapido ed in sicurezza. Le caratteristiche e i benefici principali del prodotto comprendono:

- Riduzione dei costi relativi alla gestione dei dati grazie all'efficientamento dello spazio nativo di cloning e copie NetApp Snapshot. Sono supportate fino a 1.023 copie.

- Suite di piattaforme e plug-in unificati e scalabili per una data protection e una gestione dei cloni coerenti con l'applicazione con NetApp SnapCenter®.

- Riduzione dei costi complessivi di sistema grazie al software di replica NetApp SnapMirror®, che esegue la replica verso qualsiasi tipo di sistema FAS/AFF: all-flash, ibrido, HDD, on-premise e nel cloud.

- Protezione dell'intero sistema con il software di replica sincrona NetApp MetroCluster™. Inoltre, NetApp SnapMirror Synchronous offre una replica più granulare dei dati critici selezionati.
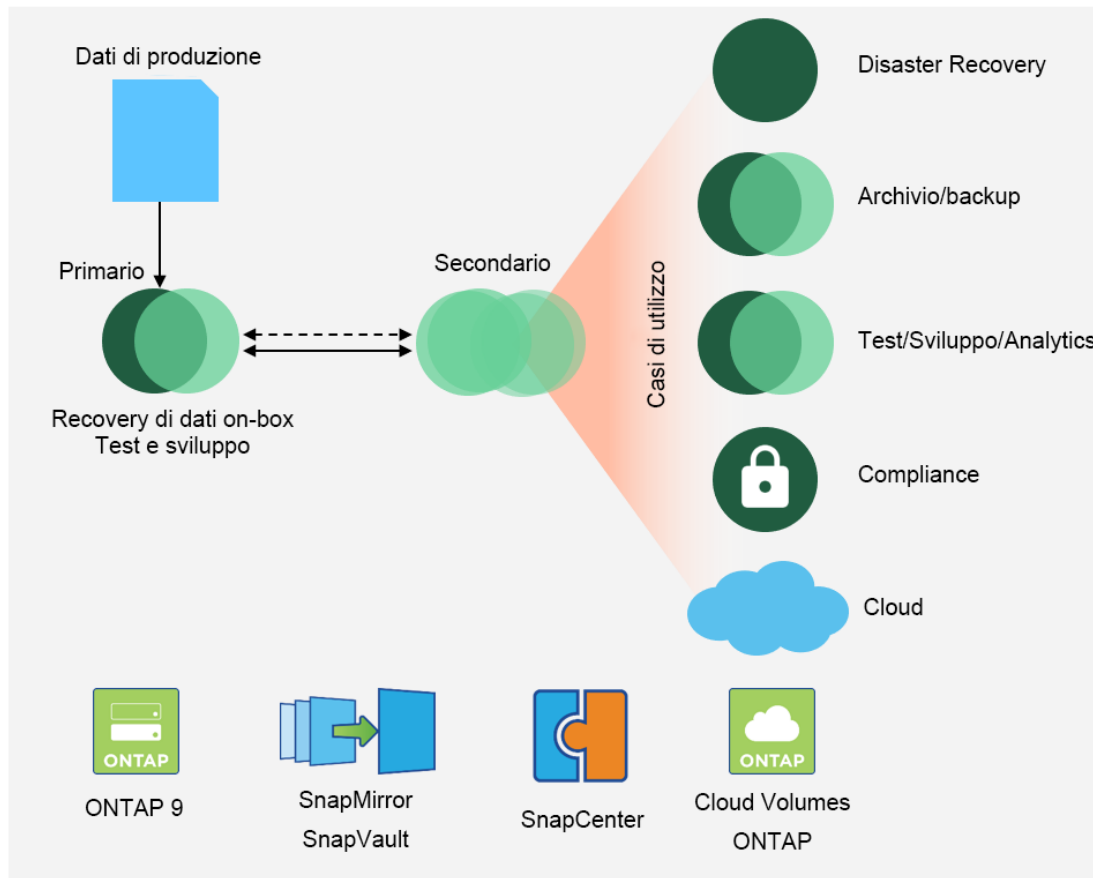
Figura 3: data protection integrata NetApp. *– Singola piattaforma flessibile per la gestione dei dati che offre la disponibilità dei dati necessaria per garantire il funzionamento delle applicazioni, ridurre i rischi, tenere sotto controllo i costi e migliorare i processi di protezione dei dati.*

Inoltre, la crittografia flessibile e la gestione delle chiavi garantiscono la protezione dei dati sensibili on-premise, nel cloud e durante il trasferimento. Con le soluzioni di sicurezza semplici ed efficienti, puoi:

- Ottenere una compliance FIPS 140-2 (livello 1 e 2) con dischi con crittografia automatica e utilizza qualsiasi tipo di disco con crittografia basata su software.

- Soddisfare i requisiti di governance, rischio e compliance con funzionalità di sicurezza come la pulizia; accesso e verifica dei monitor; blocco dei file WORM (write once, read many).

- Proteggere dalle minacce con multifactor authentication, controllo degli accessi in base al ruolo, multitenancy sicura e sicurezza dei file a livello di storage.

Con AFF A300 si mantiene una corerenza della gestione e della protezione dei dati anche in caso di cambiamento delle esigenze di prestazioni e capacità ed evoluzione della strategia cloud:

- I sistema AFF A300 elimina i "colli di bottiglia" di performance. L'integrazione perfetta con i sistemi FAS ibridi e Storage Grid NetApp consente che i carichi di lavoro possano spostarsi in modo trasparente tra i tier dalle performance elevate e i tier di capacità a più basso costo e di minore prestazione.

- Il sistema si adatta perfettamente alle esigenze che cambiano con l'unico array all-flash che consentono di combinare controller, dimensioni di dischi a stato solido e tecnologie di prossima generazione.

- AFF è pronto per il data fabric grazie alla connettività comprovata con il cloud. FabricPool consente di spostare i dati automaticamente tra AFF e i tier storage cloud per massimizzare le prestazioni e ridurre il costo complessivo della gestione dei dati.

- L'integrazione delle applicazioni leader di mercato con Oracle, Microsoft, VMware, SAP, OpenStack e molti altri ti consente di ottimizzare la gestione dei dati per gli ambienti di workload aziendali.
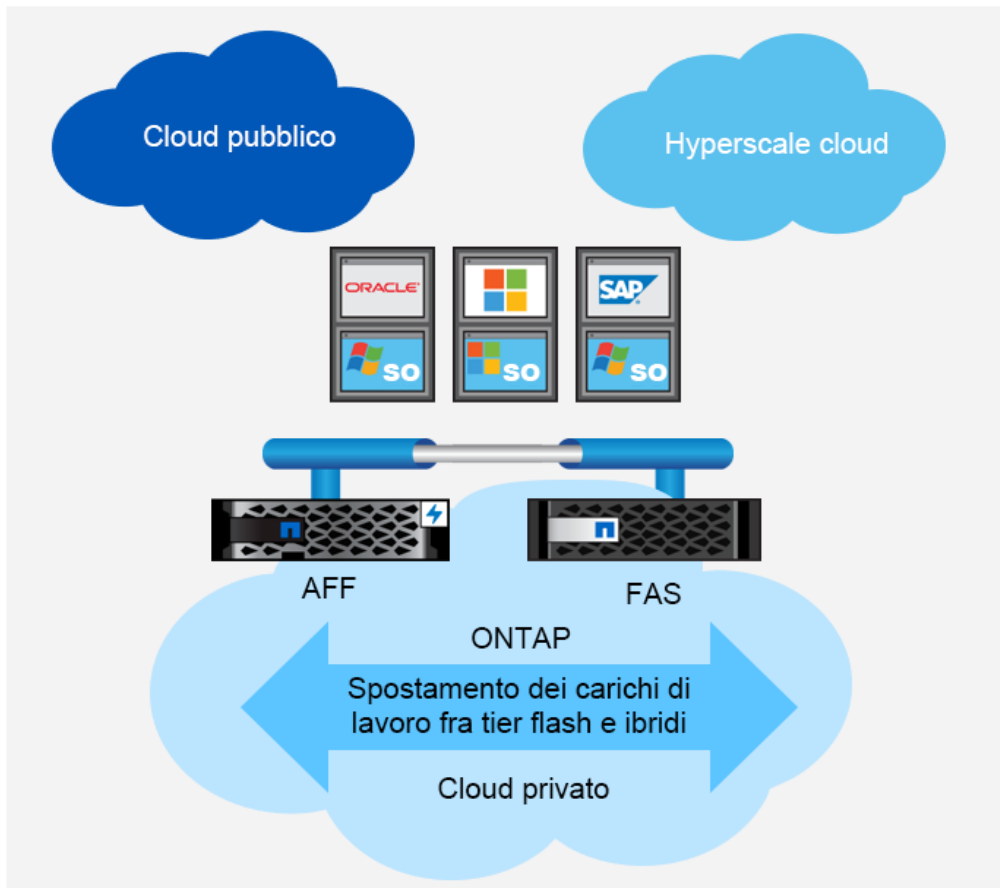
3.2 Sistema AFF A-300 Caratteristiche generali.

3.2.1 AFF A300

Il sistema NetApp AFF A300 offre supporto completo NVMe end-to-end alla fascia media. È progettato per applicazioni aziendali che richiedono il miglior equilibrio tra performance e costi, nonché carichi di lavoro molto esigenti che richiedono una latenza estremamente bassa. La connettività NVMe/FC front-end consente di ottenere performance ottimali da un array all-flash per carichi di lavoro che includono AI, ML, analytics in tempo reale e MongoDB, nonché database business-critical. Il sistema è fornito con la versione più recente del software per la gestione dei dati NetApp ONTAP, che consente di visualizzare facilmente le informazioni di sistema su capacità, salute dell'hardware, rete e performance storiche. Con la tecnologia dei dischi con crittografia automatica, è possibile incorporare facilmente la crittografia dei dati a riposo in tutte le implementazioni con server OKM o KMIP.

Tabella 1:   software AFF A-Series incluso in A300.

Software AFF A-Series	
Protocolli di accesso ai dati	FC, iSCSI, NVMe/FC, FCoE, NFS, SMB, Amazon S3, MS Azure
High availability	Connettività host active-active e simmetrica active-active (solo SAN) Manutenzione senza interruzioni, aggiornamento e clustering a scalabilità orizzontale Resilienza multisito per accesso continuo ai dati
Efficienza dello storage	Compressione, deduplica e compattazione dei dati inline LUN efficiente in termini di spazio, file e volume cloning Tiering automatico dei dati
Gestione dei dati	GUI integrata intuitiva, API REST e integrazione dell'automazione Analytics predittivi AI-informed e azione correttiva

Software AFF A-Series	
	Controllo del carico di lavoro di qualità del servizio (QoS)
	Semplice provisioning e gestione dei dati da sistemi operativi host leader del mercato, hypervisor e software applicativi
NAS scalabile	Gestione del namespace singolo su larga scala con caching locale e remoto
Data protection	Copie Snapshot coerenti con l'applicazione e ripristino
	Backup e disaster recovery remoti integrati
	Replica sincrona con perdita dei dati pari a zero
Sicurezza e conformità	Accesso admin multifactor
	Storage condiviso multitenant sicuro
	Crittografia in-flight e dei dati a riposo
	Conservazione dei dati conforme alla normativa

3.3 AFF A300 Caratteristiche e Specifiche del Sistema Offerto.

Il sistema NetApp AFF A-300 Offerto risponde in maniera congrua e completa alla lista dei materiali Bill of Material "BOM" puntualmente richiesta come da allegato al capitolato tecnico dell'iniziativa di gara; di seguito si riporta la lista e la descrizione delle singole componenti :

Hardware

Numero di Parte	Descrizione del Prodotto	Quantità
AFF-A300A-001	AFF A300 HA System,FlashBundle	2

	Il Sistema Include la licenza SW FlashBundle che attiva: Tutti I protoccolli e le funzionalità di , SnapRestore, SnapMirror, SnapMirror Synchronous, SnapVault, FlexClone, SnapManager Suite, SnapCenter Foundation.	
X6566B-05-R6-C	Cable,Direct Attach CU SFP+ 10G,0.5M,-C	2
X66034A-C	Cable,12Gb,Mini SAS HD,5m,-C	4
X6235-C	Chassis,FAS8200,AFF-A300,AC PS,-C	1
DOC-AFF-A300-C	Documents,AFF-A300,-C	1
X6596-R6-C	SFP+ FC Optical 16Gb,-C	8
X-02659-00-C	Rail Kit,4-Post,Rnd/Sq-Hole,Adj,24-32,-C	2
X1558A-R6-C	Power Cable,In-Cabinet,48-IN,C13-C14,-C	4
DATA-AT-REST-ENCRYPTION	Data at Rest Encryption Capable Operating Sys	2
DS224C-S-.96-24S-2P-C	SSD Shelf,12G,24x960GB,2P,-C	1

Software

Numero di Parte	Descrizione del Prodotto	Quantità
SW-2-CL-BASE	SW-2,Base,CL,Node	1
SW-2-A300A-NVE-C	SW,Data at Rest Encryption Enabled,A300A,-C	2
SW-2-A300A-TPM-C	SW,Trusted Platform Module Enabled,A300A,-C	2
SW-FLASH-BUNDLE-2P-C	ONTAP,Per-0.1TB,FlashBundle,Ult-Perf,2P,-C	230

Subscription

Numero di Parte	Descrizione del Prodotto	Quantità

SUBS-CVO-BYOL-24MO	SW Subs,Cloud VolumesONTAP,Bundle,BYOL,24m, SW-CVO-BYOL	1

Licenza di Sottoscrizione per CLOUD-VOL_ONTAP (https://cloud.netapp.com/ontap-cloud per maggiorni informazioni), il software è in Bundle per la Data Protection del AFF A300

Durata   24 Mesi

Servizi

Numero di Parte	Descrizione del Prodotto	Quantità
PS-DEPLOY-STAND-AFF-M	PS Deployment,Standard,AFF,Med	1

I servizi professionali di installazione e configurazione di base inclusi PS-DEPLOY-STAND-AFF-M sono basati su un seti di attività predeterminato "task" descritti in https://www.netapp.com/pdf.html?item=/media/8801-sd-system-standard-deployment.pdf

Durata del Contratto di Supporto e Manutenzione: 36 Mesi

Indirizzo d'installazione Via Lionello Matteucci 9 Rieti 02100

3.3.1 Specifiche del Sistema AFF A300 Offerto:

CONFIGURAZIONE

Modello:	AFF A300A
Nodi:	2
Drives Totali:	24
Tipo di Disk Drive:	960GB SSD

CAPACITA' RAW

23.04 TB

CAPACITA' UTILE

15.5 TiB

CAPACITA RAW MASSIMA***

345.6 TB

*** assumendo l'utilizzo di dischi della stessa tipologia e dimensione

STORAGE EFFICIENCY***

3 : 1

CAPACITA' EFFETTIVA***

46.5141 TiB

UTILE VS. EFFETTIVA

 15.5 TiB
46.5141 TiB

*** assumendo la possibilità di applicare l'utilizzo delle tecnologie di storage efficiency quali compressione e deduplica (la storage efficiency non è garantita e non applicabile su dati nativamente non comprimibi)

PARAMETRI AMBIENTALI

Rack Units:	5 U
Peso	56 Kg
Potenza:	685.00 W
Assorbimento:	3.50 A
BTU/hr:	2339.00

NOTA: **La capacità effettiva utile offerta oggetto della presente offerta è al netto dell'efficienza cioè quella espressa dal parametro CAPACITA' UTILE = 15.5 TiB**

La CAPACITA' EFFETTIVA rappresenta invece una indicazione della massima capacità erogabile dal sistema a condizione che i dati trattati siano di natura comprimibile e deduplicabile.

Fig. Massimo Ingombro del Sistema Offerta (5 RU). Il cabinet non è oggetto della proposta e non richiesto pertanto non è incluso.

3.4 Upgrade di Dischi del Sistema E-Series.

Per l'upgrade del Sistema E-Series vengono offerte le seguenti parti come da richiesta del capitolato tecninco:

Numero parte	Descrizione del prodotto	Q.tà complessiva
E-X4105A	DSK DRV,4TB,7.2k,12Gb,Non-FDE,DE460C	28

I servizi professionali di installazione e configurazione delle parti offerte sono incluse nelle prestazioni erogate da personale NetApp nell'ambito delle attività incluse in PS-SOW-SOLUTION "Servizi di Residenza" NetApp.

3.5 Cloud Volume Ontap

Il software di gestione dei dati NetApp Cloud Volumes ONTAP offre controllo, protezione, flessibilità ed efficienza dei dati rispetto agli ambienti cloud. Cloud Volumes ONTAP è il software di gestione dei dati nativo del cloud costruito sul software di storage NetApp ONTAP che offre una piattaforma di storage universale dal data center al cloud. Avere lo stesso software per lo storage on-premise e nel cloud massimizza il valore di un data fabric e consente di evitare i costi e i tempi necessari per il training dello staff IT sulle nuove metodologie di gestione dei dati.

Cloud Volumes ONTAP offre una soluzione di data storage ideale per soddisfare molti workload diversi. Ciò include disaster recovery, sviluppo e ambienti di test fino ad applicazioni basate sul cloud che richiedono operazioni altamente disponibili e senza interruzioni. Viene implementato e gestito da NetApp Cloud Manager come soluzione solo software sulle istanze di calcolo cloud che gestiscono il cloud storage. In questo modo è anche possibile implementare un ambiente di storage virtuale direttamente sulla gamma di risorse cloud a propria disposizione.
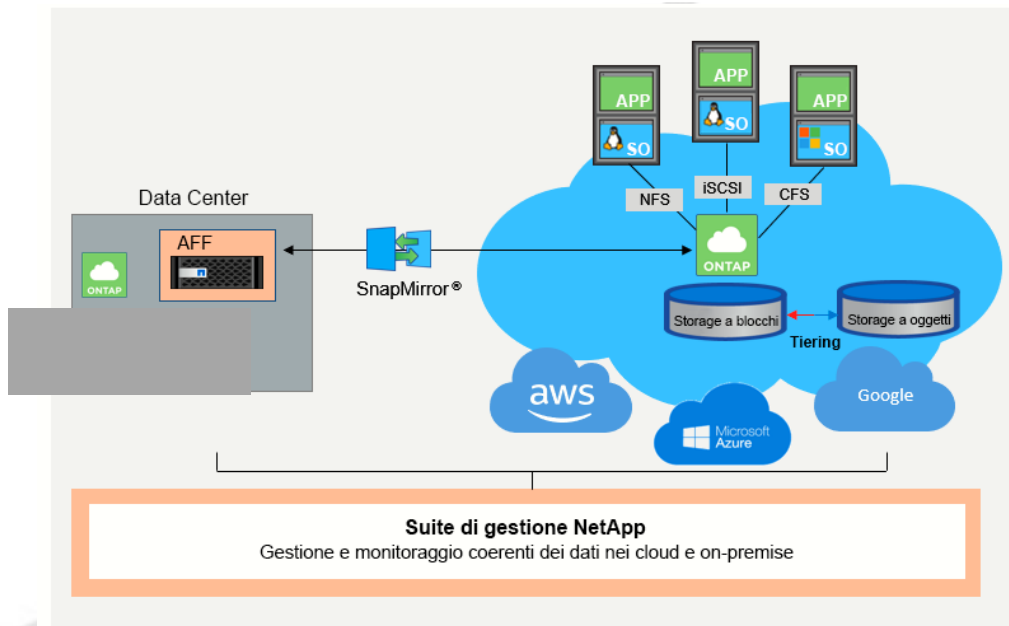

Figura 4:   Cloud Volumes ONTAP.

La realizzazione di un ambiente di cloud storage con Cloud Volumes ONTAP offre funzionalità enterprise per il tuo storage cloud. Con ONTAP è possibile:

- Ridurre al minimo le risorse di cloud storage grazie a funzionalità di efficienza come deduplica dei dati, compressione, compaction e copie snapshot a basso consumo di capacità, che possono essere attivate sui tuoi dati primari di produzione.

- Fornire protocolli storage NAS e SAN del tuo ambiente applicativo con supporto CIFS/SMB, NFS e iSCSI.

- Offrire backup quasi istantanei e point-in-time dei tuoi dati senza occupare ulteriori risorse di storage usando le Snapshot ™NetApp a impatto nullo.

- Creare copie Snapshot coerenti con l'applicazione con il software ONTAP SnapCenter®.

- Sfrutta la tecnologia SnapMirror® di replica dello storage, per creare il tuo cloud ibrido collegando lo storage on-premise NetApp AFF, il FAS ibrido e lo storage ONTAP Select software-defined, all'ambiente Cloud Volumes ONTAP.

4 Allegati

A - **Statement of Work - ASL Rieti Onsite Residency Data Migration, SnapMirror, StorageGRID Expansion Services**

B – **A300 Technical Specification**

C – **Descrizione Support Edge Premium NetApp**

Cordiali saluti

<div align="right">

KAY SYSTEMS ITALIA S.r.l.
Dr. Matteo Viviano

Amministratore Unico

</div>

Statement of Work

ASL Rieti
Onsite Residency Data Migration, SnapMirror, StorageGRID Expansion Services

Author: Nick Richards

Date: 22/09/2020

Version 2.1

Document Control

Project Information

Reference Type	Reference Details
Customer Name	ASL Rieti.
Project name	Onsite Residency Data Migration, SnapMirror, StorageGRID Expansion Services
NetApp Quote Number	NetApp Sales Quote TBD
NetApp Invoice	• Exhibit 1 (resident) invoice will be issued upon delivery commencement • Exhibit 2 (projects) invoice may vary using the *Milestone Invoice Process Guidelines*-

Author/Reviewer

Author	Date	Reviewer	Date
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Nick.Richards@netapp.com	14/09/2020	Alberto.Padoan@netapp.com	22/09/2020
		Terry Kochman	23/09/2020
		Alberto Padoan	24/09/2020

Version History

Version	Date	Comment
Version 1.0 Draft	28/07/2020	initial draft
Version 1.1	14/09/2020	Added Migration language
Version 2.0	22/09/2020	Changed Authorized Reseller, other minimal changes
Version 2.1	24/09/2020	Removed table typo

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TABLE OF CONTENTS

1 Introduction

1.1 Parties

This Statement of Work ("SOW") is entered into by and between:

NetApp Italia S.r.l, with its principal place of business at Via Battistotti Sassi, 11 Milan, MI, 20133, Italy ("**NetApp**"); and

ASL Rieti. with its principal place of business at Via Lionello Matteucci 9, 02100 Rieti RI, Italy is the ("**Customer**"), who is purchasing NetApp's services through **Kay Systems Italia SpA,** with its place of business at viale Libano, 80 – 00144 Roma Italia herein **("Authorized Reseller"),**

and is entered into as of the last date of signature of this SOW.

1.2 Purpose of document

This SOW defines the operational terms and the Scope[1] of the consulting services ("**Professional Services**" or "**PS**") that NetApp agrees to supply, and Customer agrees to purchase, for the provision of the Professional Services as described below.

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[1] Refer to Appendix 1 - Glossary/Generic

2   Service Background

2.1   Service Overview (Management Summary)

High-Level Executive Summary

NetApp, in cooperation with its service delivery partner, **Sorint Lab SpA**, will provide the following Professional Services for the Customer:

- Provide a Storage Management Consultant for ONTAP and StorageGRID to assist Customer with the migration of the Customer's applications which can't be migrated in small numbers or cutover windows

- Perform SnapMirror of one (1) volume from AFF to CVO and perform DR test

- Provide Knowledge Transfer session(s) to review Cloud Volumes ONTAP ("CVO") and OnCommand Cloud Manager ("OCCM")

- StorageGRID capacity expansion with the capacity recovered on E-Series after data migration

Exhibit 1 and Exhibit 2 are attached and will provide details for the Project Management, Scope, Deliverables, Exclusions, Specific Assumptions and Customer Responsibilities, SOW Limitations, and Completion Criteria for each PS Service set forth in this SOW.

Once any defined PS Service SOW Limitation is met, the PS Service will be deemed completed.

3   Scope and Provision of Professional Services

3.1   Customer Sites & Equipment

The Professional Services may be performed on the Customer Equipment located at the Customer sites (the "Customer Site") specified below:

Applicable Exhibit #	Customer Site Location Onsite	In Scope Customer Equipment (1) Model # and/or S/N (2) New Controllers (3) Existing Controllers (4) Software[3], Versions & Hosts (5) Protocols, as required
1, 2.	Source Site: Primary DC Via del Terminillo, 42 02100 Rieti Italy	− StorageGRID 9.0.4 S/N 950155 − StorageGRID11.2.0.6 S/N 951492 − E-Series E2860 S/N711217002316, 711217002319 − E-Series E2860 S/N721831501016, 721942500277 − Cloud Volume ONTAP (Azure) S/N: 90320130000000001420
1, 2.	Target Site: Hospital Rieti Italy Via Lionello Matteucci 9 02100 Rieti Italy	− AFF A300

Any products not listed as Customer Equipment above are excluded from the scope.

4 Customer Responsibilities

4.1 Customer Responsibilities - General

The provision of the Professional Services under this SOW is contingent upon Customer fulfillment of the obligations specified below during the term of this SOW:

1. Completion of the Professional Services by NetApp in adherence to the terms of this SOW is contingent upon Customer fulfilling the responsibilities listed below for the duration of this engagement.

2. Customer shall notify NetApp prior to the commencement of the Professional Services of any specific rules and regulations of hygiene and safety and provide onsite access to equipment, and to communication lines.

3. The Customer shall perform all the work to fit out the premises before the start of Professional Services pursuant to the site pre-requirements provided by NetApp. This includes, without limitation, providing electricity, network connections, floor space and the required air-conditioning. All these arrangements must be available during the whole term of the service.

4. The Customer shall, at all times, be responsible for the integrity of its data.

5. The Customer will ensure that all documentation and information provided to NetApp staff is accurate, complete, and up to date.

6. The Customer will make available the equipment, tools, software, licenses and infrastructure needed for the provision of the Professional Services of this SOW.

7. The Customer shall be solely responsible for obtaining and maintaining all third-party licenses and hardware necessary for NetApp to perform the Professional Services specified in this SOW.

8. Customer will provide security passes to allow NetApp access, and the ability to enter and leave Customer sites with personal computers and any other materials related to the Professional Services to be performed under this SOW.

9. Customer shall make knowledgeable staff and system administrators available to NetApp promptly upon request to provide background information and clarification of information required to perform this engagement.

10. Customer will be responsible for any business and data application testing in preparation for the delivery by NetApp of the Professional Services and will, if required, participate in testing as directed by NetApp.

11. The Customer will make appropriate system maintenance windows/downtime available for NetApp (or authorized personnel) as needed and requested.

12. NetApp may terminate this SOW if it reasonably considers not being able to perform the Professional Services under this SOW due to Customer's failure to meet the above obligations in this Section **Error! Reference source not found.**.

4.2 Customer Responsibilities - Project Management

1. The Customer will, for the duration of the engagement in this SOW, provide a project manager with the requisite qualifications, expertise, and knowledge to act as a liaison between the parties;

2. Ensure that an authorized representative will approve documents and specifications and accept the Professional Services provided in accordance with the acceptance procedures outlined in this SOW;

3. Coordinate, schedule, and monitor all Resources[2] and activities related to the Professional Services;

4. Coordinate and monitor all change request activities;

5. Act as the focal point for communications between Customer and NetApp during the term of this SOW;

6. Attend NetApp and Customer status meetings, as applicable and upon becoming aware of a situation that may delay, or threaten to delay, the timely performance of this SOW, promptly initiate the SOW Change Process[3] to address the potential delay.

7. Provide NetApp with five (5) business days advanced notice of any change to a scheduled event. Should the Customer be unable to provide this advanced notice for any reason and/or if the change to the scheduled event extends the project duration, or non-refundable travel costs are incurred, a Change Request[4] may be required in accordance with Section 9.

5   NetApp Responsibilities

5.1   NetApp Responsibilities - General

NetApp acknowledges and accepts to perform the Professional Services as specified in Exhibit 1 and Exhibit 2.

1. NetApp will use commercially reasonable efforts to complete the Professional Services in a timely manner

2. NetApp will perform all appropriate services onsite at the Customer facilities as required. Professional Services not requiring presence onsite may be performed at NetApp facilities, or Offshore, by mutual agreement between Customer and NetApp

3. NetApp reserves the right to subcontract any or all portions of the Professional Services that NetApp is obligated to perform Onsite. NetApp vets all subcontractors for compliance with applicable data protection laws prior to any engagement. Third parties who do not meet their legal obligations are not engaged by NetApp.

6   Assumptions, Constraints and Exclusions

In signing this SOW, the Customer accepts that if these assumptions and constraints are found to be incorrect, a change impact assessment will be instructed, and a change request may be submitted. If a change to the project is required that will affect the Schedule, commercial or quality, then the Customer agrees that these changes will only be progressed with an approved change request.

6.1   Assumptions

1. This SOW applies to consulting services only. Hardware, software, and third-party licenses requested or needed by Customer in relation to the Professional Services are specifically excluded from this engagement.

2. During the applicable Test Phase, NetApp will test the NetApp products to standard software or hardware specifications. Completion of this testing is not a requirement of the product's acceptance which is addressed under the product purchase agreement.

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[2] Refer to Appendix 1 – Glossary/Generic
[3] Refer to Section 9
[4] Refer to Section 9

3. Fulfillment of Customer responsibilities, Section 4 of this SOW

4. New storage systems have been sized sufficiently to meet the Customer's capacity and performance requirements

5. All documentation will be at a level sufficient for NetApp NCDA[5] qualified Consultants to undertake configuration. Requirements for additional documentation will be subject to change control.

6. All information on existing workloads and datasets is available

7. If NetApp personnel do provide scripts, NetApp has no obligation to provide support or maintenance in relation to any scripts created in the performance of Professional Services under this SOW. Any and all future activity for trouble shooting, addition, or changes requested after Customer's acceptance of the Professional Services in accordance with the terms of Section 11 of the SOW must be requested in writing by Customer and will be billed at NetApp's then-current time and materials rate.

6.2 Exclusions

NetApp is responsible for performing only the consulting and implementation services expressly described in this SOW. Professional Services outside the Scope include, but are not limited to the following:

1. Project management of Customer's Resources and third parties not engaged by NetApp

2. Physical relocation of equipment

3. Documentation of non-NetApp components

4. Training

5. Application or Customer's end-user performance testing

6. ONTAP upgrades required to source systems either as part of a migration or ongoing operational reasons

7. ONTAP upgrades required to the destination systems, following initial deployment, for ongoing operational reasons

8. Any upgrade of firmware/software to hosts/switches required as result of the IMT[6] check

9. Applicable systems that cannot be upgraded / modified to comply with the IMT are out of scope

7 Remote Services

Customer agrees that certain NetApp Professional Services which do not require presence onsite may be performed remotely at NetApp facilities (which may be offshore and/or near-shore facilities).

7.1 Definitions

Near-shore Delivered Services are Professional Services performed by NetApp resources located in the same country or region (e.g. European Union) as the location of the Customer's data center(s).

Off-shore Delivered Services are Professional Services performed by NetApp resources located in a different country or region (e.g. European Union) than the location of the Customer's data center(s).

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[5] Refer to Appendix 1 - Glossary/Technology
[6] Refer to Appendix 1 - Glossary/Technology

7.2 Off-shore Services

If Off-shore Delivered Services are purchased by Customer, Customer agrees that:

1. The Offshore Delivered Services will be delivered remotely from NetApp offices in India in Bangalore and the United States in RTP. Visits to the Customer's premises (or to other sites) are separately chargeable;

2. Purchased Off-shore Delivered Services cannot be converted into onsite services, unless NetApp agrees or decides to perform the services onsite. Such changes may have a cost impact and may require a signed Change Request Form to be agreed before commencement;

3. Customer will maintain good and immediate communication with NetApp, specifically on:

   o Personnel changes,

   o Potential changes to IT infrastructure,

7.3 Issues or problems; Customer Responsibilities

The below responsibilities are additional to the general Customer responsibilities, as described in Section 4 above.

1. Customer is responsible and shall bear the costs of obtaining, installing, and maintaining as operational any necessary equipment and or software to assure NetApp a secure electronic connection to the Customer's environment (regardless whether such equipment or software is owned and or maintained by Customer or a third-party);

2. Customer is responsible for providing the necessary assistance to allow NetApp Off-shore personnel to have access to Customer's system(s) in order to perform their activities;

3. Customer is responsible for providing fully privileged access to systems on which the Professional Services will take place via a remote access method, acceptable to NetApp, as required to deliver the Professional Services

4. Customer understands and agrees that by accepting Off-shore delivered Professional Services NetApp Off-shore personnel will require full access to Customer's systems and data in order for NetApp to be able to perform the Professional Services.

5. Customer understand and acknowledges that performance of the Off-shore Delivered Services by NetApp under this SOW may result in Customer providing NetApp and its Offshore personnel access to personal data. NetApp does not need nor request access to personal data in order to provide the Professional Services. Customer accepts sole responsibility and liability for the disclosure and protection of such data to NetApp in accordance with applicable data protection laws. Customer represents and warrants to NetApp that it has obtained all consents and authorizations necessary by virtue of applicable law or otherwise to communicate the personal data to NetApp.

6. As a data controller in relation to NetApp, Customer represents and warrants to NetApp that it has obtained all consents and authorizations necessary by virtue of applicable law or otherwise to communicate and provide access to Customer's systems' and data (which may also include personal data) to NetApp.

7.4 NetApp Responsibilities

The below responsibilities are additional to the general NetApp responsibilities as described in Section 5 above.

1. In the event Customer does provide personal data to NetApp and its Off-shore personnel in accordance with the above section, NetApp will protect all personal data in accordance with its responsibility as a data processor and shall treat all such data as confidential information.

2. NetApp will ensure that Off-shore Delivered Services and NetApp Offshore personnel will comply with any specific security procedures agreed between Customer and NetApp, as well as any applicable data privacy laws and regulations.

8 Schedule of Performance

Estimated Professional Services Start Date: TBD

Professional Services End Date: Project duration is based upon **six (6) consecutive months*** from the actual Start Date

Note: *This covers a total of, but does not exceed, seventy-two (72) days at an average of three (3) days/week over six (6) months.*

The Professional Services End Date is estimated and may require adjustments during delivery.

Commencement of the Professional Services covered by this SOW shall occur after a purchase order is placed and accepted by NetApp, and this SOW has been returned to NetApp duly signed.

Upon execution of this SOW, the parties shall agree on a schedule for the Customer's fulfillment of the prerequisites and NetApp's subsequent performance of the Professional Services.

Customer's non-timely fulfillment of the Customer prerequisites may result in delays in NetApp's performance of the Professional Services and may affect cost, and may lead to NetApp's cancellation of the SOW.

NetApp will use commercially reasonable efforts to complete the Professional Services described in this SOW in a timely manner.

Unless otherwise agreed and defined in this SOW, performance of the Professional Services shall take place during Business Hours[7]. Changes of performance of the Professional Services from Business Hours to Non-business hours[8] will have a cost impact and shall require a signed Change Request Form to be agreed before commencement.

9 Change Control

It may become necessary to amend this SOW for reasons including, but not limited to the following:

1. Changes to the scope of work and/or activities and Deliverables
2. Changes to the project schedule
3. Changes that necessitate additional project management effort
4. Changes to increase Onsite presence

Either party may request changes to the SOW at any time by submitting to the other party a Change Request Form, attached hereto as Appendix 2, following the procedure below:

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[7] Refer to Appendix 1 - Glossary/Generic
[8] Refer to Appendix 1 - Glossary/Generic

The requesting party will submit a Change Request in writing detailing the change, rationale, and estimated effect the change will have.

The NetApp Project Manager and the Customer Project Manager, as appropriate, will review the proposed change of the requesting party and accept, reject, or modify the Change Request. If rejected, the Change Request is returned to the requesting party, along with the reason for the rejection.

Approved changes will be incorporated into this SOW through written modifications that shall be signed by a duly authorized representative of both parties. The approved changes will not be implemented before both parties have signed the Change Request Form.

In the event the change leads to a fee increase, the implementation of the change is contingent upon NetApp's receipt and acceptance of an additional purchase order.

10   Fees

The fees for the performance of the Professional Services under this SOW will be as set out in the quotation between the parties as applicable

11   Exhibit 2 Acceptance; Certificate of Completion

Note: *Acceptance is not required for Exhibit 1 Professional Services which will be provided for the project duration as specified in Section 8. The following applies to Exhibit 2 only:*

11.1   Acceptance Criteria

Once the Deliverables have been provided, Exhibit 2 Professional Services as reflected in this SOW will have finished and will be deemed accepted.

11.2   Notification of Non-Approval

If Customer reasonably believes that NetApp did not complete the Professional Services in substantial conformance with Exhibit 2 of this SOW, Customer will notify NetApp in writing of its specific reasons for rejection of the Professional Services within five (5) business days from delivery of the Certificate of Completion ("CoC") to Customer. NetApp will address Customer's issues and then will re-present the CoC for Customer's execution in accordance with the requirements of this Section 11.

11.3   Certificate of Completion

Once Customer has accepted the Deliverables, NetApp shall present, and Customer shall sign the Certificate of Completion (as attached hereto in Appendix 3). If NetApp does not receive written or electronic confirmation within five (5) business days, the absence of Customer's response will constitute the acceptance of the Exhibit 2 Professional Services provided under this SOW.

11.4   Electronic Acceptance

NetApp, at its sole discretion, may choose to present the Certificate of Completion to Customer via email rather than regular mail or in person. In such cases, Customer may sign and return the Certificate of Completion electronically to NetApp.

12   Applicable Legal Terms

Both parties agree that during the provision of the Professional Services, Resources are not subject to any instructions by the Customer in relation to their core employment rights or obligations, nor do they have the authority to give any such instructions to employees of the Customer.

If the parties have executed a framework agreement, a master purchase agreement, or another agreement incorporating terms and conditions for the provision of the Professional Services specified herein, that agreement shall govern this SOW. However, in the absence of any such agreement, this SOW shall be governed solely by the Professional Services Terms and Conditions effective on the date of execution of this SOW and posted at *https://www.netapp.com/us/how-to-buy/stc.aspx*, NetApp shall provide a copy on request. By signing this SOW, Customer or NetApp Partner, as applicable, agrees to the terms and conditions contained herein.

NetApp may choose to present this SOW via E-Mail (EchoSign) rather than regular mail. In such case the Customer may sign and return this SOW electronically to NetApp.

This SOW has been agreed and accepted on behalf of Customer by:

Customer Approval	
Company Name	Kay Systems Italia SpA
Name	Matteo Viviano
Signature	
Title	Account Manager
Email	Matteo.Viviano@ksi.it
Date	

The date on which the Customer has signed this SOW shall be the Effective Date of this SOW.

And on behalf of NetApp by:

NetApp Approval	
Company Name	NetApp Italia S.r.l
Name	Lionel Leroy
Signature	
Title	PS Director
Email	Lionel.Leroy@netapp.com
Date	

Any previous document covering the scope of work for the Onsite Data Migration Services is hereby suspended.

Instructions: Please return a signed copy of this SOW by Post or Email to: NetApp Italia S.r.l. for the attention of Alberto Padoan. Email: Alberto.Padoan@netapp.com

Exhibit 1

NetApp	Project Scope and Project Limitations
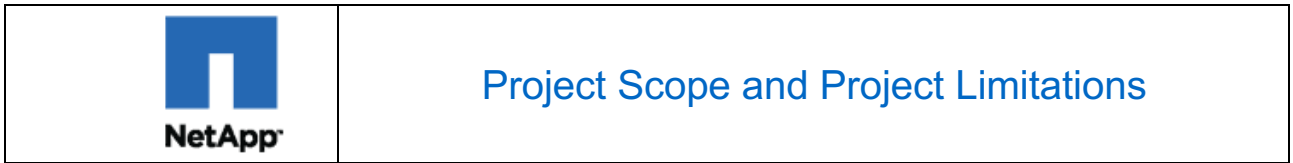
1. Scope of Professional Services

NetApp will provide a dedicated Storage Management Consultant for ONTAP and StorageGRID ("SMC") to perform the Professional Services residency service specified in this SOW. This service will make available an SMC to work onsite or remotely, during normal business hours, for the duration of the Schedule of Performance defined in Section 8. The SMC performs functions assigned and supervised by Customer, including but not limited to the tasks specified in the scope below.

1.1 Professional Services Activities

The Storage Management Consultant for ONTAP and StorageGRID working with the Customer will provide a variety of services to support and train the Customer's storage management team in the management of the NetApp ONTAP and StorageGRID environment as follows:

a. **Cluster Mode Activities**

- Initial Discovery

    The SMC will assist the Customer to:

    - Identify the Customer storage team skills specific to Cluster Mode and identify training still required using NetApp Cluster Mode Training Path and Cfor7 Forum
    - Identify how the Customer is using SAP, ServiceNOW, My AutoSupport, and other tool and knowledge sources to support the Cluster Mode environment
    - Identify the as-built ONTAP and StorageGRID configuration and related available documentation for the Customer's Data Storage Environment
    - Identify tasks to be completed as part of a Cluster Mode Training Path
    - Identify tasks required for managing the Customer's storage Cluster Mode environment

- Skills Mentorship

    The SMC will assist the Customer to;

    - Create a training path for Customer's storage management team using Cluster Mode Training Path and NetApp Cfor7 Forum
    - Track progress for Customer's storage management team against training path
    - Conduct Cluster Mode environment as-built configuration Q&A sessions with Customer's storage management team, referring to documented best practices for Cluster Mode operations. Review storage features new to Cluster Mode (Vservers, LIFs, failover groups)
    - Conduct ad-hoc brown bag Q&A Knowledge Transfer training sessions

        [1]*Note: Knowledge Transfer ("KT") does not replace NetApp University training. KT is delivered as part of the implementation visit and as sessions lasting no more than **two (2) hours**. Customer must have all necessary staff available for the KT session, and such session must occur on or before the Professional Services End Date. It is recommended that Customer take NetApp University classes for more in-depth Cluster Mode training.*

- Cluster Mode Operations

  - Review current alerting and monitoring for the Customer's Data Storage Environment

  - Discuss and agree how software monitoring tools can be integrated, such as OnCommand and MyASUP

  - Assist with NetApp Cluster Mode case reviews

  - Review/check operational and system status using best practices and recommended checks for administering Cluster Mode

  - Discuss and review the management of storage security and permissions in a Cluster Mode environment

  - Discuss and review how to deploy new storage resources in a Cluster Mode environment

- Cluster Mode Consulting Review Sessions:

  - Share approach to performing research and analysis of a Cluster Mode environment for the following areas:

    - Planning new resources

    - Planning to implement new resources

    - Planning for move of existing resources, such as moving VMware to a new location

- Testing

  - Assist with setting up Customer's lab Vserver

  - Assist Customer's storage management team to use lab for testing and Knowledge Transfer[1]

  b. **Standard Resident Activities**

    - Monitoring, reporting, storage resource deployment issues, questions, challenges

    - ONTAP and firmware upgrades and recommendations

    - ActiveIQ Unified Manager ("AIQUM") implementations and upgrades

    - Onsite diagnostics and replacement of hardware components

    - Storage and data management system monitoring using AIQUM

    - NetApp Global Support Center ("GSC") coordination

    - Test planning and execution

    - Participation in regularly scheduled reviews with Customer

    - Documentation of NetApp storage environment

c. **Service Management**

To ensure the highest level of Customer service to the Customer, it is imperative that Customer and all NetApp personnel work within NetApp's currently defined service processes. The SMC will serve as a facilitator between Customer staff and NetApp's Global Support Center ("GSC"). As soon as a problem is identified with a NetApp system that requires resolution, a trouble ticket must be opened with the GSC. The Customer will provide a contact person for every system installed. The GSC and the SMC will use this information to facilitate case resolution.

1.2 Examples of Additional SMC Activities

The following are examples of activities that are within the scope of the Professional Services performed by the SMC:

- Check storage components for availability and completeness

- Perform daily monitoring and diagnostics

- Provide local point of contact details to NetApp for Return Material Authorizations ("RMA"s). The SMC is responsible for obtaining from Customer an up-to-date copy of the local points of contact for Customer's systems. This information is used to provide correct address details for parts shipments. The SMC will handle any parts returns for Customer's NetApp systems

- Serve as an assigned advisor responsible for understanding Customer's Data Storage Environment and representing Customer's support needs to the GSC

- Provide assistance with the NetApp on the Web ("NOW") site and advice on how to best use the site

- Assist with technical support matters in cooperation with a Technical Support Engineer ("TSE") when required

- Coordinate GSC customer service personnel and field resources to solve Customer's problems

- Report on process and product maintenance

- Regularly analyze AutoSupport diagnostic data

- Perform case trend analysis

- Provide proactive service management, including software and hardware release planning and bug analyses

- Analyze software patches and field alerts, and advise Customer as to the appropriate next steps

- Assist with Disaster Recovery ("DR") planning, data archiving planning, and data migration planning

- Analyze Customer needs and recommend additional products and services to meet these needs

- Participate in Customer's weekly change management meetings

1.3 Out-of-Scope Services

The SMC personnel are *not* intended to perform storage systems consulting services. These services are available as additional services.

Examples of other out-of-scope services include:

- Installation and/or implementation of ONTAP cluster

- NetApp University product training

- Storage infrastructure architecture and design

- High availability or performance configurations and testing
- Physical moving of equipment
- Definition and provision of training of storage management operational processes

1.4 Professional Services Performance Parameters

a. SMC Standard Work Week

NetApp will provide Customer with flexibility in regard to the definition and scheduling of the work done by the SMC while preserving a work environment that will be acceptable, sustainable, and growth oriented for the SMC. NetApp's work week for each SMC resource is based upon a pre-scheduled **forty (40) hour week** comprised of **eight (8) hour days** that are scheduled between **Monday and Friday** from **7 a.m. to 6 p.m.** in Customer's local time zone.

b. Non-Work SMC Activities

The SMC will be allowed time for the following activities outside of their work at Customer's location without the requirement for a SMC backup:

- Customer holidays
- Short term sick leave, less than one week
- Paid time off, annual leave
- Professional meetings and conferences
- Professional training

c. Additional Work Requirements

If Customer's work requirements for the SMC exceed a standard, eight (8) hour work day, NetApp will make a commercially reasonable effort to meet those requirements using either the assigned SMC or by using other NetApp contracted PS resources.

The NetApp Project Lead must provide prior written authorization for any SMC resource allocations which:

- Exceed the standard eight (8) hour workday by greater than two (2) hours.
- Are scheduled for work outside of normal, local business hours.

d. Exception for In-Scope Non-Standard Business Hours

    i. During the Schedule of Performance, NetApp will provide a maximum of five (5) non-business days to Customer to provide migration cutover assistance, if required. This will be scheduled with the NetApp Project Lead as mutually agreed.

    ii. In-scope non-standard business hours may only be used to assist with migration activities

    iii. NetApp will provide a Quarterly Non-Standard Business Status Report identifying the dates where the Non-standard Business days have been provided and the remaining balance

    iv. If the additional non-standard business days are not used or required, they will expire with no adjustment to SOW Fees upon completion of the defined Schedule of Performance.

B. Project Specific Assumptions and Customer Responsibilities

The following assumptions are hereby acknowledged by the parties and apply to the performance of the Professional Services in this Exhibit 1.

    a. The fees associated with this SOW are for the services as defined in this SOW and do not include supply of hardware, software, residency, and other services.

    b. NetApp will not be responsible for any application or host system access that encompasses coding, scripting, application analysis, system performance, troubleshooting, or applications logins outside of the Services described in this Statement of Work.

    c. NetApp reserves the right to change the resource by giving Customer two (2) weeks advance notice and replacing the resource with an appropriately skilled replacement resource

    a. Exhibit 1 scope of work is limited to the Professional Services described in this SOW Exhibit 1.

C. Project Exclusions / Out of Scope Activities

Project exclusions are any items that are not expressly included in this Exhibit 1 and include the items below.

1.1   Data Migration Services

    a. NetApp is responsible for performing only the services expressly described in this Exhibit 1. Services outside the scope include, but are not limited to the following:

        i. Project management of Customer's resources and third parties not engaged by NetApp

        ii. This Exhibit 1 applies to Professional Services only. Hardware, software and third-party licenses requested or needed by the Customer in relation to the Professional Services are specifically excluded from this engagement

        iii. Physical relocation of equipment

        iv. Documentation of non-NetApp components

        v. Third party management

Exhibit 2

![NetApp logo]	Project Scope, Deliverables, and Project Limitations

PS Service Commencement Criteria

Prior to the start of the Professional Services listed in the SOW, the following items must be performed. If these items are not performed prior to the Estimated Professional Services Start Date, a Change Request may be required to adjust the Schedule of Performance, Project Schedule, and/or SOW Fees.

- Customer's Data Storage Environment should be qualified to meet the NetApp minimum requirements specified by NetApp's Interoperability Matrix Tool ("IMT"). If it is out of compliance, it may impact the Schedule of Performance and/or SOW Fees. Any system not specifically identified as within the scope of this project will be considered out of scope.

- Standard installation of any required Customer Equipment should be completed prior to PS commencement

- will provide existing data storage layout and storage utilization, host connectivity, volume and/or LUN size and layout presented in an MS Excel format

- Customer will confirm with NetApp that no scoping parameters have changed prior to PS commencement

    Note: Each PS Service Completion Criteria is met when: (1) any defined PS Service Project Limitation is met, or (2) above Activities and Tasks are complete prior to reaching a PS Service Limitation, whichever occurs first.

A. Activities and Tasks

As part of the Professional Services, NetApp will perform the following activities and tasks. In the event that there are multiple PS Services, the Project Schedule may reflect any scheduling integration of the PS Services. The execution of this project will be subject to the limits defined in the applicable scope below.

1.   Project Management

NetApp project management services will be provided during the Schedule of Performance to manage the delivery of all NetApp tasks identified in the Scope of Work.

1.1   Project Kickoff

1.1.1   The NetApp project manager will conduct a kickoff meeting to include Customer and NetApp resources in order to:

a. Present and review project scope, expectations, deliverables, timelines and responsibilities/availability of the parties

b. Coordinate all aspects of planning and consulting

c. Initiate requests for information from Customer and identify timelines for completion, as required

d. Review Project Change Request Process

1.2   Project Schedule and Updates

1.2.1 Develop a detailed Project Schedule outlining tasks and dates that are agreeable to both NetApp and Customer. The Project Schedule will include a delivery schedule, and may contain resource planning, critical path determination, task durations, implementation checklists and milestones.

1.2.2 Update the Project Schedule, as required, during Project Initiation or during the Schedule of Performance. During Discovery, NetApp will confirm or invalidate assumptions, as required. Any extension of the Professional Services for any reason other than delays caused solely by NetApp may require an increase in the Fees. If a revised Project Schedule is required, NetApp will conduct a review with Customer's entire functional team.

1.2.3 Coordinate regular project status updates, as required

1.3 Project Resources

1.3.1 Determine required staffing level and Subject Matter Experts ("SMEs") to complete the project as described in this document. NetApp will review its staffing levels with Customer.

1.3.2 Determine escalation points of contact within Customer's organization

2. Project Initiation Phase

2.1 Conduct a kickoff meeting with Project Lead(s) to:

2.1.1 Confirm and validate scope, approach, and deliverables

2.1.2 Confirm roles and responsibilities

2.1.3 Define engagement escalation process

2.1.4 Establish status update process and meeting plan

2.1.5 Discuss project requirements and assumptions

2.1.6 Schedule technical discovery and data collection activities as specified in the Discovery and Design Phase activities

2.1.7 Schedule onsite activities

2.2 Create an initial Project Schedule itemizing: key activities, critical path dependencies, and milestones with target completion dates

3. PS Service - Data Migration – NAS

3.1   Project Limitations

Base Category	Base Limits
Max number of systems	4
Max TB of data to migrate	70
Max number of shares and/or export	4
Max number of cutovers (not to exceed)	4
Max hours per cutover	8
Provide post migration days of support per cutover	1

Note. *If Customer has work that must be performed outside this time frame, Customer will notify NetApp at least five (5) business days in advance in writing so that resources may be scheduled accordingly. Customer does not plan on incurring overtime under this SOW and will provide compensatory time if any overtime is worked. However, if at any time, Customer exceeds the normal daily or weekly hours without scheduling compensatory time off, Customer and NetApp Project Leads will review the Professional Services schedules to determine if a Change Request should be initiated to address the additional effort undertaken by the SMC.*

3.1.1   Conduct discovery and assessment phase migration service overview with Customer

3.1.2   Perform non-technical discovery

3.1.3   Perform technical discovery

    a.   Determine the current state of the source systems

    b.   Collect inventory and performance metrics to determine existing environment and target capabilities and to provide a baseline

3.1.4   Analyze discovery data collected

    a.   Compile and review discovery data, then validate information is aligned to tool, process, and technology

    b.   Identify specific methods for migration based upon data present

    c.   Procure appropriate tool licensing as defined by migration tool decisioning and scope of data to be moved

3.1.5   Finalize list of Customer's Equipment source and target systems which are in scope

3.2   Design Phase

3.2.1   Develop Migration Runbook for NetApp resource team

3.2.2   Assess migration requirements

    a.   Discuss interoperability and feature differences between source and target systems

    b.   Confirm management access for source and target systems

    c.   Confirm proper access through firewalls

3.2.3   Develop target Data Migration Plan document (e.g. from-to design) which may include:

    a.   Map specific source data to migration method

    b.   Ensure deployed configuration complies with Customer's data management policies and lifecycle

    c.   Define backup, DR relationships, and design plan for implementation if applicable and within project scope

    d.   Define migration groups and policies for specific business unit needs. (e.g. Production, Dev/Test, Revenue Generating, Non-Prod)

    e.   Determine datasets to be migrated and designate priority of each dataset with Customer

3.2.4   Develop Transition Plan (e.g. Runbook) for NetApp resource team

    a.   Meet with Customer to discuss Implementation, migration tool insertion into Customer environment, scheduling of cutover windows, expected data mobility schedules, and any host remediation that needs to occur prior to migration

    b.   Work with Customer to finalize Migration Design Summary document, cutover groups, and outage windows

    c.   Determine and document potential Interoperability Matrix Tool ("IMT") issues (i.e. HBA, server OS versions, permissions) communicated to Customer

3.2.5   Finalize Data Migration Plan document

3.2.6   Create As-Built drawings - architectural documents and diagrams

3.2.7   Meet with Customer to discuss implementation, prerequisites, and scheduling

3.2.8   Identify primary protocol for each source CIFS filesystem

3.3   Implementation Phase

3.3.1   Validate provisioned infrastructure for transition

    a.   Acquire appropriate Customer virtual machines for tool deployment

    b.   Deploy migration tool application as identified in the Data Migration Plan

    c.   Verify credentials are properly implemented

3.3.2   Configure target system as per agreed design

    a.   Confirm management network and service port access

    b.   Ensure that performance monitoring tool is operational/functional

3.3.3   Connectivity Integration

    a.   Confirm implemented tools are capable of communicating with all source and target devices as needed

    b.   Create test volume and test data transfer

    c.   Validate transfer performance

3.3.4   Perform User Testing Migration

    a.   Create Test Plan

    b.   Initiate test migration to confirm appropriate activity/performance with Customer data

    c.   Perform a cutover of the test data

    d.   Test for completion of cutover through host and application access of data on target

    e.   Validate completion of migration

    f.   Where applicable, ensure that efficiency (e.g. compression/dedupe) operations have been completed

    g.   Confirm with Customer that cutover is complete

3.3.5   Establish baseline transfers and monitor

    a.   Initiate monitoring of data transfer rates for migration groups and establish baselines.

b. Continue ongoing monitoring to ensure data is being kept in sync. (Note: Implementation may require pausing some migration groups. This is to speed up data transfer of closer pending cutovers to meet Project Schedule timelines while working with Customer's bandwidth with the Customer's environment.)

c. Initiate monitoring of jobs within migration tool for errors

3.3.6   Customer will ensure that incremental data backup is performed prior to cutover event for the Customer data which will be migrated.

3.3.7   Execute cutover and configuration updates, as required

3.3.8   Confirm monitoring and management is operational

3.3.9   Customer is required to validate NAS client access to data

3.4   Post Migration Support

3.4.1   NetApp will provide post-migration support for two (2) days immediately following the data migration during the Schedule of Performance

3.4.2   Deinstall temporary migration tool(s) upon completion prior to Project Closeout Phase

3.5   Completion Criteria

3.5.1   Each PS Service Completion Criteria is met when: (1) any defined PS Service Project Limitation is met, or (2) above Activities and Tasks are complete prior to reaching a PS Service Limitation, whichever occurs first.

4.   PS Service - SnapMirror / Replication / DR Design and Implementation

4.1   Project Limitations

Category	Limit
Number of new SnapMirror relationships	1
Test datasets	1

4.2   Discovery Phase

4.2.1   Determine what data to SnapMirror

4.2.2   Review data availability SLA requirements - Recovery Time Objective ("RTO") and Recovery Point Objective ("RPO") for each data set and corresponding recovery priorities

4.2.3   Determine the overall backup scheduling requirements and Customer usage patterns

4.2.4   Evaluate existing Disaster Recovery ("DR") environment

4.2.5   Review with Customer the Rate of Change ("ROC") for each data set

4.2.6   Review any application dependencies for DR

4.3   Design Phase

4.3.1   Describe recommended use of SnapMirror with a design layout of the solution

4.3.2   Develop a recovery design addressing:

      a. Schedule for replication from primary systems to remote NetApp storage using SnapMirror

      b. Recommendations on how to integrate the DR solution with ActiveIQ Unified Manager ("AIQUM") server

      c. Network and other NetApp storage-related configuration settings

4.4   Implementation Phase

    4.4.1   Implement and register SnapMirror license on source and target DR storage controller

    4.4.2   Create SnapMirror volumes on the target DR storage controller per agreed design

    4.4.3   Configure SnapMirror configuration files with relevant source and target information on the target DR storage controller

    4.4.4   Set up the SnapMirror schedule and relationships per agreed-to schedule

    4.4.5   Activate SnapMirror on both the source and the target DR storage controller

    4.4.6   Transfer baseline SnapMirror data to SnapMirror volumes on the target DR storage controller

    4.4.7   Knowledge Transfer

      a. Provide a two (2) hours Knowledge Transfer ("KT") session to review CVO/OCCM (Cloud Volumes ONTAP/ OnCommand Cloud Manager)

4.5   Test Phase

    4.5.1   Verify that data is successfully replicated to destination controller

    4.5.2   Complete failover/failback testing to ensure that changes made during failover operation are transferred back to the source

4.6   Completion Criteria

    4.6.1   Each PS Service Completion Criteria is met when: (1) any defined PS Service Project Limitation is met, or (2) the above Activities and Tasks are complete prior to reaching a Project Limitation, whichever occurs first.

5.   PS Service - NetApp StorageGRID v11.3 Expansion - New Site

5.1   Project Limitations

Category	Limit
StorageGRID Expansion base	1
# of new sites to be added to existing GRID	0
Total # of Storage nodes being added	0
# of Admin Nodes being added	0
# of Gateway Nodes being added	2
Total # of Admin Nodes and Gateway Nodes being added	2
# of site(s) using Linux Hosts	0
Applications for StorageGRID Integration & Testing	0
Total number of Advance Features	0
# of NAS Bridges	0

# of FabricPools	0
Integration with AWS notification	0
Archive node integration with IBM Spectrum Protect (TSM)	0
Cloud Tiering to Public cloud	0
Metadata integration with Elastic search	0
Integration with AWS notification	0
Cloud mirror replication	0

5.2 Planning and Discovery Phase

5.2.1 Meet with Customer to review existing GRID topology and state

5.2.2 Customize installation workbook. Meet with Customer to fill in workbook.

5.2.3 Review completed installation workbook. Make necessary changes.

5.2.4 Review virtualized or Linux host requirement with Customer, if applicable

5.2.5 Review discovery findings with Customer

5.2.6 Review and customize the Test Plan with Customer

5.3 Design Phase

5.3.1 Review GRID Design, including GRID and network topology, storage, and ILM requirements

5.3.2 Validate IMT requirements for infrastructure. Provide requirements to Customer team.

5.4 Implementation Phase

5.4.1 Prepare the Linux host per site for docker container Storage Nodes

5.4.2 Configure and deploy Storage Nodes (SGA or non-SGA)

5.4.3 Deploy Gateway Nodes and Admin Nodes (if applicable)

5.4.4 Provision the GRID

5.4.5 Configure archive nodes with IBM Spectrum Protect

5.4.6 Configure StorageGRID cloud tiering to Public Cloud

5.4.7 Provide basic configuration

5.4.8 If applicable, configure new storage pool and new information Lifecycle Management ("ILM") policy after expansion

5.4.9 Highlight features concerning advance configuration - cloud mirror replication

5.4.10 Highlight features concerning advance configuration - integration with AWS notification

5.4.11 Highlight features concerning advance configuration - metadata integration with Elastic search

5.4.12 Configure FabricPool(s) on new or existing AFF ONTAP 9.x node and integrate with StorageGRID

5.4.13 Configure and test NAS bridges

5.5 Test Phase

5.5.1 Validate new nodes and NetApp StorageGRID functionality after expansion. Perform basic S3 testing using S3 browser and ILM policy verification.

5.5.2 Assist Customer with application integration test as per Test Plan and document the result in the Test Plan

5.6 Completion Criteria

5.6.1 Each PS Service Completion Criteria is met when: (1) any defined PS Service Project Limitation is met, or (2) the above Activities and Tasks are complete prior to reaching a Project Limitation, whichever occurs first.

6. PS Service - Cloud Volumes ONTAP Deployment

6.1 Project Limitations

Category	Limit
First Cloud Volumes ONTAP single node instance	1
Additional CVO instances	0

6.2 Discovery Phase

6.2.1 Provide Cloud Volumes ONTAP technology overview to Customer

6.2.2 Verify Customer solution (BYOL or 1-Click Order)

6.2.3 Complete Cloud Volumes ONTAP Pre-Installation Questionnaire

6.2.4 Determine performance requirements

6.2.5 Determine network requirements

6.2.6 Determine cloud requirements

6.2.7 Determine monitoring and additional security requirements

6.2.8 Determine Data Fabric Peering requirements (on-prem/NPS)

6.3 Design Phase

6.3.1 Review and validate the NetApp Cloud Volumes ONTAP Customer Deployment Checklist

6.3.2 Review and validate cloud configuration options

6.3.3 Review the NetApp Cloud Volumes ONTAP deployment requirements

6.3.4 Create a Solution Design Document; review with the Customer and obtain approval.

6.3.5 Refine design and revise solution design

6.3.6 Schedule implementation and configuration tasks for the engagement with Customer

6.4 Implementation Phase

6.4.1 Configure the cloud environment

6.4.2 Test networking between the cloud environment and on-premises resources

6.4.3 Configure cloud settings, including cloud credentials and licenses

6.4.4 Validate Active Directory connectivity (if SMB is used)

      6.4.5   Deploy OnCommand Cloud Manager and fully test network connectivity

      6.4.6   Deploy Cloud Volumes ONTAP via OnCommand Cloud Manager

      6.4.7   Configure protocols and networking for Cloud Volumes ONTAP

      6.4.8   Create SMB share and/or NFS export to finalize storage connectivity test

      6.4.9   Configure Email Alerts or Simple Network Management Protocol ("SNMP")

      6.4.10   Configure enhanced security

      6.4.11   Configure Data Fabric Peering

          a.   Verify connectivity to peered network

          b.   Verify all connectivity to Data Fabric connected ONTAP Systems

6.5   Completion Criteria

      6.5.1   Each PS Service Completion Criteria is met when: (1) any defined PS Service Project Limitation is met, or (2) the above Activities and Tasks are complete prior to reaching a Project Limitation, whichever occurs first.

7.   Project Closeout Phase

7.1   Review Project Deliverables with Customer

7.2   Obtain Customer sign-off on Certificate of Completion for project acceptance

B. Deliverables

In connection with the Professional Services, NetApp will provide the following tangible materials (the "Deliverables") to Customer in a format or method mutually agreed upon between the parties:

1.   PS Service Data Migration - NAS

      a.   As-Built drawings

      b.   Data Migration Plan

      c.   Test Plan

      d.   Migration Runbook

      e.   Transition Plan (e.g. Runbook)

      f.   Migration Design Summary

2.   PS Service - NetApp StorageGRID Expansion - New Site

      a.   StorageGRID Installation Workbook

      b.   Test Plan

3.   PS Service - Cloud Volumes ONTAP Deployment

      a.   Solution Design Document

4.   Project Closeout

      a.   Certificate of Completion

C. Project Specific Assumptions and Customer Responsibilities

The following assumptions are hereby acknowledged by the parties and apply to the performance of the Professional Services.

1. **General**

   a. Knowledge Transfer ("KT") does not replace NetApp University training. Customer must have all necessary staff available for the KT session, and such session must occur on or before the Professional Services End Date defined in Section 8. The KT will be delivered as **one (1) session** lasting no more than **two (2) hours**.

2. **PS Service – Data Migration Services - NAS**

   a. Customer's IP cabling is complete prior to commencement of these Professional Services

   b. All Professional Services will be delivered during normal business hours except where agreed upon in advance

   c. Customer will not adjust agreed Project Schedule cutover dates without two (2) weeks advance notice to NetApp. Changes to agreed Project Schedule with less than the required advance notice result in additional rework effort and will require a new purchase of Time and Materials (T&M) days.

   d. Customer is responsible for making the decision to finalize cutover to production

   e. Customer is responsible for testing their pre-migration data and for accessing their pre-migration data to confirm its pre-migration data integrity

   f. Customer is responsible for testing their post-migration data and for accessing their post-migration data to confirm its post-migration data integrity

   g. Customer is responsible for all necessary data backup in preparation for and throughout the performance of the Professional Services to enable data restoration, if required

   h. Customer is responsible for connectivity and environmental requirements

   i. NetApp may provide Customer with temporary tools for data migration during the Schedule of Performance. These tools will remain the property of NetApp; Customer is not entitled to use these tools for any purpose outside the scope of this project. NetApp will de-install the tools prior to the End Date of the engagement.

   j. NetApp will provide Customer with temporary licenses for data migration software during the Schedule of Performance. These licenses will remain the property of NetApp. Customer is not entitled to use these software features for any purpose outside the scope of this project. NetApp will de-install the software prior to the End Date of the engagement.

   k. NetApp has no obligation to provide support or maintenance in relation to any scripts created in the performance of Professional Services. Any and all future activity for trouble shooting, addition, or changes requested after Customer's acceptance of the Professional Services in accordance with the terms of the Service Brief must be requested in writing by Customer and will be billed at NetApp's then-current time and materials rate.

   l. Exhibit 2 scope of work is limited to the Professional Services described in this Exhibit 2 and is separate from the SMC scope of work described in Exhibit 1.

3. **PS Service - NetApp StorageGRID v11.3 Expansion - New Site**

a. All Professional Services will be performed during normal business hours

b. Customer is responsible for preparing all Linux host(s) prior to NetApp StorageGRID installation. Customer preparation includes Linux OS installation, network, storage and SAN multipath (MPIO) configuration.

c. System testing will be done in a non-production environment prior to rollout in a production environment

d. Customer has obtained all of the required software distributions and licenses as required for this specific project

e. NetApp is not responsible for:

    i. Server rack/stack and configuration unless NetApp gear is purchased

    ii. Virtualization and network infrastructure setup and configuration but may provide advice on best practice

    iii. Preparation of Linux hosts for non-VMware deployment platform. Customer must prepare the Linux host's operating system, network and storage as per the NetApp StorageGRID installation guide for RHEL/CentOS or Ubuntu/Debian. All NetApp StorageGRID guides can be downloaded from NetApp support site.

    iv. Client applications

    v. Legacy data migration

    vi. Cabling of E-Series or NetApp StorageGRID appliance storage enclosure to network switch

    vii. Cabling of ESX or Linux hosts to network switch

    viii. Design and implementation of "test" environments

    ix. Installation and configuration of network switch

f. NetApp and Customer will provide a contact who will be responsible for coordinating and managing obligations under this scope of work

g. NetApp will submit written status reports on the Professional Services being performed under this scope of work as necessary and mutually agreed upon by Customer and NetApp

h. Professional Services defined herein will be delivered onsite or remotely

i. The entirety of NetApp's obligations is set forth in the scope of work

j. Customer will provide access to application specialists, if necessary

k. Customer will be responsible for the submission of all change control processes to their change management system

l. NetApp will provide assistance to the Customer with the integration of NetApp supported APIs, tools, and services as integration points to Customer application(s). The Customer is responsible for maintaining all non-NetApp applications, tools, and Customer-written code and scripts.

D. Project Exclusions / Out of Scope Activities

Project exclusions are any items that are not expressly included in this document and include the items below.

1. PS Service – Data Migration Services - NAS

    a. Deployment and Advanced Configuration

    b. Application integrations

    c. Managed operational services

    d. Any third-party product migration tools

    e. Updating or providing automation scripts

    f. Migration to a SAN, object, or cloud platform

    g. Potential scope add-ons will be handled in accordance with Section 9 Change Control

2. PS Service - NetApp StorageGRID v11.3 Expansion - New Site

    a. Overall program management

    b. Data migration or data ingest

    c. Any work involving systems unrelated to NetApp StorageGRID software

    d. NetApp University training

    e. Installation and troubleshooting of SAN/NAS networking

    f. Building of ESX hosts or Linux hosts (if running on non-VMware environment) for GRID nodes

    g. Installation and configuration of switch or cabling to switch from host or server

    h. Network infrastructure (however, NetApp may advise on best practices)

    i. Installation and advanced administration training

    j. Any testing beyond the assistance with the Test Plan

    k. End user application integration

    l. Any services not specifically agreed upon in the design

    m. Any work not included in the above scope or involving systems unrelated to this service offering

    n. Basic hardware and software installation services outside the scope of this engagement

    o. Relocation of Customer Equipment

    p. Troubleshooting pre-existing scripts not written or owned by NetApp

    q. Writing or managing third party tools or code

    r. Installation and configuration of additional software not required for this service offering

    s. Any application or data migration efforts are excluded unless explicitly included in the delivery of this service

    t. Any development of automation routines that fall outside of the offerings of this service or agreed upon requirements

    u. Physical installation of NetApp storage systems, which is available as part of SupportEdge (either Prestige or Premium) or can be purchased separately

    v. Architecture and design services for third party or internal applications

    w. Architecture and design services for virtualization infrastructure

    x. Any upgrade assistance with operating systems, driver Installs, or other components outside the NetApp domain

    y. Installation and troubleshooting of IP networking equipment

    z. ESX host installation and configuration

aa. Execution of performance and/or stress tests

bb. Configuration of advanced host access control

cc. Configuration of the storage network and/or SAN zoning

dd. Installation and application server builds

ee. Server rack and stack and configuration

ff. Network bandwidth evaluation, performance and tuning, and requirements definition

gg. Testing of existing backup and restore procedures or development of a business continuity strategy

hh. Tuning of network parameters of host bus adapter ("HBA")

ii. Integration and testing of 3rd party applications is not included in this scope of work. If integration with 3rd party applications is required, a separate quote will be required in accordance with Section 9 Change Control procedures.

3. PS Service - Cloud Volumes ONTAP Deployment

a. Any work involving systems unrelated to NetApp Cloud Volume ONTAP software

b. NetApp University training

c. Installation, configuration and troubleshooting of SAN/NAS networking, either on-premises or in the cloud

d. Network infrastructure (however, NetApp may advise on best practices)

e. Any services not specifically agreed upon in the design

f. Any work not included in the above scope or involving systems unrelated to this SOW

g. Basic hardware and software installation services outside the scope of this engagement

h. Implementation or configuration of infrastructure services such as Active Directory and DNS in the cloud

Appendix 1

	Glossary
NetApp logo	

Generic	
Statement of Work (SOW)	A statement of work is a document detailing the activities to be performed and for which the contract has been agreed
Scope	The boundaries of a described package of activities. These can be functional, time based, detailed outcomes or otherwise.
Deliverable	A document, delivered by, or on behalf of, NetApp describing a defined part of the Scope
Offshore	Offshore Delivered Services are Professional Services performed by NetApp resources, which may be located in a different country than the location of the Customer's data center(s).
Onsite	The location of Customer's data centre or offices, or NetApp offices in the country of delivery
Resource	The whole of people, software, hardware, tools etc. that is required to deliver the Services
Business Hours	Monday through Friday between 8:00 a.m. and 6:00 p.m., local Customer time
Non Business Hours	Weekends and weekdays after 6:00 p.m. and before 8:00 a.m. local Customer time and public holidays applicable in the relevant country
Performance Site	The address of one or more of the main locations where the described work activities will be carried out.
Scripts	The whole of shell scripts, bespoke software, workflows are NetApp Professional Services Materials tools provided to enable Customer to automate a specific task
Milestone	An agreed moment in the delivery of the Professional Services where a measurable amount of work has been delivered. This is often described in the Deliverables connected to the Milestone
Certificate of Completion (CoC)	A formal document with which both parties agree that the Service, as described in the SOW is completely delivered.
Workshop	A workshop is a scoped activity used to confirm or gather information required to complete a specific, technology focused design document.
Temporary NetApp Equipment	This is temporary storage to temporarily supplement Customer's storage to enable PS delivery and assist in migrating data onto NetApp platforms.
Downtime	A specified period during which a 'Professional Service' will not be available.
PS Service	A description of an activity for a specific project, topic or outcome.
Discovery	A topic specific information gathering activities with Customer.
T&M	A specific form of contract where the sole deliverable is 'time'. These services are performed will be invoiced per the duration of the Professional Services purchased.
Migration Cutover	A single cut-over is defined by the data that can be validated, remediated, cutover and tested to UAT in a single non-business day (8-hour outage window) taking into account the time to verify the migration.
CFFP	A specific form of contract where the Professional Services performed will be invoiced per agreed and reached Milestone or after completion and acceptance.

Technology	
Target System	The Target System is identified as the final end-state destination of the data
Source System	The Source System is identified as the starting location of the data.
Migration Event	A Migration Event is defined as the activities required to migrate a chosen set of data and perform a cut-over of that data from the Source System onto the Target System.
7MTT	7-Mode Transition Tool
ASUP	AutoSUPport, the information the NetApp controllers collect about the system
CBT	Copy Based Transition, the whole of methods to transition data from the Source System to the Target System whereby the data is actually duplicated
CFT	Copy Free Transition, a method to transition from 7-mode to ONTAP where the data does not need to be moved from the Source System to the Target System
IMT	Interoperability Matrix Tool, a Resource from NetApp that verifies the hardware/software compatibility of the various connected systems (including hosts, switches etc.)
NAS	Network Attached Storage
OPM	OnCommand Performance Manager
OCUM	OnCommand Unified Manager
ONTAP	The name of the NetApp storage operating system, specifically for FAS-, AFF- and A-series systems
Element OS	The name of the NetApp storage operating system, specifically for SolidFire systems
SANTricity OS	The name of the NetApp storage operating system, specifically for E-series systems
SAN	Storage Area Network
Protocol	The definition of the language with which computer systems communicate. Well known protocols are NFS, CIFS (SMB), FCP, iSCSI. FCoE

Appendix 2

	Change Request Form

Change Request Number	Customer Name	

Request by: [Customer / NetApp]	Project Name	

SOW Number	SO / line # and PSA Project Number	Submittal Date

Impact Assessment	
Schedule Impact	Yes/No
Cost Impact	Yes/No
Terms Impact	Yes/No

Description of Change

Approvals	
This request is ☐ Approved ☐ Rejected	If rejected, state reason:
Customer	NetApp
Signed:	Signed:
Name:	Name:
Title:	Title:
Date:	Date:

Appendix 3

	Exhibit 2 **NetApp Certificate of Completion**

Company Name	NetApp Sales Order and Line Number	
Contact Name	**NetApp Project Manager**	
Service Delivery Address	**SOW Reference**	**PSA Project Number**
Customer Purchase Order Number	**Project or Service Name**	
Are all of the Services and Deliverable for this entire Sales Order complete?		Yes/No
Are all of the Services and Deliverables for this entire SOW and executed Change Request complete?		Yes/No

PS Part Number	Sales Order Line	Description of Service	Complete Yes/No

Acknowledgment by duly authorized representatives of both Parties:			
Signature/email acceptance of this form. Customer acknowledges that the Professional Services and Deliverable as mentioned above were rendered.			
Customer Signature	**Date**	**NetApp Italia S.r.l Signature**	**Date**
Customer Name (Print)		**NetApp Name (Print)**	
Title (Print)		**Title (Print)**	

Instructions: All Certificates of Completion should be returned to the NetApp contact or Project Lead by regular mail or fax. In the event this email is sent to you by email, you may also reply to the original.

AFF A300 Tech Spec

NetApp

All Flash FAS (AFF) A300

- 3U enclosure

AFF A300 Overview

- Significant performance increase over AFF8040

- Based on latest Intel Broadwell-DE 16-core processor

- 40GbE and 32Gb FC host support

- Full 12Gb/sec SAS connectivity expansion storage shelves

- Supports NetApp® MetroCluster™ FC-VI connections with onboard UTA2 ports
  - No need to consume a slot for FC-VI
  - Slot-based FC-VI still supported

 NetApp

Introducing the AFF A300

HA pairs

- 60-150% more random IOPS versus AFF8040
  - CPU cores: 32 (2x more than AFF8040)
  - Memory: 256GB (4x more than AFF8040)
    - 16GB used for NVMEM

- Onboard I/O ports (per controller)
  - 2x 10GbE: Cluster Interconnect
  - 4x UTA2 (16Gb FC or 10GbE): Host connectivity
    - Can also be configured to also support 1GbE
  - 4x mini-SAS HD: External storage attachment
    - DS224C and DS2246 shelves supported
  - 2x 10GBase-T: Host connectivity
  - 2x PCIe slots
  - 1x Type micro-B USB console port: 115k baud rate
  - Type-A USB port: Read-only for netboot and OS update

- Persistent write log
  - NVlog written to flash if unplanned power loss occurs

NetApp

AFF Systems at a Glance: A-Series and 8000 Series

	AFF8020	AFF A200	AFF8040	AFF8060	AFF A300	AFF8080	AFF A700s	AFF A700
Form factor	3U	2U[1]	6U	6U / 12U[2]	3U	6U / 12U[2]	4U[1]	8U
CPU cores	12	12	16	32	32	40	72	72
Physical memory	48GB	64GB[3]	64GB	128GB	256GB[3]	256GB	1024GB	1024GB
Max drive count	240	144	384	480	384	384 / 480	216	480
NVMEM / NVRAM	8GB	8GB	16GB	16GB	16GB	32GB	32GB	64GB
Onboard / Pre-Configured Ports								
32Gb FC	-	-	-	-	-	-	0 or 8[4]	-
40GbE	-	-	-	-	-	-	0, 4, or 12[5]	4 or 8[6]
10GbE	4	4	8	8	4	8	0, 16, or 24[5]	-
UTA2	4	8	8	8	8	8	-	-
10GBase-T	-	-	-	-	4	-	-	-
1GbE	4	-	8	8	-	8	-	-
SAS	4 (6Gb)	4 (12Gb)	8 (6Gb)	8 (6Gb)	8 (12Gb)	8 (6Gb)	8 (12Gb)	8 (12Gb)
I/O Expansion Slots	4	-	8	8 / 24[2]	4	6 / 24[2]	0 or 4[4]	16
Data ONTAP® support	8.3+	9.1RC2+	8.3+	8.3+	9.1RC1+	8.3+	9.1GA+	9.1RC2+

NetApp

Cluster Node Limits

Homogeneous Clusters Maximum Cluster Nodes	NAS	SAN
AFF A300	24	12

Heterogeneous (Mixed) Clusters[1] Maximum Cluster Nodes	NAS	SAN
AFF A300, FAS8200 AFF A700s, AFF 700, FAS9000 AFF A200, FAS2650, FAS2620 AFF/FAS8020 | 8040 | 8060 | 8080 EX FAS/V6210 | 6220 | 6240 | 6250 | 6280 | 6290	24	12
FAS2552, FAS2554 FAS/V3220 | 3250 | 3270	8	8
FAS2220, FAS2240	4	Not Supported

NetApp

Aggregate and Volume Sizes

	AFF A300
Maximum number of volumes	1,000
Maximum aggregate size	800 TiB[1]
Maximum volume size	100 TiB
Minimum root aggregate size	430 GB
Minimum root volume size	350 GB

NetApp

Shelf Configuration Changes

- AFF A300 systems require a minimum of 12 SSDs

- Up to two shelves of SSDs per HA pair are assigned to controllers and configured on new systems
  - Root-data-data (RD2) partitioning is applied on up to 48 SSDs

- Additional shelves will not have shelf IDs set
  - All contained SSDs will be unassigned

- Default NetApp® ONTAP® behaviors
  - ONTAP will set "soft" shelf IDs using shelf serial numbers if it detects conflicts
  - AFF auto-assignment policy will be applied on bootup to SSDs in full shelves (24-drives shelves)
  - Shelves with fewer than 24 SSDs will require manual assignment of drives

■ NetApp

Supported SSDs and External Storage Shelves

External expansion storage

- DS224C storage shelf: 12 or 24 drives
  - Non-NSE: 960GB, 3.8TB, 7.6TB, 15.3TB
  - NSE: 800GB, 3.8TB
  - 6-drive packs are also available

- DS2246 storage shelf: IOM6 or IOM12
  - Non-NSE: 400GB, 800GB, 1.6TB, 3.8TB
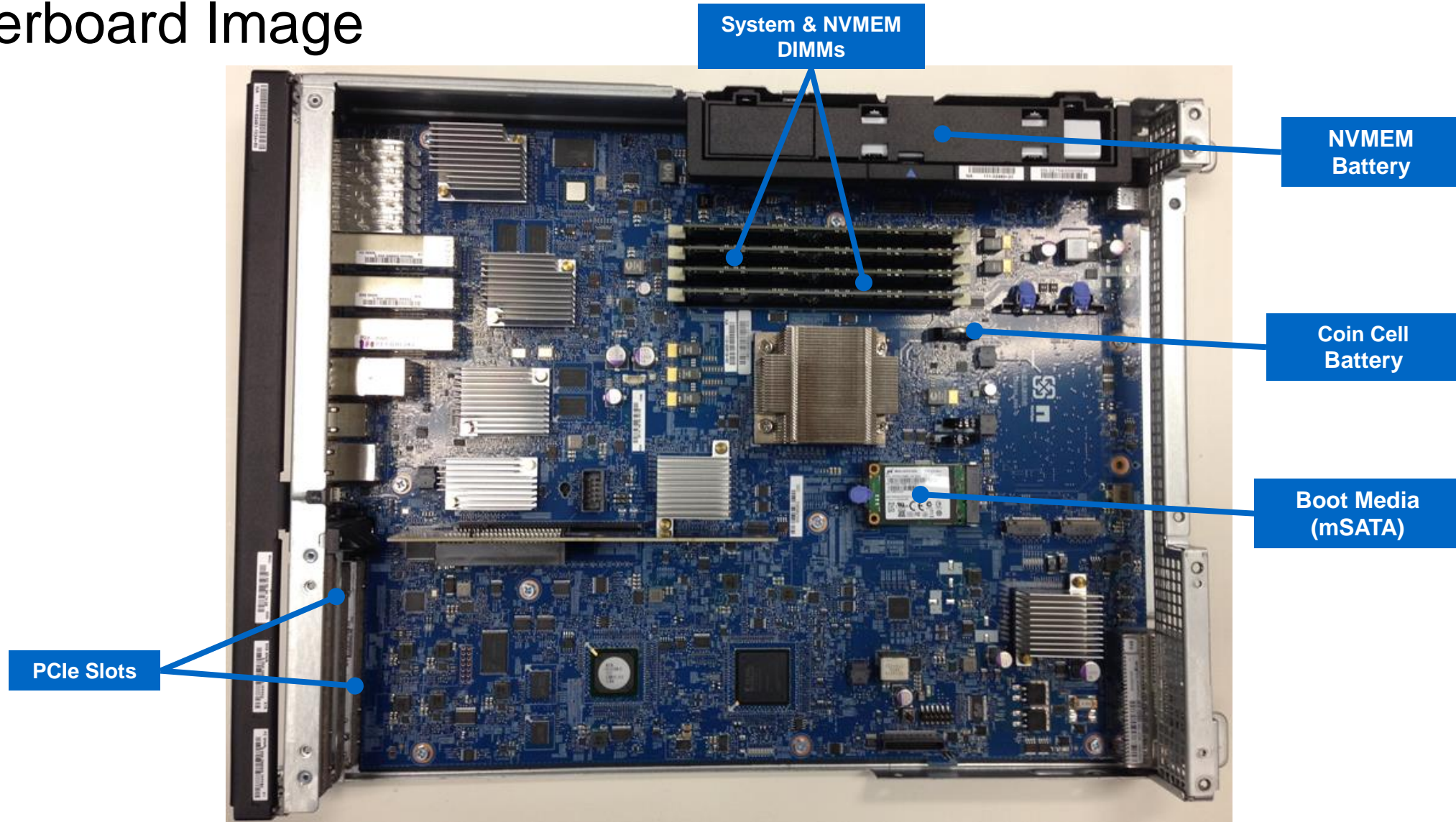 - NSE: 800GB, 1.6TB, 3.8TB

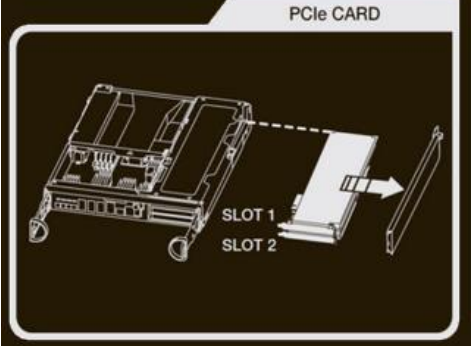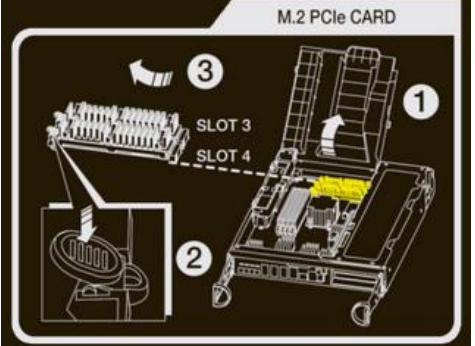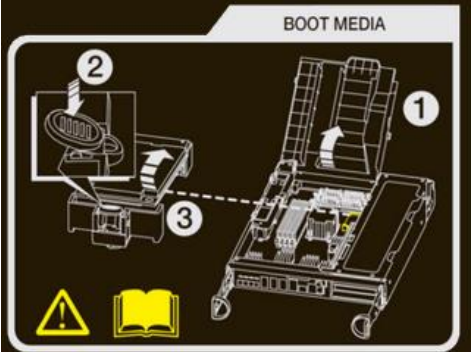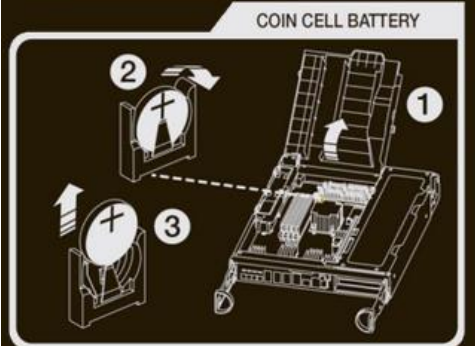**NetApp**

AFF A300 HA configuration

AFF A300 Controller I/O
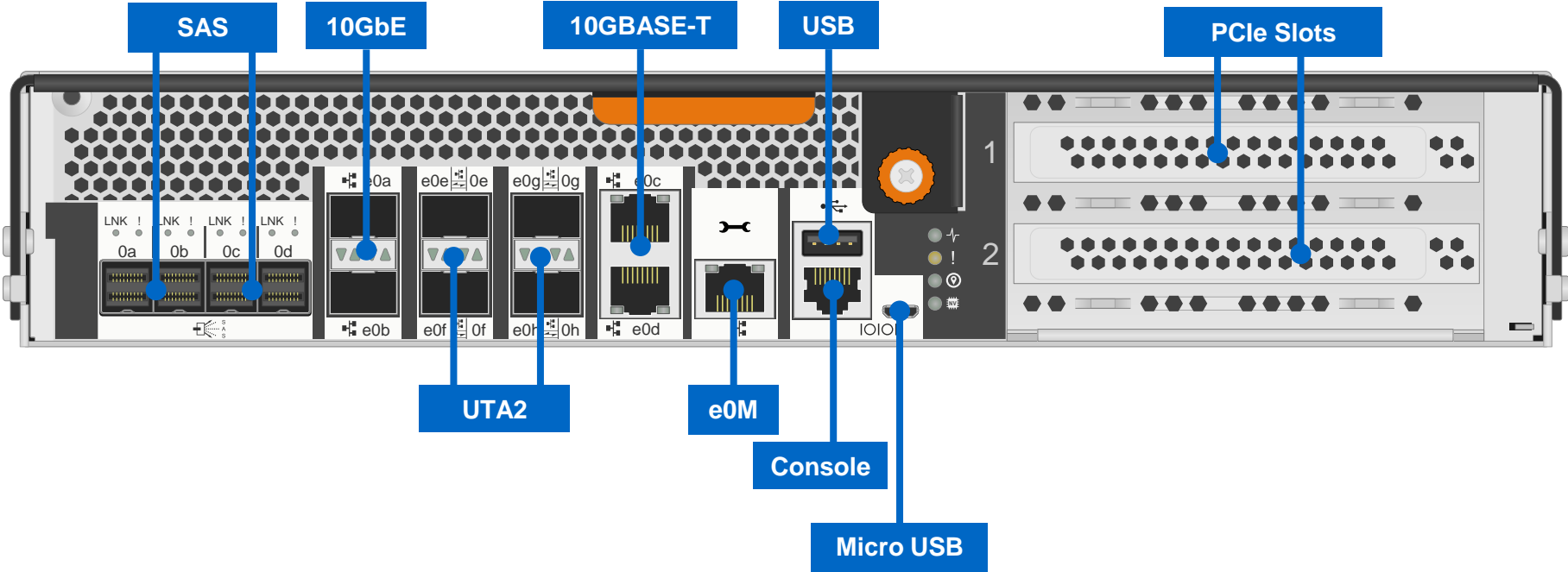
Additional details present in slide notes.

NetApp

Motherboard Image

System & NVMEM DIMMs

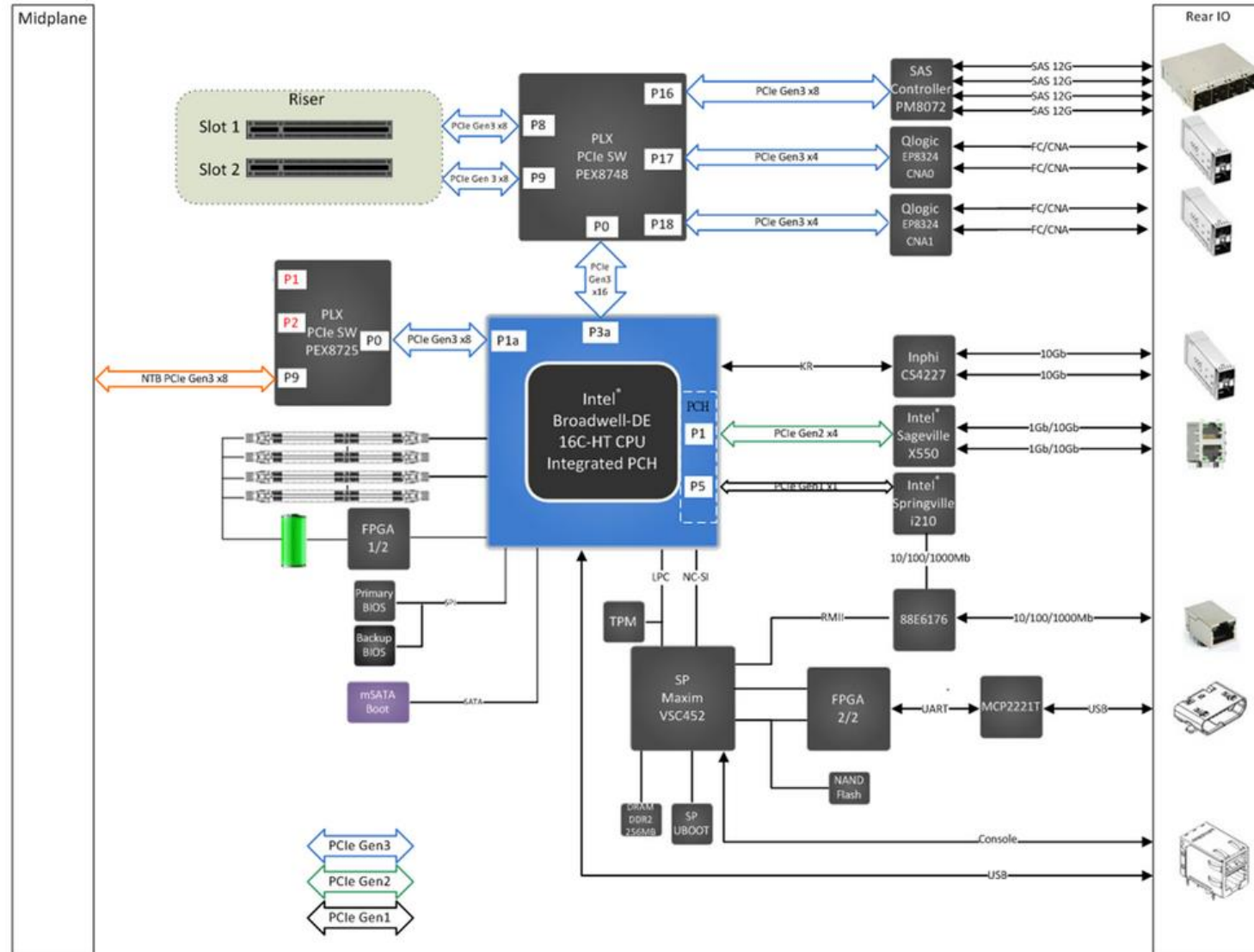NVMEM Battery

Coin Cell Battery

Boot Media (mSATA)

PCIe Slots

NetApp

AFF A300 FRU Maps
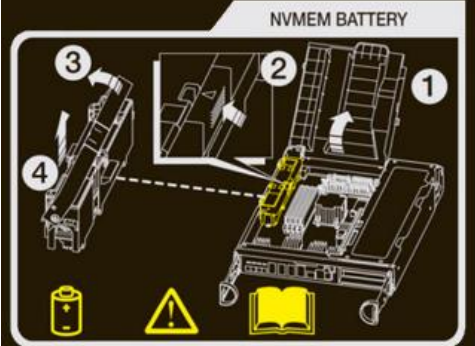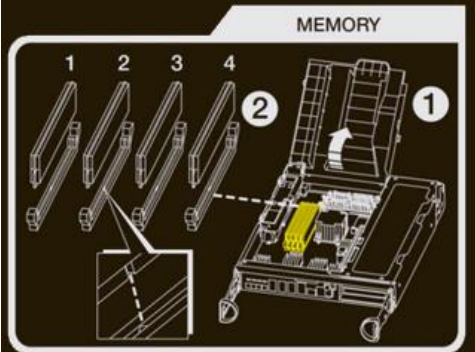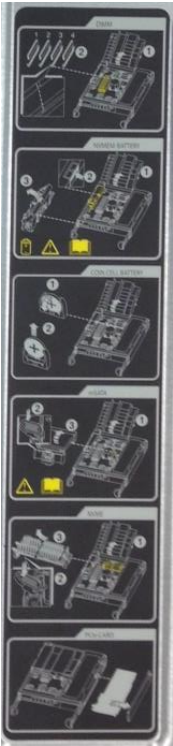
AFF A300 Block Diagram

NVMEM Architecture

- In the event of a dirty shutdown, the NVMEM battery maintains power to the DIMM slots so in-core writes are protected during reboot

- In the event of unexpected loss of power
  - NVMEM battery keeps motherboard powered up temporarily
  - NVMEM contents are destaged to boot device
  - Motherboard powers down after NVMEM data has been destaged to boot device

- Offers persistent write cache for write data not committed to drives
  - No need to worry about minimum 72-hour battery life to protect NVMEM data

- Destaged data stored on boot device is encrypted for added security

- A normally charged battery capable of about 25 destage events

NetApp
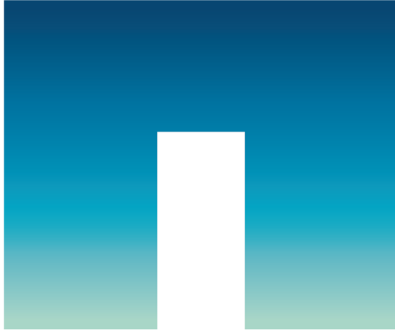
SERVICE BRIEF

StorageGRID Implementation - Expansion Service

This Service Brief describes the fixed-scope fixed-price service which is designed for StorageGRID Implementation Expansion Service. The Customer has purchased the professional services ("Professional Services") on a firm-fixed price ("FFP") basis.

This Service Brief is by and between NetApp ("NetApp") and the end customer or NetApp Authorized Reseller ("Customer") identified in the NetApp Quote # 123456 dated 24/09/2020. In the absence of an effective, written agreement between NetApp and Customer, expressly governing the performance of Professional Services by NetApp, this Service Brief is subject to and governed exclusively by the NetApp Terms and Conditions attached hereto as Attachment 1, or if not, posted at: *http://www.netapp.com/us/how-to-buy/stc.html* as of the effective date of this Service Brief, identified in the Acknowledgement signature block below ("NetApp Standard PS Terms") which are incorporated herein by reference.

PROJECT OVERVIEW

This fixed-scope, fixed-price service is designed to address the StorageGRID software configuration needs of most expanding StorageGRID customers.

PROJECT SCOPE

NetApp will provide the Professional Services described in Exhibit 1 Project Scope, Deliverables, and Project Limitations.

GENERAL RESPONSIBILITIES AND ASSUMPTIONS

General Assumptions

The following assumptions are hereby acknowledged by the parties and apply to this Service Brief:

1. NetApp is not responsible for any application or host system access that encompasses coding, scripting, application analysis, system performance, troubleshooting, or applications logins outside of the Professional Services expressly described in this Service Brief.

2. Professional Services not requiring presence onsite may be performed remotely at NetApp facilities.

3. This Service Brief applies to Professional Services only. Any and all hardware and software requested or needed by Customer, in relation to the Professional Services are purchased by Customer under a separate, written agreement.

4. NetApp will test the NetApp products to standard software or hardware specifications. Completion of this testing is not a requirement of the product's acceptance which is addressed under the product purchase agreement.

5. The entirety of NetApp's obligations hereunder is set forth in the project scope below.

6. NetApp will submit written status reports on the Professional Services being performed under this Service Brief as necessary and mutually agreed upon by Customer and NetApp.

Customer Responsibilities

Completion of the Professional Services by NetApp in adherence to the terms of this Service Brief is contingent upon Customer fulfilling the following responsibilities:

1. Customer will complete all necessary facilities arrangements prior to the commencement of the Professional Services which will include but not be limited to such items as power, network connections, floor space, and cooling. Such required facility arrangements must be in place for the duration of this Service Brief.
2. Customer will provide to the NetApp personnel adequate onsite access to office space, equipment, and standard Internet and/or remote access, for the duration of this Service Brief, as required.

3. Should the project plan rely on electronic/network transfer of data, Customer will provision and enable any network components or services required to facilitate the data transfer.
4. Customer will provide security passes to cover the duration of this Service Brief to allow NetApp access, and the ability to enter and leave Customer Sites, with laptop personal computers and any other materials related to the Professional Services to be performed under this Service Brief.
5. Customer will ensure that data backup is performed.
6. Be responsible for any business and data application testing and all necessary data back-up in preparation for and during the performance of the Professional Services.
7. Customer shall be solely responsible for management and adequacy of its data back-up, data recovery, and disaster recovery measures. Notwithstanding anything to the contrary herein, NetApp shall not be responsible or held liable for any Customer internal processes, procedures, or requirements, or otherwise to insure the protection against loss or corruption, availability, confidentiality, or security of data or information or lack thereof.
8. Make knowledgeable staff and system administrators available to NetApp promptly upon request and for the duration of this Service Brief, as required.
9. Provide documentation and information to NetApp that is accurate, complete, and up to date.
10. If required by NetApp, Customer will participate in testing as directed by NetApp.

PROJECT SCHEDULE OF PERFORMANCE

The anticipated engagement estimated start date is within two (2) to four (4) weeks of the date that the purchase order is accepted by NetApp or upon another start date mutually agreed upon between the parties.

NetApp expects to complete this engagement within three (3) to four (4) weeks from commencement of performance.

Unless otherwise specified or agreed upon by NetApp, the Professional Services described in this Service Brief will be delivered on consecutive business days during-standard business hours, through 6:00 p.m. Customer's local time. Any days or hours outside of this defined time period will be classified as non-business hours.

Upon completion of the engagement, the Customer will receive a Certificate of Completion for signature, either physically or electronically, upon completion of the Professional Services. Customer will execute and return the Certificate of Completion, or provide electronic (email) acceptance, acknowledging acceptance of the Professional Services and will return the Certificate to NetApp, in accordance with the mailing instructions provided. If not signed within 5 business days from Customer's receipt, work will be deemed accepted, unless Customer submits a written notification of a service performance issue.

If performance of the Professional Services does not commence within one (1) year of the purchase order date, the order will automatically terminate in the absence of a written change request.

PROJECT SCOPE CHANGES

Any additions or changes to the project scope described in this Service Brief must be mutually agreed upon in writing in a separate Statement of Work, entered into between the parties.

FEE DESCRIPTION AND PAYMENT

NetApp requires a purchase order from the Customer or Authorized Reseller to be approved by NetApp in order to schedule delivery. Any performance outside of normal business hours, additional days, or amounts require an additional quote. If Customer is purchasing through a NetApp Authorized Reseller, the Authorized Reseller will provide their quote and any subsequent quotes to Customer.

ACKNOWLEDGEMENT		Customer's Scheduling Point of Contact	
I hereby acknowledge that I have read and agree with the service scope and business terms contained in this Service Brief.		The Customer hereby notifies NetApp that the person identified below is the individual whom NetApp should contact to schedule the delivery of these services.	
Company Name	ASL Rieti	Name	
Signer Name		Title	
Title		E-mail	

Date		Office Phone	
		Mobile Phone	

	Exhibit 1 *Project Scope, Deliverables, and Project Limitations*

A. Activities and Tasks

As part of the Professional Services, NetApp will perform the following activities and tasks. The execution of this project will be subject to the limits defined in the applicable scope below.

1. **Project Management**

NetApp project management services will be provided during the Schedule of Performance, to manage the delivery of all NetApp tasks identified in the Service Brief.

    1.1   Project Kickoff

        1.1.1   The NetApp project manager will conduct a kickoff meeting to include Customer and NetApp resources in order to:

            a.   Present and review project scope, expectations, deliverables, timelines and responsibilities/availability of the parties

            b.   Coordinate all aspects of planning and consulting

            c.   Initiate requests for information from Customer and identify timelines for completion, as required

            d.   Review Project Change Request Process

    1.2   Project Schedule and Updates

        1.2.1   Develop a detailed Project Schedule outlining tasks and dates that are agreeable to both NetApp and Customer. The Project Schedule will include a delivery schedule, and may contain resource planning, critical path determination, task durations, implementation checklists and milestones.

        1.2.2   Update the Project Schedule, as required, during Project Initiation or during the Schedule of Performance. During Discovery, NetApp will confirm or invalidate assumptions, as required. Any extension of the Professional Services for any reason other than delays caused solely by NetApp may require an increase in the Professional Service Fees. If a revised Project Schedule is required, NetApp will conduct a review with Customer's entire functional team.

        1.2.3   Coordinate regular project status updates, as required

    1.3   Project Resources

        1.3.1   Determine required staffing level and Subject Matter Experts ("SMEs") to complete the project as described in this Service Brief. NetApp will review its staffing levels with Customer.

       1.3.2   Determine escalation points of contact within Customer's organization

2. **Project Initiation Phase**

   2.1   Conduct a kickoff meeting with Project Lead(s) to:

       2.1.1   Confirm and validate the scope, approach, and deliverables

       2.1.2   Confirm roles and responsibilities

       2.1.3   Define engagement escalation process

       2.1.4   Establish status update process and meeting plan

       2.1.5   Discuss project requirements and assumptions

       2.1.6   Schedule technical discovery and data collection activities as specified in the Discovery and Design Phase activities

       2.1.7   Schedule onsite activities

   2.2   Create an initial Project Schedule itemizing: key activities, critical path dependencies, milestones with target completion dates

   2.3   Conduct a kickoff meeting with Customer's entire functional team to review:

       2.3.1   Initial Project Schedule to include critical path dependency assumptions and business requirements

       2.3.2   Business units involved in project

       2.3.3   Service hours and maintenance windows

       2.3.4   Network and hardware constraints

       2.3.5   Administrative requirements and security requirements

3. **PS Service - NetApp StorageGRID Implementation Expansion**

   3.1   Project Limitations

Category	Limits
New StorageGRID - Base	1
# of new StorageGRID Customer Site(s) (1-16 maximum)	1
# of sites to be added to Existing StorageGRID (0-15 maximum)	0
# of new Customer Site(s) using Linux Hosts (e.g. Bare Metal) (0-16 maximum)	0
# of Nodes (i.e. StorageGRID appliance ("SGA"), Non-SGA, Admin and/or Gateway)	2
Advanced Features:	
StorageGRID Advanced Feature categories and quantities are identified in the NetApp Sales Quote: I.E.: - StorageGRID Customer Sites with Fabric Pool Integration - External GRID Cloud Tiering - Number of NAS Bridges - Cloud Mirror replication	1

• AWS notification • Metadata with Elasticsearch • Cloud Mirror Replication • GRID GUI Single Sign On (SSO)	

3.2 Discovery Phase

3.2.1 Meet with Customer to complete Storage Installation Workbook.

3.2.2 Discuss Customer Information Lifecycle management ("ILM") requirement and desired network topology

3.2.3 Review completed customer workbook. Make necessary changes.

3.2.4 Review virtualized environment

3.2.5 Review discovery findings with Customer

3.2.6 Review and customize the acceptance test plan with Customer

3.3 Design Phase

3.3.1 Review GRID, including topology, network, storage, and ILM Requirements

3.3.2 Validate Interoperability Matrix Tool ("IMT") requirements for infrastructure. Provide requirements to Customer team

3.3.3 When Customer purchases Advanced Features module(s) these are identified in the NetApp sales quote and above Project Limitations. The specific Advanced Features will be discussed with Customer during the Design Phase.

3.4 Implementation Phase

3.4.1 Configure Storage Nodes (i.e. SGA or non-SGA)

3.4.2 Deploy NetApp StorageGRID Admin Nodes

3.4.3 Provision the GRID

3.4.4 Deploy Gateway nodes

3.4.5 Deploy Storage Nodes (i.e. SGA or non-SGA)

3.4.6 Linux Host Add on includes: Prepare the Linux host per site for docker container for StorageGRID nodes

3.4.7 Provide basic configuration (mail notification and SSL)

3.4.8 Configure Information Lifecycle Management policy

3.4.9 When Customer purchases Advanced Features module(s) the purchased Advanced Features are identified in the Storage Design Document. NetApp includes the following applicable configuration tasks:

   a. Archive nodes with IBM Spectrum Protect

   b. Cloud mirror replication

   c. Integration with AWS notification

   d. Metadata integration with Elastic search

   e. Up to two (2) FabricPools AFF ONTAP 9.x node and integrate with StorageGRID

   f. Test NAS bridges

3.5   Test Phase

    3.5.1   Validate NetApp StorageGRID functionality, perform basic S3 testing, ILM policy verification

    3.5.2   When Customer has purchased Advanced Features module for third party applications, NetApp provides Customer with application integration testing as per Test Plan and document the result in the Test Plan.

3.6   Completion Criteria

    3.6.1   Each PS Service Completion Criteria is met when: (1) any defined PS Service Project Limitation is met, or (2) the above Activities and Tasks are complete prior to reaching a Project Limitation, whichever occurs first.

4. **Project Closeout Phase**

    4.1   Review Project Deliverables with Customer

    4.2   Obtain Customer sign-off on Certificate of Completion for project acceptance

B. Deliverables

In connection with the Professional Services, NetApp will provide the following tangible materials (the "Deliverables") to Customer in a format or method mutually agreed upon between the parties:

1. **PS Service - NetApp StorageGRID Implementation Expansion**

    a.   StorageGRID Installation Workbook

2. **Project Closeout**

    a.   Certificate of Completion

C. Project Specific Assumptions and Customer Responsibilities

The following assumptions are hereby acknowledged by the parties and apply to the performance of the Professional Services.

1. **General**

    a.   Basic Knowledge Transfer is included. Knowledge Transfer ("KT") does not replace NetApp University training. Customer must have all necessary staff available for the KT session, and such session must occur on or before the Professional Services End Date defined in the above Project Schedule of Performance.   The KT will be delivered as 1 session lasting no more than 4 hours.

2. **PS Service - NetApp StorageGRID Implementation Expansion**

    a.   All work will be performed during normal business hours

    b.   Customer is responsible for preparing all Linux host(s) prior to NetApp StorageGRID installation. Customer preparation includes Linux OS installation, network, storage and SAN multipath ("MPIO") configuration. NetApp may provide guidance for best practices.

    c.   System testing is expected to be done in a non-production environment prior to rollout in a production environment

d. Customer has obtained all of the required software distributions and licenses as required for this specific project

e. NetApp and the Customer provide a contact who will be responsible for coordinating and managing obligations under this Service Brief

f. NetApp submits written status reports on the Professional Services being performed under this Service Brief as necessary and mutually agreed upon by Customer and NetApp

g. The Professional Services defined herein is delivered onsite or remotely

h. The entirety of NetApp's obligations is set forth in the Project Scope

i. Customer will provide access to application specialists, if necessary

j. Customer will be responsible for the submission of all change control processes to their change management system

k. NetApp provides assistance to the Customer with the integration of NetApp supported APIs, tools, and services as integration points to Customer application(s). The Customer is responsible for maintaining all non-NetApp applications, tools, and Customer-written code and scripts.

l. NetApp has no obligation to provide support or maintenance in relation to any scripts created in the performance of Professional Services. Any and all future activity for trouble shooting, addition, or changes requested after Customer's acceptance of the Professional Services must be requested in writing by Customer and will be billed at NetApp's then-current time and materials rate.

m. Customer will maintain an active software support and/or application agreement throughout the Service Brief's Schedule of Performance.

D. Project Exclusions / Out of Scope Activities

Project exclusions are any items that are not expressly included below.

1. **General**

    a. N/A

2. **PS Service - NetApp StorageGRID Implementation Expansion**

    a. Overall program management

    b. Data migration or data ingest

    c. Any work involving systems unrelated to NetApp StorageGRID software

    d. NetApp University training

    e. Installation and troubleshooting of SAN/NAS networking

    f. Building of ESX hosts or Linux hosts (if running on non-VMware environment) for GRID nodes

    g. Installation and configuration of switch or cabling to switch from host or server

    h. Network infrastructure. However, NetApp may advise on best practices.

    i. Installation and advanced administration training

    j. Any testing beyond the execution of the Acceptance Test Plan

k. End user application integration except for Third Party Applications Integration Service purchased within this Service Brief.

l. Any services not specifically agreed upon in the design

m. Any work not included in the above scope or involving systems unrelated to this service offering

n. Basic hardware and software installation/configuration services outside the scope of this engagement

1. Server rack/stack and configuration unless NetApp gear is purchased

2. Virtualization and network infrastructure setup and configuration but may provide advice on best practice

3. Preparation of Linux hosts for non-VMware deployment platform. Customer must prepare the Linux hosts Operating System, network and storage as per the NetApp StorageGRID installation guide for RHEL/CentOS or Ubuntu/Debian. All NetApp StorageGRID guides can be download from NetApp support site.

4. The client applications

5. Legacy data migration

6. Cabling of E-Series or NetApp StorageGRID appliance storage enclosure to network switch

7. Cabling of ESX or Linux hosts to network switch

8. Design and implementation of "test" environments

9. Installation and configuration of network switch

10. Integration with third party load balancers. NetApp may provide guidance.

o. Relocation of Customer Equipment

p. Troubleshooting pre-existing scripts not written or owned by NetApp

q. Writing or managing third party tools or code

r. Installation and configuration of additional software not required for this service offering

s. Any application migration

t. Any development of automation routines

u. Physical installation of NetApp storage systems can be purchased separately

v. Architecture and design services for third party or internal applications

w. Architecture and design services for virtualization infrastructure

x. Any upgrade assistance with operating systems, driver Installs or other components outside the NetApp domain

y. Installation and troubleshooting of IP networking equipment

z. ESX host installation and configuration

aa. Execution of performance and/or stress tests

bb. Configuration of advanced host access control

cc. Configuration of the storage network and/or SAN zoning

dd. Installation and application server builds

ee. Bare Metal server builds

ff. Network bandwidth evaluation, performance and tuning, and requirements definition

gg. Testing of existing backup and restore procedures or development of a business continuity strategy

hh. Tuning of network parameters of host bus adapter ("HBA")

www.netapp.com

NetApp creates innovative storage and data management solutions that accelerate business breakthroughs and deliver outstanding cost efficiency. Discover our passion for helping companies around the world go further, faster at www.netapp.com

Revision April 25, 2019

acquistinretepa.it
Il Portale degli acquisti della Pubblica Amministrazione

MERCATO ELETTRONICO DELLA PUBBLICA AMMINISTRAZIONE

OFFERTA ECONOMICA RELATIVA A:	
Numero RDO	2724321
Descrizione RDO	Ampliamento Grid Storage e servizi professionali
Criterio di Aggiudicazione	Gara al prezzo piu' basso
Lotto	1 (Ampliamento Grid Storage e servizi professionali)
CIG	8584535662
CUP	Non inserito

AMMINISTRAZIONE	
Nome Ente	AUSL RIETI
Codice Fiscale Ente	00821180577
Nome ufficio	DIREZIONE SISTEMA INFORMATICO
Indirizzo ufficio	VIA DEL TERMINILLO, 42 - RIETI (RI)
Telefono / FAX ufficio	0746279758 / 0746279754
Codice univoco ufficio per Fatturazione Elettronica	UFX1HE
Punto ordinante	CAMPOGIANI ROBERTO / CF:CMPRRT58C07H282C
Firmatari del contratto	MATTEO VIVIANO / CF:VVNMTT60L25L259Q

FORNITORE	
Ragione o Denominazione Sociale	KAY SYSTEMS ITALIA
Forma di partecipazione	Singolo operatore economico (D.Lgs. 50/2016, art. 45, comma 2, lett. a)
Codice Identificativo dell'Operatore Economico	05380651009
Codice Fiscale Operatore Economico	05380651009
Partita IVA di Fatturazione	
Sede Legale	VIALE LUCA GAURICO 9/11 - ROMA (RM)
Telefono	0654832802
Posta Elettronica Certificata	KSISPA@LEGALMAIL.IT

Tipologia impresa	Società a Responsabilità Limitata
Numero di iscrizione al Registro Imprese/Nome e Nr iscrizione Albo Professionale	05380651009
Data di iscrizione Registro Imprese/Albo Professionale	17/12/1997
Provincia sede Registro Imprese/Albo Professionale	RM
PEC Ufficio Agenzia Entrate competente al rilascio attestazione regolarità pagamenti imposte e tasse:	UL.ROMA6@AGENZIAENTRATE.IT
CCNL applicato / Settore	COMMERCIO / TERZIARIO
Legge 136/2010: dati rilasciati dal Fornitore ai fini della tracciabilità dei flussi finanziari	
IBAN Conto dedicato (L 136/2010) (*)	IT78K0569603209000003706X60
Soggetti delegati ad operare sul conto (*)	MATTEO VIVIANO C.F. VVNMTT60L25L259Q

DATI DELL'OFFERTA	
Identificativo univoco dell'offerta	6848914
Offerta sottoscritta da	VIVIANO MATTEO
Email di contatto	KSISPA@LEGALMAIL.IT
L'Offerta sarà irrevocabile ed impegnativa fino al	14/03/2021 12:00

Contenuto dell'Offerta - Oggetto di Fornitura (1 di 2)

Bando	Ampliamento Grid Storage e servizi professionali
Categoria	Storage
Descrizione Oggetto di Fornitura	Ampliamento Grid Storage
Quantità	1
PARAMETRO RICHIESTO	**VALORE OFFERTO**
Marca*	NETAPP
Codice articolo produttore*	rif. Capitolato
Nome commerciale dello Storage*	AMPLIAMENTO GRID STORAGE NETAPP COME ALLEGATI
Unità di misura*	Pezzo
Descrizione tecnica*	AMPLIAMENTO GRID STORAGE NETAPP COME DA ALLEGATI
Tipo contratto*	Acquisto
Prezzo*	150000

Contenuto dell'Offerta - Oggetto di Fornitura (2 di 2)

Bando	Ampliamento Grid Storage e servizi professionali
Categoria	Armadi Rack 19" e accessori
Descrizione Oggetto di Fornitura	Servizi Professionali di configurazione
Quantità	1
PARAMETRO RICHIESTO	**VALORE OFFERTO**
Marca*	NetApp
Codice articolo produttore*	PS-SOW-SOLUTION
Nome commerciale*	Servizi Professionali onsite
Unità di misura*	Pezzo
Descrizione tecnica*	Servizi Professionali onsite
Tipo contratto*	Acquisto
Prezzo*	8900

Offerta economica per il lotto 1

Formulazione dell'offerta economica	Valore economico (Euro)
Valore dell'offerta per il Lotto 1	**158900,00000000 Euro (centocinquantottomilanovecento Euro)**

Oneri di Sicurezza non oggetto di ribasso e non compresi nell'Offerta: *(non specificati)*

Costi di Sicurezza aziendali concernenti l'adempimento delle disposizioni in materia di salute e sicurezza sui luoghi di lavoro di cui all'art. 95, comma 10, del D. Lgs. n. 50/2016, compresi nell'Offerta: **100,00000000 (Euro)**

INFORMAZIONI DI CONSEGNA E FATTURAZIONE	
Data Limite per Consegna Beni / Decorrenza Servizi	30 giorni dalla stipula
Dati di Consegna	Via del terminillo n. 42Rieti - 02100 (RI)
Dati e Aliquote di Fatturazione	Codice IPA di Fatturazione Elettronica: UFX1HE . Aliquote: secondo la normativa vigente
Termini di Pagamento	60 GG Data Ricevimento Fattura

SITUAZIONE DI CONTROLLO DI CUI ALL'ART. 2359 C.C.
L'operatore economico non si trova rispetto ad un altro partecipante

alla presente procedura di affidamento, in una situazione di controllo di cui all'articolo 2359 del codice civile o in una qualsiasi relazione, anche di fatto, che comporti che le offerte sono imputabili ad un unico centro decisionale

SUBAPPALTO
Il Fornitore dichiara che, in caso di aggiudicazione, per il lotto "1" non intende affidare alcuna attività oggetto della presente gara in subappalto

Dichiarazione necessaria per la partecipazione alla Richiesta di Offerta resa ai sensi e per gli effetti degli artt. 46,47 e 76 del d.P.R. n.445/2000

- Il Fornitore è pienamente a conoscenza di quanto previsto dalle Regole del Sistema di e-Procurement della Pubblica Amministrazione relativamente alla procedura di acquisto mediante Richiesta di Offerta (artt. 46 e 50).
- Il presente documento costituisce una proposta contrattuale rivolta al Punto Ordinante dell'Amministrazione richiedente ai sensi dell'art. 1329 del codice civile, che rimane pertanto valida, efficace ed irrevocabile sino fino alla data sopra indicata ("L'Offerta è irrevocabile ed impegnativa fino al").
- Il Fornitore dichiara di aver preso piena conoscenza della documentazione predisposta ed inviata dal Punto Ordinante in allegato alla Richiesta di Offerta, prendendo atto e sottoscrivendo per accettazione unitamente al presente documento, ai sensi di quanto previsto dall'art. 53 delle Regole del Sistema di e-Procurement della Pubblica Amministrazione, che il relativo Contratto sarà regolato dalle Condizioni Generali di Contratto applicabili al/ai Bene/i Servizio/i offerto/i, nonché dalle eventuali Condizioni particolari di Contratto predisposte e inviate dal Punto Ordinante, obbligandosi, in caso di aggiudicazione, ad osservarle in ogni loro parte.
- Il Fornitore è consapevole che, qualora fosse accertata la non veridicità del contenuto della presente dichiarazione, l'Impresa verrà esclusa dalla procedura per la quale è rilasciata, o, se risultata aggiudicataria, decadrà dalla aggiudicazione medesima la quale verrà annullata e/o revocata, e l'Amministrazione titolare della presente Richiesta di Offerta escute l'eventuale cauzione provvisoria; inoltre, qualora la non veridicità del contenuto della presente dichiarazione fosse accertata dopo la stipula, questa potrà essere risolta di diritto dalla Amministrazione titolare della presente Richiesta di Offerta ai sensi dell'art. 1456 cod. civ.
- Per quanto non espressamente indicato si rinvia a quanto disposto dalle Regole del Sistema di e-Procurement della Pubblica Amministrazione; al Contratto sarà in ogni caso applicabile la disciplina generale e speciale che regolamenta gli acquisti della Pubblica Amministrazione.
- Il Fornitore dichiara che non sussiste la causa interdittiva di cui all'art. 53, comma 16-ter, del D.lgs. n. 165/2001 nei confronti della stazione appaltante e/o della Committente;
- Il Fornitore ha preso piena conoscenza del "Patto di Integrità", eventualmente predisposto dalla Stazione appaltante e/o dalla Committente, allegato alla richiesta di offerta, accettando le clausole ivi contenute e si impegna a rispettarne le prescrizioni;
- Il presente Documento di Offerta è esente da registrazione ai sensi del Testo Unico del 22/12/1986 n. 917, art. 6 e s.m.i., salvo che in caso d'uso ovvero ove diversamente e preventivamente esplicitato dall'Amministrazione nelle Condizioni Particolari di Fornitura della Richiesta di Offerta.

ATTENZIONE: QUESTO DOCUMENTO NON HA VALORE SE PRIVO DELLA SOTTOSCRIZIONE A MEZZO FIRMA DIGITALE