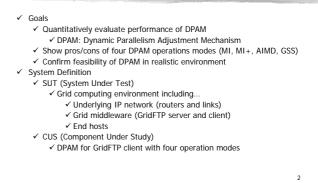
On Dynamic Parallelism Adjustment Mechanism for Data Transfer Protocol GridFTP

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### 1. State Goals and Define the System



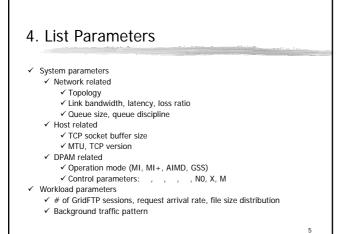
# 2. List Services and Outcomes

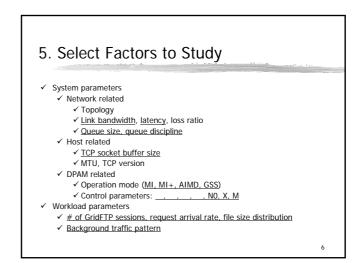
- ✓ Services Provided
- ✓ Reliable data transfer between GridFTP server and client
   ✓ Outcomes

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- ✓ High link bandwidth utilization?
- ✓ Low packet loss probability?
- ✓ Low packet transfer delay?

# Speed (case of successful service case) Individual Goodput, latency, packet loss probability Global Oueue occupancy, link utilization, packet loss probability Reliability (case of error) None Availability (case of unavailability) None





# 6. Select Evaluation Technique

- ✓ Use analytical modeling?
- ✓ No✓ Use simulation?
- ✓ Yes
- ✓ Use measurement of real system?
   ✓ No

# 7. Select Workload

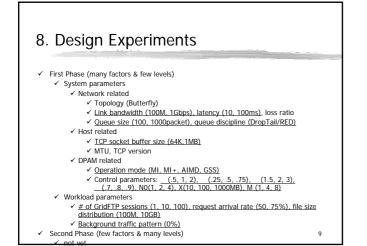
✓ GridFTP

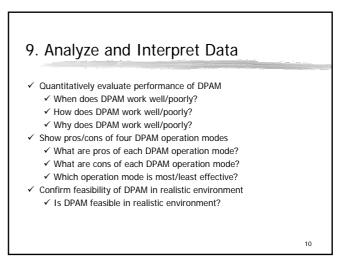
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- ✓ # of GridFTP sessions: 1 100
- ✓ Request arrival rate: 0 100% of utilization
- $\checkmark$  File size distribution: random with avg. of 100MB 1TB

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✓ Background traffic
 ✓ 0 -- 70% of the bottleneck link bandwidth





10. Present Results													
	link bandwidth	latency	queue size	queue discipline	TCP socket buffer size	operation mode	NO	x	м	# of GridFTP sessions	request arrival rate	file size distribution	background traffic pattern
goodput		$\mathcal{T}$		$\mathbf{\mathbf{n}}$	Ĵ								
latency													
packet loss probability (Individual)													
queue occupancy													
link utilization													
packet loss probability (global)													