

Cognitive Applications revenue of \$5,765 million grew 2.3 percent as reported (4 percent adjusted for currency) compared to the prior year, driven by double-digit growth as reported and adjusted for currency in Security, and growth in industry verticals such as IoT. The Security performance included continued strong results in threat management software and services offerings. Within IoT, we had good revenue performance across the portfolio as we continued to invest in new offerings and industry-specific solutions.

Cloud & Data Platforms revenue of \$9,499 million increased 10.4 percent as reported (12 percent adjusted for currency) compared to the prior year. Performance was driven by the addition of RHEL and OpenShift and the continued execution of the combined Red Hat and IBM hybrid strategy.

Transaction Processing Platforms revenue of \$7,936 million decreased 0.5 percent as reported, but grew 1 percent adjusted for currency in 2019, compared to the prior year. Revenue performance reflects the ongoing investment in IBM platforms, and the timing of larger transactions that are tied to client business volumes and buying cycles.

Within Cloud & Cognitive Software, cloud revenue of \$4.2 billion grew 40 percent as reported and 42 percent adjusted for currency year to year, reflecting the acquisition of Red Hat and client adoption of our hybrid cloud offerings.

Global Business Services

(\$ in millions)

For the year ended December 31:	2019	2018	Yr.-to-Yr. Percent Change	Yr.-to-Yr. Percent Change Adjusted for Currency
Global Business Services external revenue	\$16,634	\$16,595*	0.2%	2.4%
Consulting	\$ 7,993	\$ 7,705	3.7%	5.6%
Application Management	7,646	7,852	(2.6)	(0.3)
Global Process Services	995	1,037*	(4.1)	(1.3)

* Recast to reflect segment changes.

GBS revenue of \$16,634 million increased 0.2 percent as reported and 2 percent adjusted for currency in 2019 compared to the prior year. The strong growth in Consulting reflected GBS' ability to bring together our industry specific expertise and innovative technology portfolio to help clients with their digital reinventions. Our performance reflects continued investment in offerings and capabilities to help advise clients and move their applications to hybrid multi-cloud environments. In the second half, we saw an acceleration in new Red Hat engagements.

Consulting revenue of \$7,993 million increased 3.7 percent as reported and 6 percent adjusted for currency compared to the prior year. This strong performance was driven primarily by growth in offerings that enable each phase of our clients' digital journey. These offerings include cognitive technology and data platform services, application modernization and next-generation enterprise applications and offerings that use AI to help clients unlock new opportunities and realize productivity improvements.

(\$ in millions)

For the year ended December 31:	2019	2018*	Yr.-to-Yr. Percent/ Margin Change**
Cloud & Cognitive Software			
External gross profit	\$17,790	\$17,224	3.3%
External gross profit margin	76.7%	77.6%	(0.9)pts.
Pre-tax income	\$ 7,952	\$ 8,882	(10.5)%
Pre-tax margin	30.6%	35.0%	(4.4)pts.

* Recast to reflect segment changes.

**2019 results were impacted by Red Hat purchase accounting and acquisition-related activity.

The Cloud & Cognitive Software gross profit margin decreased 0.9 points to 76.7 percent in 2019 compared to the prior year. The gross profit margin decline was driven by the purchase price accounting impacts from the Red Hat acquisition.

Pre-tax income of \$7,952 million decreased 10.5 percent compared to the prior year with a pre-tax margin decline of 4.4 points to 30.6 percent which reflects the acquisition of Red Hat, ongoing investments in key strategic areas and lower income from IP partnership agreements.

Application Management revenue of \$7,646 million decreased 2.6 percent as reported, but was flat adjusted for currency. We had growth in offerings that help clients develop and manage cloud applications and modernize and automate their application portfolio, offset by continued decline in the more traditional application management engagements. With the acquisition of Red Hat, we continued to integrate OpenShift as clients' preferred cloud-native application development platform.

Global Process Services revenue of \$995 million decreased 4.1 percent as reported (1 percent adjusted for currency) as demand has been shifting away from traditional Business Process Outsourcing (BPO) offerings to new business platforms around intelligent workflows.

Within GBS, cloud revenue of \$5.2 billion grew 10 percent as reported and 13 percent adjusted for currency, reflecting the growth in cloud consulting engagements and cloud application development.