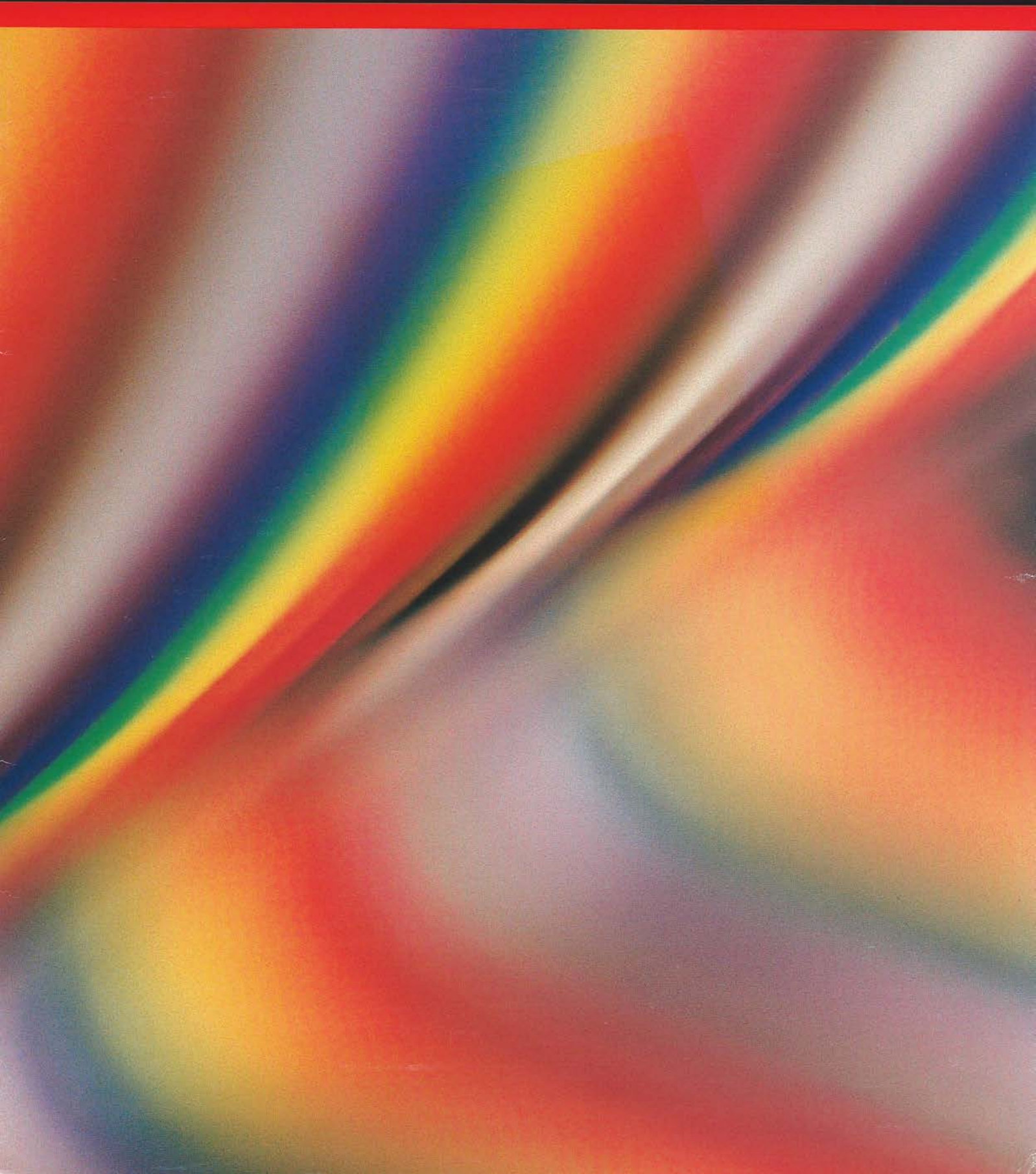


# Planning for Capacity: The 6100 Storage Processor




This summary presents results from one in a series of studies at the Amdahl Performance Evaluation Center (AmPEC).

AmPEC studies measure:

- The number of real customer transactions that can be performed by a particular computing system.
- The responsiveness of the computing system at various transaction throughput levels.

Through these measurements, AmPEC studies gauge the real deliverable power of a product to achieve service commitments to end-users in the customer environment.

## An Overview of the Study and Results




*Planning for Capacity: The 6100 Storage Processor* is a study that compares the 6100-200 Storage Processor with four Amdahl 6880-G2 controllers.

As guidelines to planning for capacity, the study presents data on:

- The average response time a user receives at the terminal level in an IMS/DB2™ application.
- The average I/O response time at the device level in an IMS/DB2 application.
- The differences in response time for 16, 32, 48, and 64 Amdahl 6380E double-capacity device configurations.

## AmPEC Goals and Procedures



AmPEC, the Amdahl Performance Evaluation Center, maintains a computer laboratory to run workloads in a simulated production environment.

In the study, the simulated workloads were used to illustrate the response time a user would experience at the terminal in various configurations.

The study presents data to illustrate the four components of I/O response time.

- IOS Queue Time
- Pend Time
- Disconnect Time
- Connect Time

## Summary of Results



The AmPEC study showed that the 6100-200 Storage Processor and four 6880-G2 controllers performed identically in this application.

The study also showed that one 6100-200 Storage Processor with 64 devices attached could saturate an Amdahl 5890-600E large-scale computer system.

The maximum input/output operation (IO) rate for this workload was over 1000 IOs per second. However, both the 6100-200 Storage Processor and the four 6880-G2 controllers still provided less than a two-second response time to the user.

The maximum rates shown in this study far exceed expected I/O rates in most applications. The data portrayed here represent highly interactive requests that required access to 100 percent of the data. In most applications at least 50 percent of the data can be dormant.

Therefore, longer strings could be accommodated. The 6100-200 with eight channel adapters and eight device adapters can service up to 128 devices.

# Configurations

Figure 1 represents the 64-device configuration tested using the 6100-200 Storage Processor with eight channel adapters and eight device adapters.

Figure 1. **6100-200 Configuration**

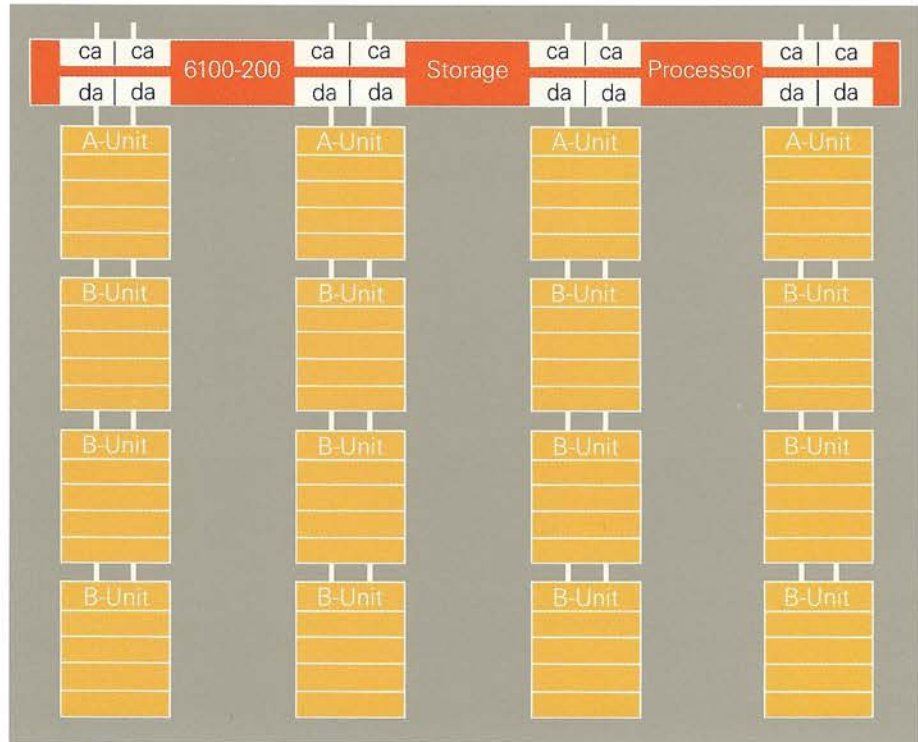
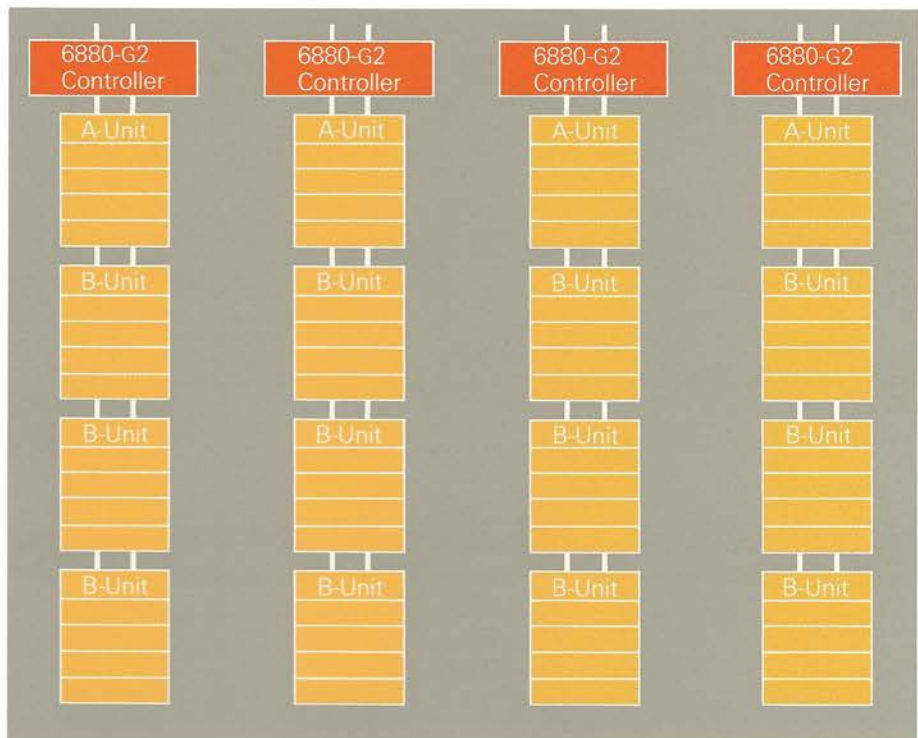


Figure 2 represents four 6880-G2 controllers with 16 devices on each.

Figure 2. **6880-G2 Configuration**



## Response Times

Figure 3 compares the user response time for the 64-device configuration.

Figure 4 compares the I/O response time for the 64-device configuration.

Figure 3. **User Response—64 Devices**

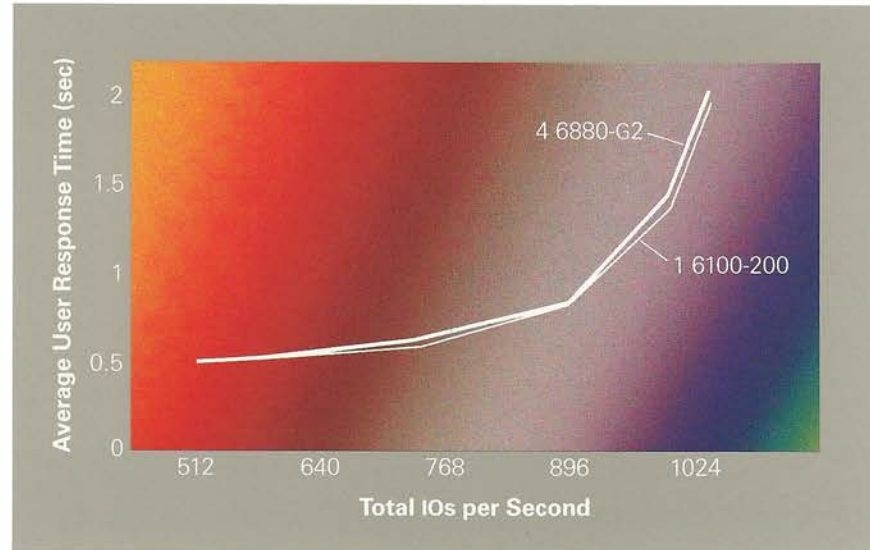
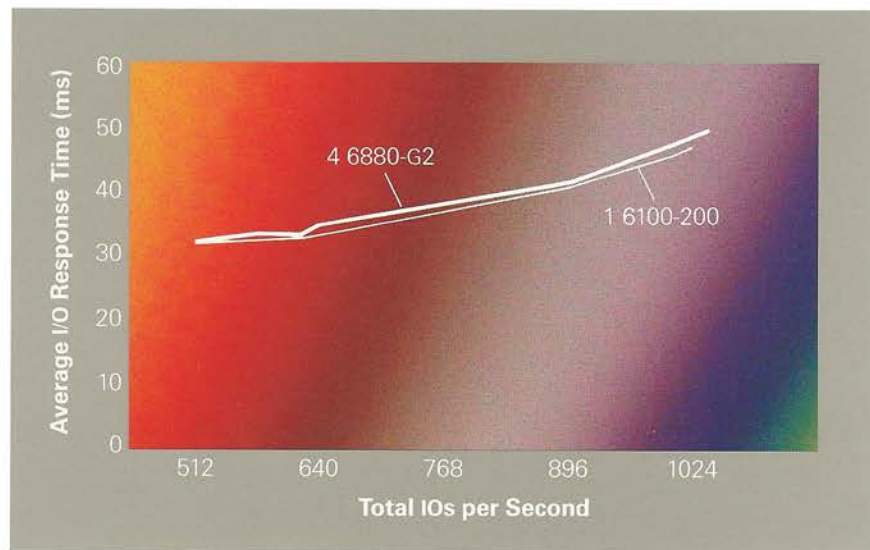


Figure 4. **I/O Response—64 Devices**



All results summarized here were developed through measurements of workloads created by Amdahl personnel. AmPEC workloads approximate true production workloads. Estimation of relative performance for a given customer depends on the

customer's specific application and operating environment.

For further information on this study or other AmPEC studies, please contact your local Amdahl representative.

# AmPEC Publications

## Storage Products

### *Planning for Capacity:*

#### *The 6100 Storage Processor*

#### *Executive Summary (MM001572)*

A summary of the technical report

## Batch

### *Planning for Capacity: Comparative*

#### *Batch Analysis*

#### *AmPEC Technical Report (MM001473)*

Detailed performance comparisons of 5890-300E, 5890-600E, and 5990-700 in scientific and batch workload environments

### *Planning for Capacity: Comparative*

#### *Batch Analysis*

#### *Executive Summary (MM001477)*

A summary of the technical report

## Interactive

### *Planning for Capacity: Comparative*

#### *Interactive Performance*

#### *AmPEC Technical Report (MM001474)*

Detailed performance comparisons of 5890-300E, 5890-600E, and 5990-700 in TSO, IMS and CICS environments

### *Planning for Capacity: Comparative*

#### *Interactive Performance*

#### *Executive Summary (MM001478)*

A summary of the technical report

## VM/CMS

### *Planning for Capacity: VM/CMS, Volume 2*

#### *AmPEC Technical Report (MM001393)*

Detailed performance data on 580 Series Models 5880, 5890-300E, and 5890-300E with MDF

### *Planning for Capacity: VM/CMS, Volume 2*

#### *Executive Summary (MM001394)*

A summary of the technical report

## TSO

### *Planning for Capacity: TSO, Volume 2*

#### *AmPEC Technical Report (MM001304)*

Detailed performance data on 580 Series Models 5870 and 5890-300

### *Planning for Capacity: TSO, Volume 2*

#### *Executive Summary (MM001317)*

A summary of the technical report

### *Planning for Capacity: TSO Processor*

#### *and Auxiliary Storage Options*

#### *AmPEC Technical Report (MM001355)*

Detailed performance comparisons of the 580 Series Model 5890-300E with Main Storage, Expanded Storage, and 6680 EDAS

### *Planning for Capacity: TSO Processor*

#### *and Auxiliary Storage Option*

#### *Executive Summary (MM001356)*

A summary of the technical report

## Multiple Domain Feature

### *Planning for Capacity: Multiple Domains*

#### *AmPEC Technical Report (MM001335)*

Detailed performance data on 580 Series Model 5890-300

### *Planning for Capacity: Multiple Domains*

#### *Executive Summary (MM001336)*

A summary of the technical report

## CICS

### *Planning for Capacity: CICS, Volume 2*

#### *AmPEC Technical Report (MM001312)*

Detailed performance data on 580 Series Models 5870, 5890-200, and 5890-300

### *Planning for Capacity: CICS, Volume 2*

#### *Executive Summary (MM001325)*

A summary of the technical report

## IMS

### *Planning for Capacity: IMS, Volume 2*

#### *AmPEC Technical Report (MM001305)*

Detailed performance data on 580 Series Models 5870, 5890-200, and 5890-300

### *Planning for Capacity: IMS, Volume 2*

#### *Executive Summary (MM001334)*

A summary of the technical report

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### Corporate Headquarters

AMDAHL CORPORATION  
1250 East Arques Avenue  
P.O. Box 3470  
Sunnyvale, CA 94088-3470  
U.S.A.

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