

ST930c Performance Analysis on Clustered Data ONTAP

Kurzbeschreibung: ONTAP 9 Performance Analyse including case studies and solutions	Ziele: This training provides basics about the performance analysis on Netapp systems and ONTAP. This includes the NetApp hardware, software and tools for the data analysis.
Zielgruppe: Experienced NetApp storage administrators and architects	Termine Will be scheduled on request Please let us know here , when you prefer to have this workshop!
Voraussetzungen: We suggest to visit the training "ST200c ONTAP 9.x Admin Basics" or "ST221c ONTAP 9.x Data Protection & High Availability" before. Also we recommend to have at least 9 to 12 months experience with ONTAP administration.	
Sonstiges: Dauer: 5 Tage Preis: 4500 Euro plus Mwst.	

Inhalte/Agenda:

- Introducing the following topics:
 - ◆ Physical and logical errors: e.g. fragmentation, misalignment, small IOs, reconstructs, silent data corruption
 - ◆ Further anti-bully, fairness limitations like TCP-Window size, buffer credits, quality of service and CMD queue limits for storage
 - ◆ What are the effects?
 - ◆ How can we recognize them?
 - ◆ Countermeasures from NetApp: lost write protection, free space reallocate, read reallocate, dedupe, compression, compaction, VAAI, ODX, thin provisioning
- The mathematical basics:
 - ◆ Queueing theory and the correct use of filer performance analysis
 - ◆ Detect Open and closed loads, single threaded & parallel loads at clients
- ONTAP commands to identify
 - ◆ Highest latencies
 - ◆ Highest IO loads
 - ◆ Highest data throughputs
 - ◆ Biggest queues
- Performance tuning:
 - ◆ HDD + PAM = Flash Cache
 - ◆ HDD + SSD = Flash Pool (Hybrid Aggregate)
 - ◆ SSD only = All Flash FAS (AFF)
 - ◆ Flexgroup
 - ◆ Presentation: which optimizations are possible and rational in each case?
- Sizing:
 - ◆ Adequate consideration of the client IOs
 - ◆ Estimation of the additional housekeeping IOs from a filer
 - ◆ Size of the metadata and the working set
- Overview of external monitoring tools:
 - ◆ System Manager
 - ◆ OnCommand Unified Manager with OnCommand Performance Manager
 - ◆ Harvest, Graphite, Grafana
- Troubleshooting configuration errors (HW / SW)

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Absender:

Firma: _____
Strasse: _____
PLZ/Ort: _____

Anmeldung zum Workshop ST930c Performance Analysis on Clustered Data ONTAP

Termin: Von _____ bis _____
Dauer: 5 Tage
Preis: 4500 EUR + MWST. pro Teilnehmer

Teilnehmer 1: Name: _____ Vorname: _____
Abteilung: _____
Telefon: _____ Mobil: _____
Telefax: _____
eMail: _____
eMail2: _____

Teilnehmer 2: Name: _____ Vorname: _____
Abteilung: _____
Telefon: _____ Mobil: _____
Telefax: _____
eMail: _____
eMail2: _____

Hotelwunsch: Bitte zutreffendes Ankreuzen: Ja | Nein

An- Abreise Teilnehmer 1: Von _____ bis _____

An- Abreise Teilnehmer 2: Von _____ bis _____

Rechnungsanschrift: Firma: _____
Ansprechpartner: _____
Abteilung: _____
Strasse: _____
Ort: _____

Hiermit bestätige ich die verbindliche Anmeldung zu o.g. Workshop. Ich besitze die notwendigen Vorkenntnisse.
Es gelten die AGB der qSkills GmbH & Co. KG

Ort, Datum _____ Unterschrift _____